DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

4 November 2022

Reply to:
U.S. Army Corps of Engineers
St. Louis District
Environmental Compliance Section (PD-C)
1222 Spruce Street
St. Louis, MO 63103-2833

Dear Sir or Madam:

The St. Louis District, U.S. Army Corps of Engineers, has prepared a draft Environmental Assessment (EA) with unsigned Finding of No Significant Impact (FONSI) to evaluate the proposed forest stand improvement (FSI) actions at Gilbert Island in the Mississippi River between river mile 298-294 in Pike County and Ralls County, Missouri, USA.

Under the National Environmental Policy Act of 1969, as amended, the St. Louis District is distributing this letter to notify concerned agencies, tribes, interest groups, and individuals of the proposed project and to solicit comments from those persons or organizations who may be interested in or affected by the project. Section 106 surveys for this project were completed and Indian tribes were consulted pertaining to the survey on 25 July 2022. The FONSI is unsigned and would only be signed after comments received as a result of this public review have been given full consideration. The electronic version of draft EA and unsigned FONSI are available online at:

https://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/2022draftEAFONSIGilbertIslandForestry.pdf

The USACE Rivers Project Office is proposing several different forest stand improvement activities on Gilbert Island, Missouri, that would impact more than 172.6 acres. The work would be accomplished in accordance with the Rivers Project Master Plan and Rivers Project Operational Management Plan.

Please provide any comments you may have regarding this project to Evan Hill of the USACE St. Louis District Environmental Compliance Section, by **e-mail** at evan.b.hill@usace.army.mil, or by **mail** to the address above, ATTN: Environmental and Planning Branch (PD-C, Hill). **In order for comments to be considered prior to a final decision being made, they must be received by this office by close of business on 4 December 2022.**

Sincerely,

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Teri C. Allen, Ph.D.
Chief, Environmental Compliance Section

DRAFT ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO SIGNIFICANT IMPACT

Gilbert Island Forestry Management
Pike and Ralls Counties, Missouri, Mississippi River Miles 298 to 294

3 November 2022

U.S. Army Corps of Engineers, St. Louis District
Regional Planning & Environmental Division North
Environmental Compliance Section
1222 Spruce Street
St. Louis, Missouri 63103-2833
Ph: (314) 925-5004

US Army Corps of Engineers ®
St. Louis District

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1. INTRODUCTION

1.1. Introduction

This U.S. Army Corps of Engineers (Corps), Mississippi Valley Division, St. Louis District, has prepared this Environmental Assessment (EA) to evaluate the environmental impacts of the proposed Forest Stand Improvement (FSI) actions in the forested areas of Gilbert Island. Rivers Project Office biologists propose to implement FSI strategies on Gilbert Island in the Mississippi River. These actions would be accomplished in accordance with the Rivers Project Master Plan and Upper Mississippi River Systemic Forest Stewardship Plan. Forest Stand Improvement actions are needed in order to create conditions that promote the regeneration of oaks and other desirable trees in the understory. The lack of ongoing FSI actions on Gilbert Island has degraded the health of the available forest stands, leading to reduced forest community diversity, reduced forest species diversity, reduced wildlife species diversity, and an increase in invasive species.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's Regulations (40 Code of Federal Regulations §1500-1508), as reflected in the USACE Engineering Regulation 200-2-2. Impacts on environmental resources are discussed in detail in this Environmental Assessment and summarized in an unsigned Finding of No Significant Impact (FONSI). The decision whether to sign the FONSI would be made after full consideration is given to all public comments received during a 30-day public review period.

1.2. Authorizations

The Corps received Congressional authorization in 1899 through the Rivers and Harbors Act (with modifications in 1927 and 1930) to use a combination of regulating works and dredging for the purpose of securing a 9-foot-deep by 300-footwide navigation channel between St. Louis, Missouri, and Cairo, Illinois (Nine-Foot Navigation Channel Project) on the Mississippi River. To support the Nine-Foot Navigation Channel Project, Congress authorized the construction of 23 locks and dams upstream of St. Louis, Missouri, resulting in a pooled reach upstream of each lock and dam. This required the acquisition of approximately 46,274 acres of private lands within the St. Louis District in the late 1930s and early 1940s. In 1934 the Fish and Wildlife Coordination Act was passed, and 36,276 acres of the original acquisition was made available to the U.S. Fish and Wildlife Service (USFWS), Illinois Department of Natural Resources (IDNR), and Missouri Department of Conservation (MDC) through Cooperative Agreements for fish and wildlife management in 1954. However, the Corps retained the responsibility for the management of the forest resources, including those on Gilbert Island.

Furthermore, the Forest Cover Act of 1960 (Public Law 86-717) is a statutory mandate directing the Corps to manage forest resources "to encourage, promote, and assure fully adequate and dependable future resources of readily available timber, through sustained yields programs, reforestation, and accepted conservation practices and to increase the value of such areas for

conservation, recreation and other beneficial uses". The purpose of the FSI actions is consistent with the authorized purposes of the Rivers Project and the Forest Cover Act of 1960.
Gilbert Island is currently managed by the MDC through a General Plan and Cooperative Agreement between the USACE and the USFWS for wildlife. The USACE retains the responsibility to manage the forest resources through the Fish and Wildlife Coordination Act.

1.3. Location

The Gilbert Island sub-unit is located in Pike and Ralls counties, Missouri between Mississippi river mile (RM) 298 to 294 just north of Ashburn, MO (T55N R3W, Sections 1 and 2; T55N R2W, Section 06; T56N R3W, Sections 35 and 36) (Figure 1). The 1125-acre area is divided into 30 stands comprising a variety of habitats including wet forest (1,042 acres), wet meadow, (37.5 acres), shallow marsh (7.3 acres), and open water (38.4 acres). Gilbert Island is only accessible by boat.

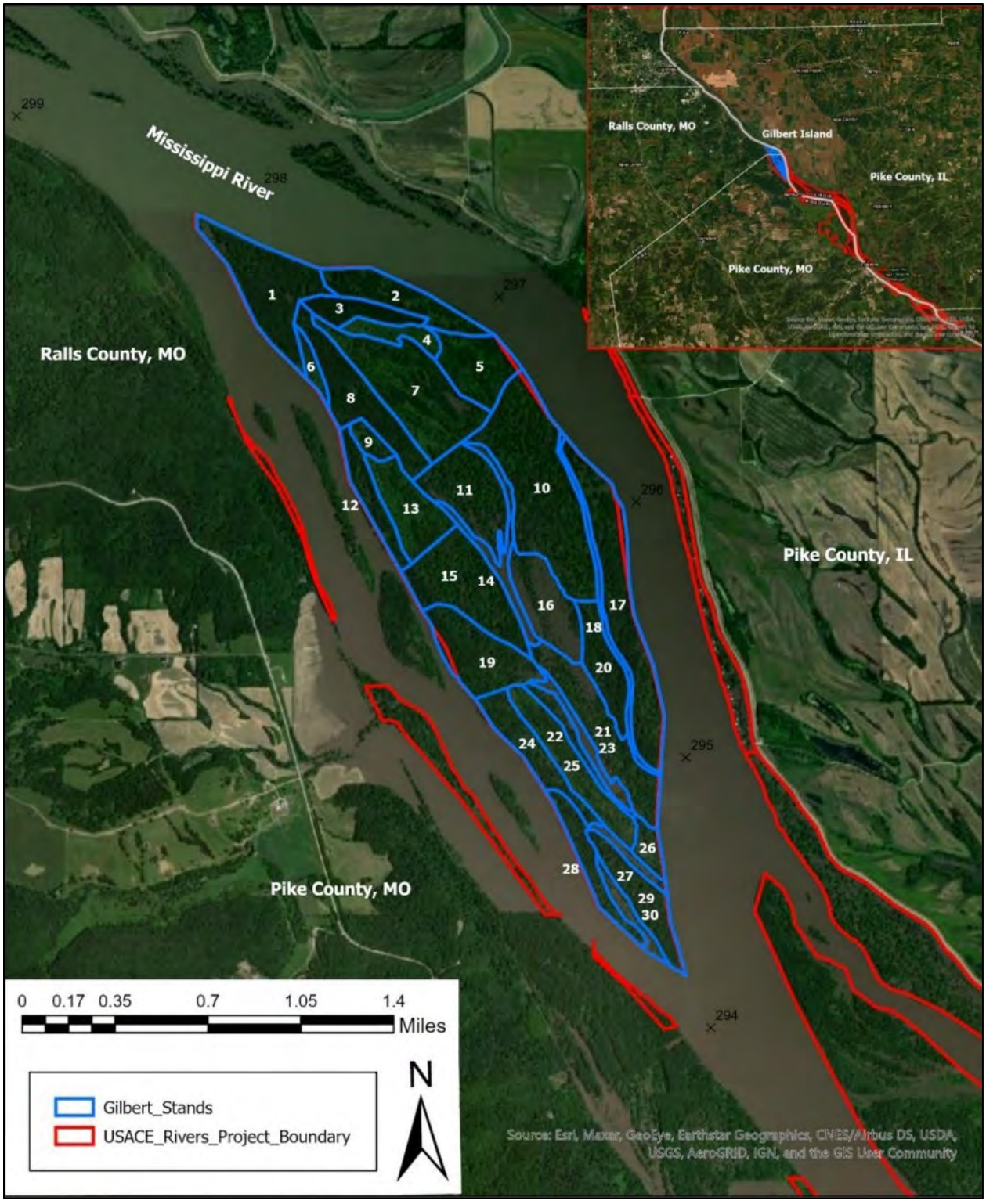

Figure 1. Map of the Gilbert Island Project Area.

1.4. Purpose and Need

The purpose of the project is to enhance the Federally-managed forest communities on Gilbert Island. The existing forest community types at Gilbert Island have remained unmanaged (i.e. passive management) for the last 75 years. These forests have degraded over time and, without intervention, would continue to degrade. Undesirable conditions include ponding on the interior of the island, low regeneration rates of desirable tree species, low species diversity, suboptimal species composition, and invasive species encroachment. The ponding on the interior of the island is undesirable because it kills mature trees and prevents regeneration of new trees. Forest management intervention is needed to create conditions that promote the regeneration of oaks, cottonwoods, maples, ash, elm, and other desirable trees in the understory and midstory. Having a wide diversity of desirable species ensures long-term sustainability of the important forest habitat types on Gilbert Island. Without a plan to address these undesirable forest conditions, there would be further degradation in the variety of forest community types available, reductions in tree species diversity, suboptimal tree species composition, loss of soil water-filtering capabilities, and a reduction in the usefulness of the forest community types to provide for wildlife.

1.5. Goals and Objectives

Gilbert Island is classified as Wildlife Management in the Rivers Project Master Plan and is managed for fish and wildlife enhancement purposes under a General Plan and Cooperative Agreement through the USWFS to MDC. The USACE management objectives for all forested areas include, but are not limited to, the forest management objectives outlined by MDC.

Current MDC Forest Management Goals and Objectives include:

- Maintain a healthy forest natural community for wildlife habitat.
- Management of the forest communities will include monitoring of reforestation areas for invasive species and need for forest stand improvement.
- Retain and protect existing bat roost trees.
- Control and set back of woody vegetation within some of the wetland areas.

Current USACE Forest Management Goals and Objectives include:

- Restore natural riparian forests and wetland communities through natural succession, restoration plantings, silviculture techniques, succession control, and native plant introductions.
    - Increase the quantity of cottonwood forest within several age cohorts.
    - Improve the quantity and quality of hard-mast forests (e.g. oak spp.).
    - Practice uneven-age management in Maple/Ash/Elm Forest community types to diversify forest structure.
- Sustain healthy forest and wetland communities through vegetative management to provide high quality habitat for forest wildlife.

- Prescribe forest management techniques which support federal management goals and objectives for wildlife and fish management.
- Control Japanese hops through herbicide application followed by planting with rapid growing forest species, such as eastern cottonwood and sycamore.

2. ALTERNATIVES EVALUATED

2.1. Alternatives Evaluated

This section describes the alternatives proposed to address the objectives laid out in Section 1.5. The action alternative evaluates proposed FSI actions at Gilbert Island. As required by NEPA, the "No Action" alternative is also evaluated. The expected consequences of the two alternatives will be discussed in Chapter 3.

Alternative 1: Passive Management (No Action Alternative)

The "No Action" alternative is the alternative for which no federal actions would be carried out. This alternative represents the baseline or reference against which to describe environmental effects of the action alternative. Under this scenario, Gilbert Island would continue to perform its operation and maintenance responsibilities but would not carry out any FSI treatments, though invasive species management may still take place.

Alternative 2: Forest Stand Improvement (Tentatively Selected Plan)

The Rivers Project Office is proposing several different forest stand improvement activities on Gilbert Island that would impact more than 172.6 acres. The work would be accomplished in accordance with the Rivers Project Master Plan (MP) and Rivers Project Operational Management Plan (OMP). Proposed forest stand improvement activities include:

- Seed Tree Method on approximately 50 acres to help promote regeneration of early successional forest.
- Interplanting hard mast tree species on about 15 acres to restore Oak/Hickory Forest.
- Interplanting eastern cottonwood and American sycamore on approximately 42 acres to help establish young early successional forest.
- Creation of several 0.25-acre canopy gaps through tree removal.
- Herbicide treatment to reduce the dominance of woody vines and improve natural regeneration on about 53 acres.
- Improving the flow of water across the island through several excavation sites on the island. The excavation would increase the flow of water off of the site following high-water events decreasing damage to trees by standing water. These improvements would affect approximately 585 acres of the island surface.

2.2. Detailed description of FSI Alternative

Forest Stand Improvement

Forest Stand Improvement is broadly defined as an intermediate treatment designed to improve the composition, structure, condition, health, and growth of even or uneven-aged stands. This prescription covers a wide array of treatments which may include but is not limited to vine control, midstory removal, non-desirable tree removal, crop tree release, area thinning, fertilizer application, and/or herbicide application. Woody stems are either girdled or

completely cut off. Table 1 provides a list of each stand with existing conditions and the proposed FSI treatment. The following are typical intermediate type treatments that are included within the proposed action:

Even-aged system: Harvest methods regenerate and maintain a stand in a single age class. There are two primary types, seed tree and shelterwood.

- Seed Tree Method: This method involves cutting of all trees except for a small number of widely dispersed trees (10-30 BA/acre) retained for seed production and to establish a new age class. The seed trees method can be spaced either uniform or non-uniform depending on existing stand structure.
- Shelterwood Method: This method includes the cutting of most trees, leaving those needed to produce sufficient shade to produce a new age class in a moderated microenvironment.

Uneven-aged System: Methods regenerate and maintain a multi- aged structure by removing some trees in all size classes either singly or in small groups. The two major types are group selection and single tree selection. Midstory Tree Removal is a third option.

- Group Selection Method: This harvest system creates small openings in which trees are removed and new age classes are established. The width of groupings is commonly twice the height of the mature trees with smaller openings providing microenvironments suitable for shade tolerant regeneration and larger openings providing conditions suitable for more shade intolerant regeneration.
- Single Tree Selection Method: This method removes individual trees of all size classes, uniformly throughout the stand, to promote growth of remaining trees and to provide space for regeneration.
- Midstory Tree Removal (Thinning): Thinning is a tree removal treatment performed to reduce stand density of trees. It is utilized primarily to increase growth, enhance forest health, or reduce potential mortality. Thinning of existing forest resources would be a focus of many of the prescriptions in order to establish early successional and oak-hickory forest communities and support uneven-age management of maple-ash-elm forest communities. If necessary, invasive species would be removed from the understory and midstory before midstory thinning of trees would take place.

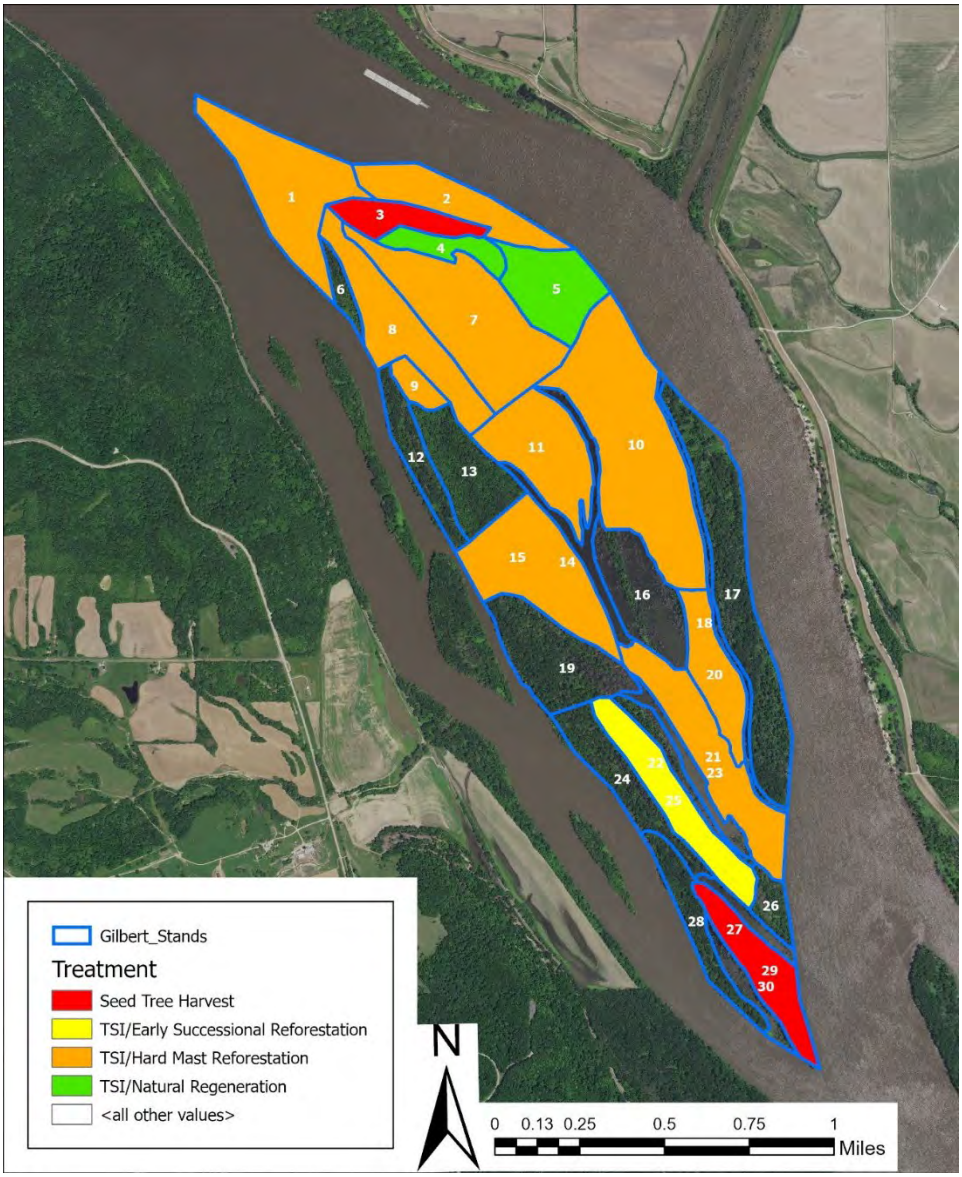

Figure 2. A map displaying the proposed treatments prescribed to each forest stand on Gilbert Island.

Other Actions:

Herbicide Treatment

Herbicides would be applied to kill woody vines and invasive shrubs following mechanical removal.

Seedling Plantings

Seedlings would be interplanted in existing forest stands where conditions are appropriate for their growth. Plantings would include oaks, hickories, eastern cottonwood, and American sycamore.

Drainage Improvements

An excavator would be used at several locations to reduce adverse impacts from ponded water that would affect approximately 585 acres of the surface of the island in order to provide conditions more suitable to early succession and seedling regeneration. Many stands throughout Gilbert Island exhibit considerable tree mortality from recent flood events and poor drainage. Many of the natural drainages are currently plugged by sediment that has been brought by the floods. Water is being trapped in forested areas for much of the growing season and killing otherwise healthy trees. The Project recommends several sites for mechanical excavation of sediment plugs on Gilbert Island that will help the existing drainage swales function as they should. This will help facilitate the release of water off the site shortly after highwaters recede and provide more suitable growing conditions for forests in lower elevation areas.

Landing/Staging Areas and Access Roads

Prior to TSI or harvest activities, access trails, haul roads, skid trails, and landing areas were identified and placed so as not to impact swales, sloughs, and ditches. If impact is unavoidable, contractor will be restricted to access sites under favorable conditions (i.e. dry or frozen conditions). Any drainage restrictions that are the result of TSI or harvest activities would be removed and returned to previous conditions. Projects in this sub unit would utilize the ferrying of heavy equipment to two designated landing sites. The two landing sites were selected based upon river depth at shoreline and bank height. Additional landing sites and access roads may be determined at a later date if the identified ones are not usable. Impact to banks would be mitigated through the use of loading ramps and identification of multiple landing sites. Figure 3 and Figure 4 provide locations of the two river landing areas and the planned access roads.

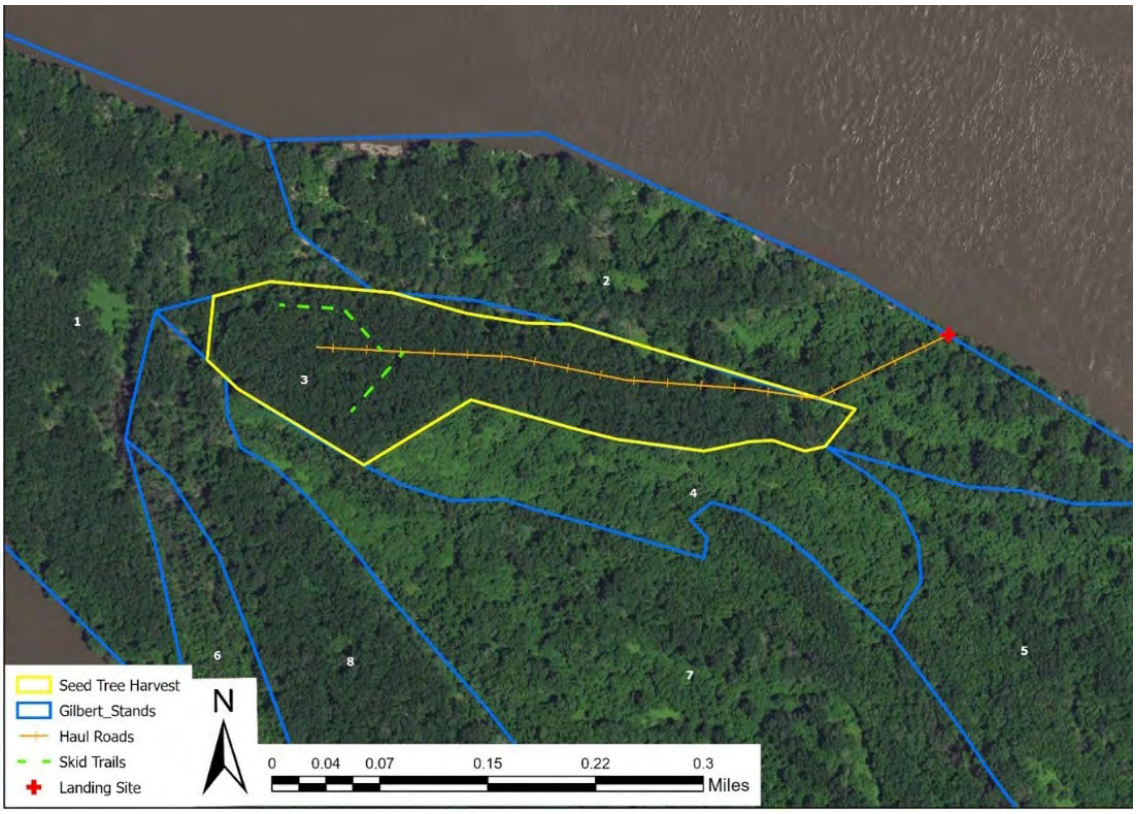

Figure 3. Map of landing area and access roads in Stand 3.

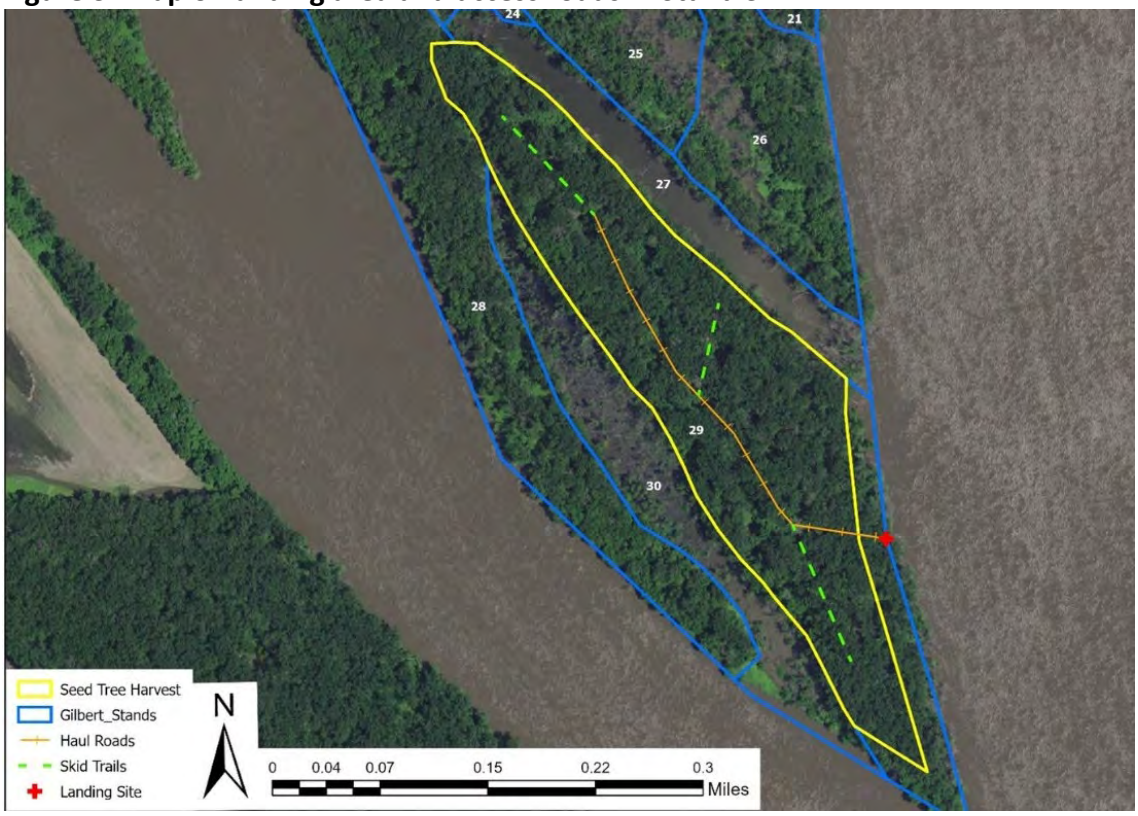

Figure 4. Map of landing area and access road in Stand 29.

Table 1. Description of the forest stands and the targeted FSI treatment for each.

Stand	**Area** (Acres)	**Basal Area** (ft2/acre)	**Current Forest Community**	**Desired Forest Community**	**Treatment**	**Affected Area** (acres)
1	67.1	118.6	cottonwood/maple; uneven	mixed uneven	planting, 0.25-acre gap creation	1.3
2	38.8	136.5	maple/ash/elm; uneven	mixed uneven	planting, 0.25-acre gap creation	1.5
3	21.1	159	cottonwood/maple; uneven	cottonwood/sycamore; early succession	Seed tree harvest	20
4	15.3	45	maple/ash/elm; uneven	maple/ash/elm; uneven	remove woody vines	15.3
5	39.5	95.3	maple/ash/elm; uneven	maple/ash/elm; uneven	remove woody vines	37.3
6	7.8	70	maple/willow	maple/willow; uneven	none	0
7	86.3	107.9	maple/ash/elm; uneven	oak/hickory; mid-succession	planting, 0.25-acre gap creation	4.1
8	53	142	cottonwood/maple; uneven	mixed uneven	planting, 0.25-acre gap creation	1.4
9	8.7	78	mixed uneven	oak/hickory; mid-succession	planting, 0.25-acre gap creation	1.8
10	121.7	125.1	maple/ash/elm; uneven	oak/hickory; mid-succession	planting, 0.25-acre gap creation	1.2
11	51.2	128.5	maple/ash/elm; uneven	oak/hickory; mid-succession	planting, 0.25-acre gap creation	1.2
12	23.2	136.7	maple/ash/elm; uneven	maple/ash/elm; uneven	none	0
13	39.5	61.5	mixed uneven	mixed uneven	none	0
14	21.5	24	maple/ash/elm	mixed uneven	planting	0
15	66.1	131.6	maple/ash/elm; uneven	oak/hickory; mid-succession	planting, 0.25-acre gap creation	1.1

16	42.6	101.3	maple/ash/elm; uneven	maple/ash/elm; uneven	none	0
17	86.5	152.8	maple/ash/elm	maple/ash/elm; uneven	none	0
18	13.6	80	aquatic	aquatic	hard point placement (divert flow through side channel)	13.5
19	50.8	169.5	mixed uneven	mixed uneven	none	0
20	30.9	136	maple/ash/elm; uneven	mixed uneven	planting, 0.25-acre gap creation	0.9
21	57.8	158.2	maple/ash/elm; uneven	mixed uneven	planting, 0.25-acre gap creation	1
22	12.8	187.5	maple/ash/elm; uneven	maple/ash/elm; uneven	none	0
23	13.5	43.3	maple/ash/elm	mixed uneven	planting	0
24	32.4	155.4	mixed uneven	mixed uneven	none	0
25	41.9	71.8	mixed	cottonwood/sycamore; early succession	planting, remove woody vines	41.9
26	10.9	171.7	mixed uneven	mixed uneven	none	0
27	7.8	100	cottonwood/maple	cottonwood; early succession	Seed tree harvest	0
28	24.3	140	cottonwood/maple	cottonwood/maple; uneven	none	0
29	33.5	160	cottonwood/maple; uneven	cottonwood/sycamore; early succession	seed tree harvest	29.1
30	10.9	48	cottonwood/maple	swamp shrubland	none	0
Total	**1131**					**172.6**

2.3. Existing Forest Condition

Current Forest Information was collected from 2016-2017 utilizing the High Intensity Forest Inventory sampling protocol. The average basal area for Gilbert Island is 123.6 ft2/ac. This is within the desired stand conditions identified in the UMRS Forest Stewardship Plan (desired 90-160ft2/ac). Stands 4, 6, 9, 13, and 25 are all forested stands that are below the minimum desired basal area of 90ft2/ac. This is likely due to the history of agriculture and tree harvest within these stands. These stands have a larger than normal number of canopy gaps and are overgrown with woody vines. There are also several stands (14, 18, 23, 27, and 30) that are transitioning to swamp shrubland due to altered hydrology and drainage. Average tree density for Gilbert Island is 100.6 trees/acre. According to the Gingrich stocking diagram for Midwest bottomland hardwood species (Larsen, Dey, & Faust, 2010), this puts the stocking density around 60%, which is within the desired stand conditions as outlined in the UMRS Forest Stewardship Plan (50%-90%). The fact that the stocking density is acceptable on the lower end of the island but the basal area is within the desired range indicates that Gilbert Island is slightly lacking trees in the smaller size classes (1”-12” DBH). This relative lack of advanced regeneration could be caused by several factors such as: increased flooding in recent years, lack of sunlight for recruitment of shade intolerant species, or seedlings being outcompeted by woody vines and invasives.

Gilbert Island is predominantly Maple/Ash/Elm Forest (59.8%) followed by Mixed Forest (20.7%) and Cottonwood/Maple (19.4%) community (Figure 5). The most abundant understory species on Gilbert Island are Maple, Mulberry, Elm, and Boxelder. The Maple/Ash/Elm Forest communities are composed of multiple age cohorts and are mostly uneven aged and will require minimal active management to continue as healthy uneven age stands. Much of the Cottonwood/Maple Forest is on the upper and lower ends of the island. These areas are relatively new accretions (within the past 100 years) and Cottonwood is still a dominant component of these early successional forests. However, they are rapidly transitioning to a Maple/Ash/Elm Forest community. The advanced state of transition and the lack of younger cottonwood stands within Gilbert Island indicates that there is a need to reset the forest succession in some of these areas to promote early successional forest. The mixed forest community could be the result of some different factors. One of those factors is the presence of hard mast species such as oaks and hickories. These areas would require work to promote these hard mast communities. Higher elevation areas were in this area historically dominated by Oak/Hickory Forest but now have transitioned to Maple/Ash/Elm or Mixed Forest. There is some potential (suitable elevation) to establish/enhance oak hickory within the Gilbert Island complex.

The species diversity and species composition of the existing forest community on Gilbert Island has degraded over time. Desirable tree species would include shagbark hickory (*Carya ovata*), bitternut hickory (*Carya cordiformis*), mockernut hickory (*Carya tomentosa*), black cherry (*Prunus serotina*), cherrybark oak (*Quercus pagoda*), pin oak (*Quercus palustris*), shingle oak (*Quercus imbricaria*), white oak (*Quercus alba*), and northern red oak (*Quercus rubra*). Undesirable tree and other plant species would include red maple (*Acer rubrum*), silver maple

(*Acer saccharinum*), sweetgum (Liquidambar spp.), elm (*Ulmus spp.*), hackberry (*Celtis spp.*), any poorly formed midstory trees, regardless of species. Invasive plants, both woody and herbaceous, negatively affect the forest community composition through competition for light, water, and nutrients. Widespread invasive shrubs and vines include autumn olive (*Eleagnus umbellata*), multiflora rose (*Rosa multiflora*), bush honeysuckle (*Lonicera maackii*), Japanese honeysuckle (*Lonicera japonica*), and winter creeper (*Euonymus fortunei*).

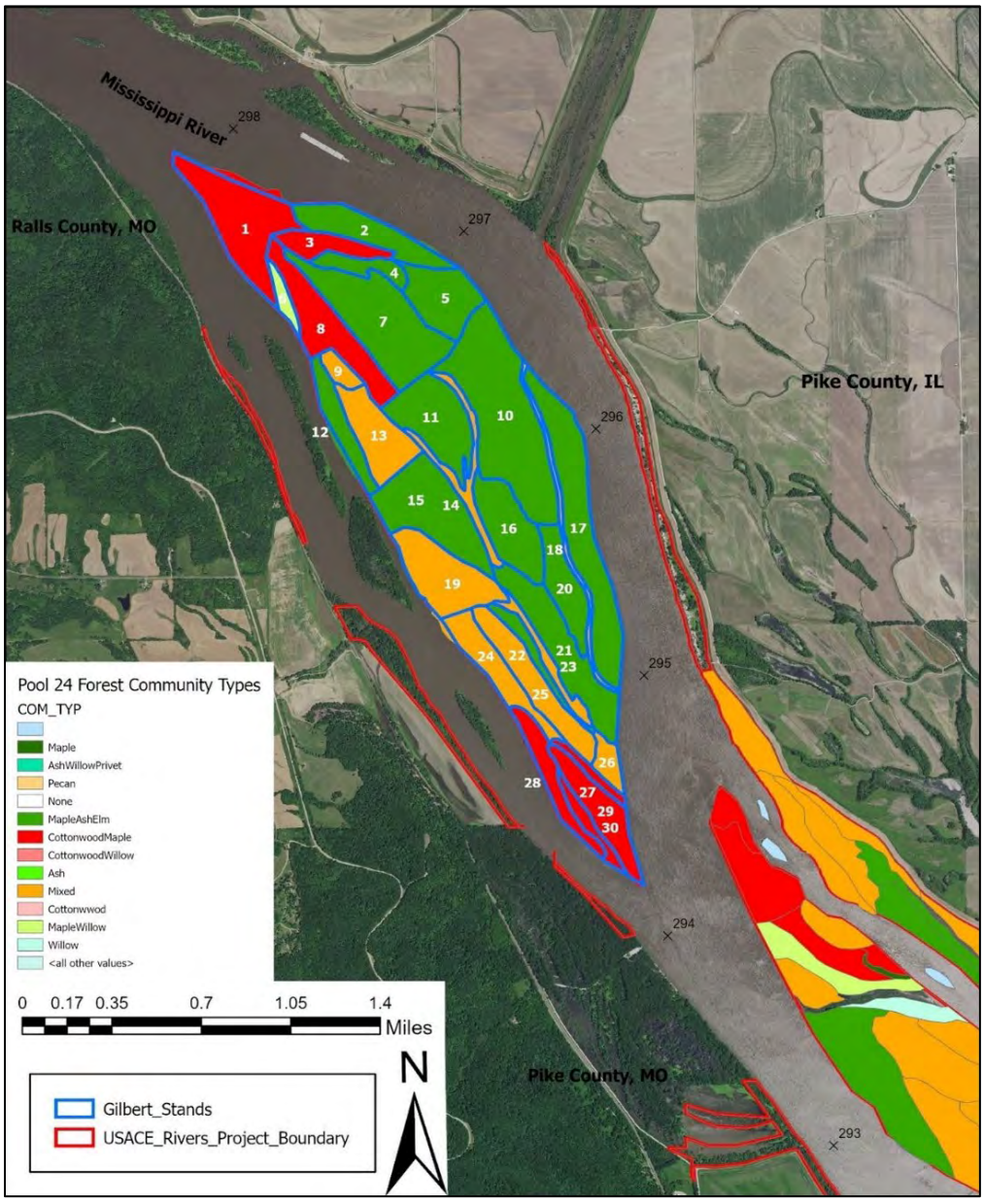

Figure 5. A map displaying the forest communities on Gilbert Island as of the 2017 forest inventory survey.

Tree health was also assessed during the forest inventory (Table 2). Trees were identified as healthy if the tree had good growth form, free from significant vines, and showed little sign of

decay. Trees were identified as stressed if an abiotic (e.g. flooding) or biotic (e.g. disease, shading, vines, mechanical) variable was causing a significant reduction in growth or health of the tree. Trees were identified as in significant decline if it appeared as if the tree would likely succumb to a stressor within the next couple of years. The final category was dead standing (snags). It was determined that 58.98% of trees sampled on Gilbert Island were classified as healthy. Stressed trees accounted for 27.4%, and another 3.2% of trees (significant decline) would likely not make it through the next few years. Standing dead trees made up 10.5% of the forest, with an average of 9.3/ac. This is well above the desired 2 snags/ac from the UMR Systemic Forest Stewardship Plan. Snags do provide essential habitat for a number of wildlife species of concern. It was noticed that the high number of snags per acre is a direct result of increased flooding in recent years and lack of drainage off the island as flood waters recede. The formation of silt plugs on the interior and borders of the island seem to result in water being trapped on the site.

Table 2. Forest health composition on Gilbert Island as of 2017.

Gilbert Health Summary by Site		
Health	Average TPA	% Composition
Vigorous	48.7	58.9 %
Stressed	37.9	27.4 %
Significant decline	4.7	3.2 %
Dead	9.3	10.5 %

The forest community on Gilbert Island is only a part of a larger mosaic of forest communities along the Mississippi on both the Missouri and Illinois side. The Sodalis Nature Preserve lies approximately 10 miles to the northwest and Ted Shanks Conservation Area is about a mile downstream of Gilbert on the Missouri side of the river. The scattered forests in Pike, Ralls, and Marion Counties have been documented to provide maternity roosts, layover roosts, and summer roosting habitat. Having many healthy forest communities that are near to each other increases the usefulness of these habitats for forest bat species by decreasing the distance between habitats and by providing a variety of forest community types within the same area. The declining health of the forest community on Gilbert would reduce the overall forest habitat available to forest bat species and increase fragmentation of remaining habitat.

2.4. Invasive Species Management

Invasive species management is in accordance with the National Invasive Species Act of 1996 (PL 104-332) and the USACE Invasive Species Policy (2009), which seeks to contain and reduce the spread and populations of established invasive species to minimize their harmful impacts. Acceptable control techniques include chemical, mechanical, biological, fire, cultural, and flooding. All of these alternatives would be evaluated prior to the implementation of a control technique. The control technique chosen would be based upon potential ecological impact, susceptibility of targeted species, cultural acceptability, and cost benefit analysis. A Pesticide Use Proposal (PUP) evaluating each control technique and justifying the use of chemical

pesticides would be produced prior to the large-scale use of a pesticide. Treatment of invasive species would occur within the proposed treatment stands as part of FSI or as needed to ensure tree seedling survival and recruitment. Monitoring pre- and post-treatment would be conducted to determine the success of the treatment and adaptive management adjustments would be made based upon this analysis.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

3.1. Physical Resources

3.1.1. Topography, Geology, and Soils

The Proposed Action Area forest lands lies within the floodplain and islands of the Upper Mississippi River. The floodplain landscape is typical ridge and swale topography created by the river as it migrated across the floodplain. The elevation on the island ranges from a high of 466 to 449 NGVD (Figure 6).

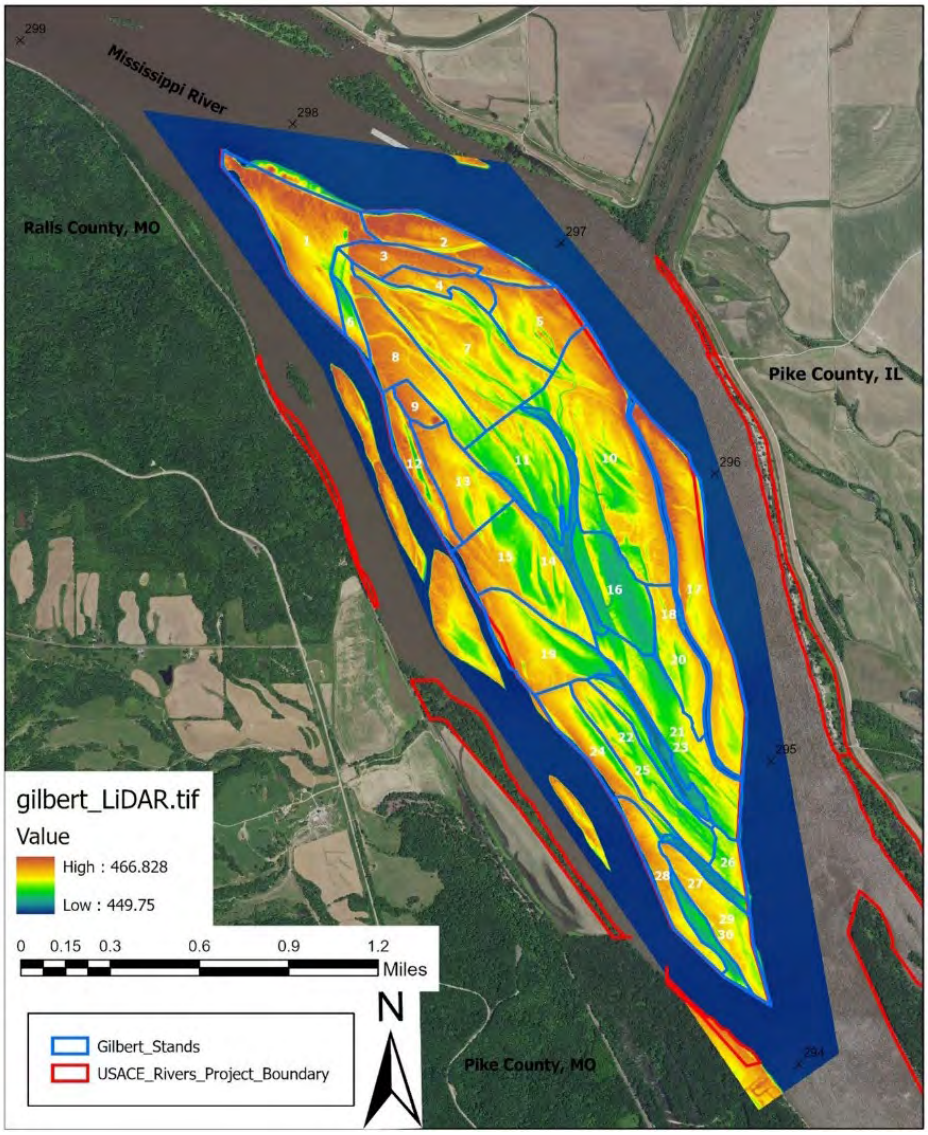

Figure 6. A map displaying the LiDAR elevation on Gilbert Island.

The low ridges in the floodplain are typically composed of sandy or silty material, while the lower swale have surface soils that are typically silty clays. The islands are typically composed of sandy or silty material. A survey of the United States Department of Agriculture (USDA) websoil survey found four soil types within the project area (Figure 7). The most common soil type was a Dockery silt loam (43.8%), followed by a Chequest silty clay (14.5%), a Landes fine sandy loam (3.5%), and a Klum loam (2.9%). The remainder of the area was water. The most common soil type, Dockery silt loam is characterized as very deep, somewhat poorly drained, moderately, or moderately-slowly permeable soil formed in alluvium.

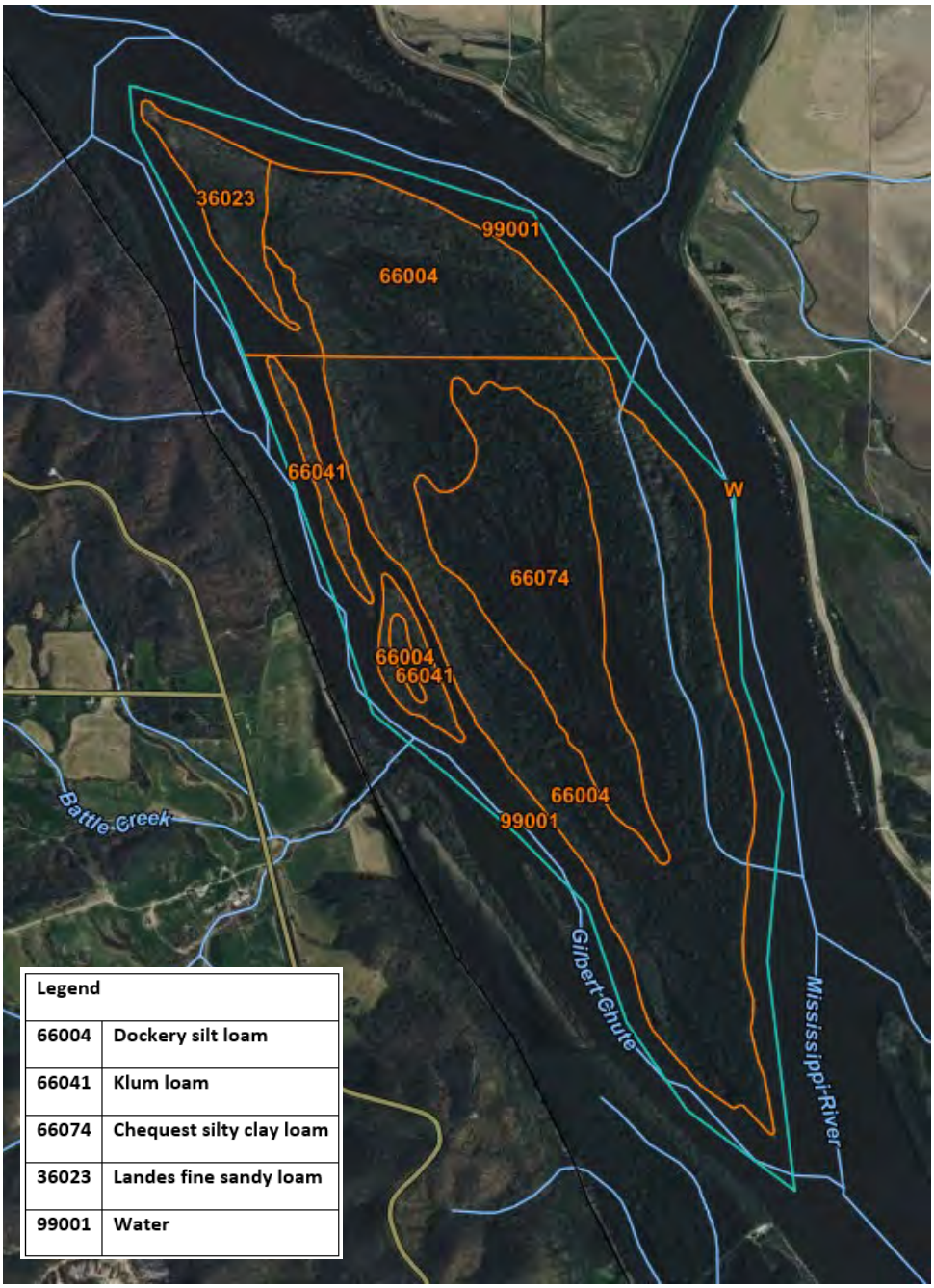

Figure 7. Websoil map of the soil types found on Gilbert Island.

Alternative 1 – No Action (Future without Project Condition (FWOP))
In the FWOP condition, no FSI actions would be taken at Gilbert Island. The geological formations beneath the island would not be altered from their present state in the FWOP condition. Soil types and soil composition at Gilbert Island would not be altered but could be expected to change naturally in the future depending on natural river processes. In addition, there may be development of hydric soils in wetter areas if the drainage improvements are not completed. The overall topography of the area is likely to change over the years due to natural ridge and swale development of the river. Future erosion and accretion may change local relief to some degree.

Alternative 2 – Forest Management (Forest Stand Improvement)
Similar to the No Action alternative, the FSI alternative would not propose to alter the underlying geology of the forest stands. The drainage improvements would reduce the likelihood of hydric soils developing in the affected area and would slightly alter the topography locally, where the sediment blocking the drainage areas is removed. The remaining soils and local relief of the island would be expected to erode and accrete according to natural river processes.

3.1.2. Prime Farmland

Using the USDA's WebSoil Survey tool, Gilbert Island was examined for the presence of Prime Farmland (Figure 8). Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. Natural Resource Conservation Service (NRCS) policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978. Excluding the water of the river itself, approximately 6.4% of the land is considered Prime Farmland (Natural Resources Conservation Service, 2021). The Klum loam and Landes fine sandy loam are considered prime farmland

Alternative 1 – No Action (Future without Project Condition)
The area and condition of Prime Farmland would not change from existing conditions if the site remained passively managed because no activities would take place on the island that would alter these conditions. Any development of soil types would be expected to change based on natural river processes. Therefore, the Prime Farmland resource would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
While the island was farmed in the past, Gilbert Island is currently managed to provide habitat for fish and wildlife. The area would continue to be managed in such a way into the future and would not be accessible to agricultural interests. The soil types on the island that are considered Prime Farmland are not expected to change based on the drainage improvements, and the other FSI activities would not alter soil types. Therefore, Prime Farmland would not be affected by the TSP.

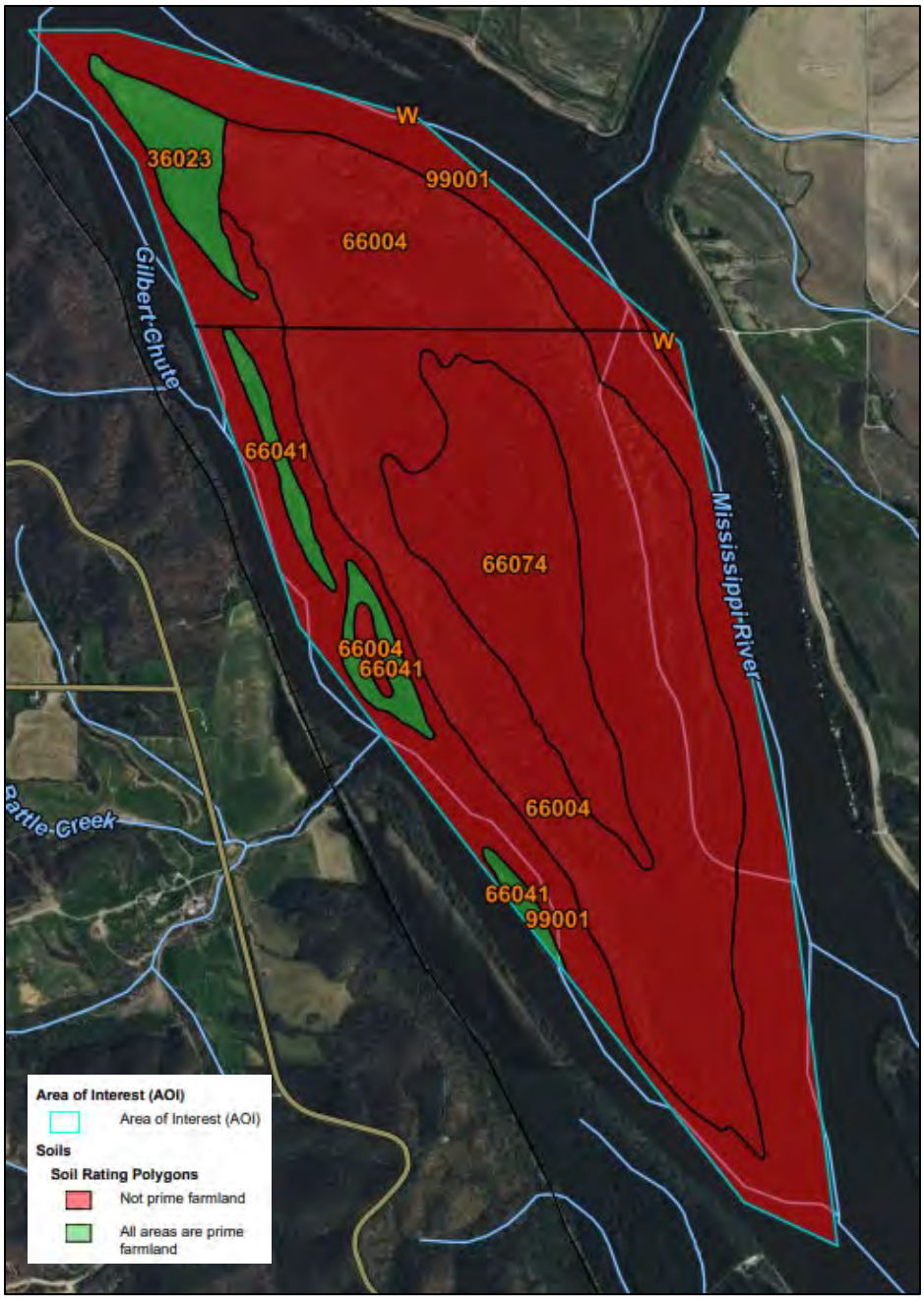

Figure 8. WebSoil Survey map illustrating which soil types are identified as Prime Farmland on Gilbert Island.

3.1.3. Land Use and Land Cover

The land on Gilbert Island is not used for commercial interests, rather, it is managed to provide habitat for fish and wildlife. A review of the 2019 National Land Cover Database (NLCD) land cover map determined that Gilbert Island is covered in two habitat types: emergent herbaceous wetland and woody wetland (Figure 9).

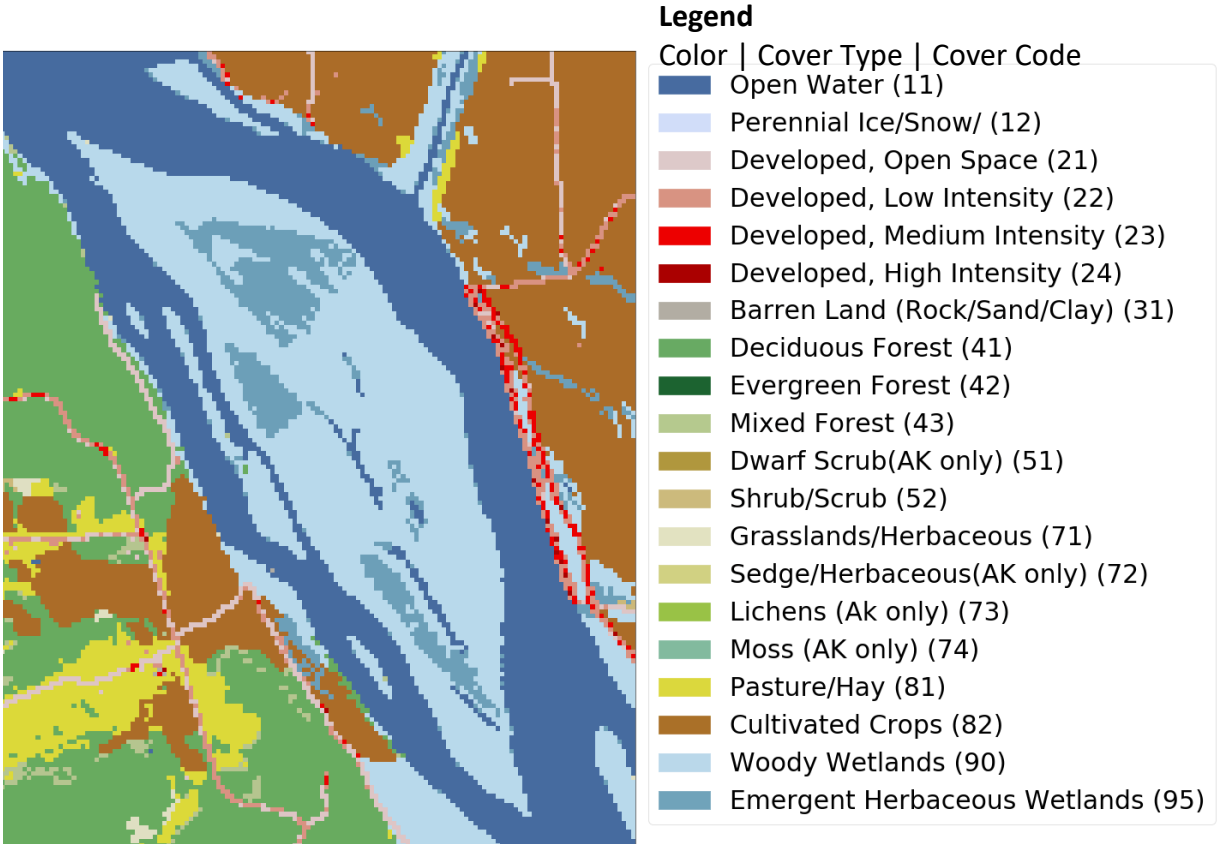

Figure 9. A map of the 2019 NLCD Land Cover on Gilbert Island.

Alternative 1 – No Action (Future without Project Condition)
In the FWOP condition, the lack of Forest Stand Improvement would not alter the land cover -it would remain a mix of woody wetland and emergent herbaceous wetland. The lack of FSI actions does not mean the land would be available for commercial development-the area would continue to be managed, albeit passively, for fish and wildlife. Passive management can impact the composition of vegetation on the island. Emergent herbaceous wetlands can develop into woody wetlands as shrubs (both invasive and native) grow where conditions allow. In contrast, areas on the island that remain inundated during the growing season (possibly because drainage is blocked by accreted material) would favor the development of emergent wetland. This dynamic would not be expected to change the overall land cover on Gilbert Island from these two primary habitat types. Therefore, Land Use/Land Cover would not be affected by the No Action plan.

Alternative 2 – Forest Management (Forest Stand Improvement)
The land use would remain management of habitat for fish and wildlife. Therefore, land use would not be impacted by the Forest Management alternative. Land cover could be impacted by the Forest Management alternative. The Forest Management alternative would involve drainage improvements, which would reduce the area that remains inundated after high water events. The ponded areas would flood and drain over time, a natural wetland hydrologic cycle. This may impact the types of vegetation that can grow in these areas, and, consequently,

impact the land cover. The wooded wetland habitat type would be enhanced by FSI activities but would not propose to increase that cover type (seedling plantings will occur in existing stands). Therefore, land cover would be benefitted by the Forest Management alternative.

3.1.4. Noise

Inadequately controlled noise presents a risk for adverse impact to humans. Noise can also impact wildlife in the vicinity. Therefore, the Federal government has enacted several measures to control noise pollution. The Noise Control Act of 1972 established by statutory mandate a national policy "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare". The 1990 Clean Air Act Amendments include Subchapter IV, relating to noise pollution. Section (c) of this subchapter IV requires that in any case where any Federal department or agency is carrying out or sponsoring any activity resulting in noise which the Administrator (of the Office of Noise Abatement and Control) determines amounts to a public nuisance or is otherwise objectionable, such department or agency shall consult with the Administrator to determine possible means of abating such noise.

Noise levels at the Gilbert Island project would be characteristic of rural areas, but with a large contribution by vessel traffic traveling up and down the Mississippi River. Compared to the surrounding rural area, the noise levels on Gilbert Island itself would be expected to be almost nonexistent, given that the island is completely undeveloped. Any noise pollution would arise almost exclusively from river vessel traffic and from rural agriculture on either side of the Mississippi River, ranging from 60-70db (Figure 10).

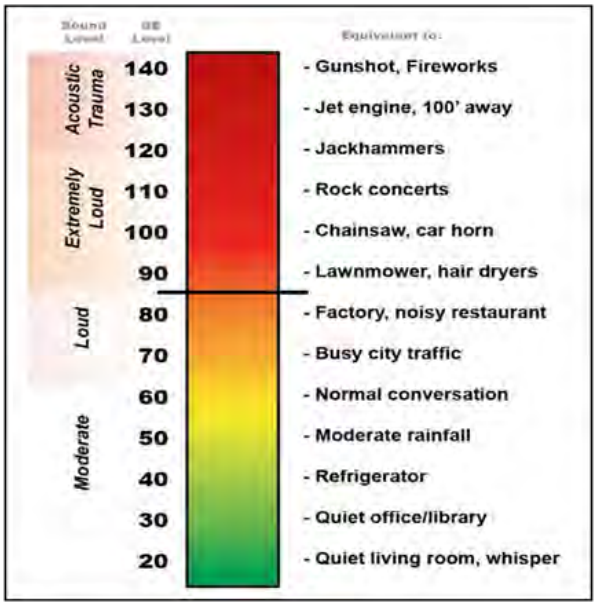

Figure 10. Examples of the sound level and decibel (dB) level of various sources.

Alternative 1 – No Action (Future without Project Condition)

The ambient noise levels will remain almost nonexistent on the island if passive management continues. The ambient noise of river traffic and the surrounding rural areas would not be

affected by the No Action alternative. Therefore, noise pollution would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
Noise levels would increase from ambient levels during the FSI actions and during any subsequent forest management. Equipment used to haul and move felled trees and the operation of chainsaws would create noise levels around 100 decibels in the immediate vicinity of the work. Noise levels would return to normal ambient levels following the work, leaving no permanent long-term noise impacts. Noise levels would be temporarily, minorly adversely impacted by the Forest Management alternative.

3.1.5. Water Quality

Water Quality Standards (WQS) are the foundation of the Clean Water Act. An objective of the Clean Water Act is to restore and maintain the chemical, physical and biological integrity of the nation's waters. Missouri WQS are defined in Code of State Regulations 10 CSR 20-7.031, which describe the desired condition of a body of water and the means by which that condition will be protected or achieved. The objective of WQS are to protect uses through applying criteria. Water quality criteria are expressed as concentrations, loads or narrative statements. The level of protection given to a stream, river or lake depends on the expected, or "designated use(s)," of that water. Once the DNR assigns designated uses to a water body, it is considered "classified" and listed in Missouri's WQS as such. Antidegradation policy requires actions to maintain and protect high quality waters and existing water quality. Missouri waters are designated for various uses including aquatic life, wildlife, agricultural use, primary contact (e.g., swimming, water skiing), secondary contact (e.g., boating, fishing), industrial use, public and food-processing water supply, and aesthetic quality.

Gilbert Island, and the surrounding Mississippi River in this segment through Pike and Ralls Counties, is not listed as impaired on the 2020 Missouri 303d list (Missouri Department of Natural Resources, 2020). The Mississippi River here is designated as warm water habitat, drinking water supply, industrial water supply, irrigation, livestock, and wildlife protection, and for secondary contact recreation. The wetland areas on Gilbert Island are not listed or classified in an official manner for WQS.

Alternative 1 – No Action (Future without Project Condition)
Future water quality conditions may change over time as a result of contributions from sources draining into the Mississippi River, but not because of the continued passive management of the forests on Gilbert Island. The water quality of wetlands on Gilbert Island and the local segment of the Mississippi River would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
The FSI actions would be in upland areas, limiting the amount of impact to the Mississippi River in the project area. Best management practices to reduce soil disturbance and sedimentation would be used, regardless. FSI actions would not contribute significant amounts of pollutants if BMPs are followed. Pollutants in the form of herbicide drift/contamination are possible.

However, all pertinent BMPs would be used to minimize the impact over-application, drift, and spills. Water Quality would have temporary, minor impacts from the FSI alternative, but no permanent long-term adverse impacts.

3.1.6. Clean Water Act Authorizations

The proposed forestry management actions would be authorized under a Nationwide Permit 27: Aquatic Habitat Restoration, Enhancement, and Establishment Activities. The Nationwide Permit conditions, the General Conditions, and the Regional Conditions will be adhered to. Therefore, 401 certification is assumed. Furthermore, the Federal Clean Water Act, Section 404 (33 CFR Part 323.4 & 40 CFR Part 232.3), exempts normal established, ongoing silvicultural activities from the permitting process for discharges of dredged or fill material in wetlands, streams and/or other jurisdictional waters of the US. However, fifteen (15) baseline provisions for forest road construction and maintenance in and across waters of the US (33 CFR Part 328.3 & 40 CFR Part 230.3) are mandated to qualify for the forest road exemption. The burden of maintaining silvicultural exemptions through historical activity, current activities, and future plans falls on the landowner. The ultimate determination of whether activities are exempt can only be made by the USACE and the USEPA. In this case, the USACE has determined that the FSI activities are exempt. A copy of NWP 27, Regional Conditions, and 401 authorization can be found in Appendix 5.

3.1.7. Hydraulics and Hydrology

Hydraulics is the study of how water moves through natural water bodies like rivers, lakes, and oceans and through artificial channels like pipes and ditches. Hydrology is the study of how precipitation and water move in relation to the adjacent land. Hydrology represents the volume of water generated from a given watershed, in this case, the Mississippi River watershed. Channel modifications, dams, and bank armoring can affect the hydraulics and hydrology of affected streams. Gilbert Island lies within the Mississippi River and is affected by the hydraulics and hydrology of the Mississippi River. The wetland areas on Gilbert Island have a hydrology of their own, flooding and drying with each season. Some areas are semi-permanently flooded because of a lack of drainage in those areas.

Alternative 1 – No Action (Future without Project Condition)
Passive management of Gilbert Island (the No Action alternative) would not affect the hydraulics and hydrology of the Mississippi River watershed.

Alternative 2 – Forest Management (Forest Stand Improvement)
Stand 18 is a 1.4-mile-long side channel (aquatic habitat) that separates Stand 17 from the rest of Gilbert Island. This side channel has become sedimented in on the upstream end and the lower end. Multiple sediment plugs and woody debris can also be found down the length of the channel. There is an abrupt edge between adjacent stands (17 and 10, 20, 21) that does not allow for aquatic vegetative habitat. We recommend installing hard points at the head of the side channel to divert flow through the channel. This will help maintain aquatic habitat and water depth throughout the channel. The hard points will not adversely impact the hydraulics and hydrology of the Mississippi River watershed. The proposed flow improvements would

permanently impact the hydrology of the lower, wetter, areas on the island by reducing the duration of inundation in a given season because water would be allowed to drain from these areas. The excavation depths proposed would allow approximately 5% of the ponded area to remain inundated.

3.1.8. Air Quality

The Clean Air Act of 1963 requires the U.S. Environmental Protection Agency (EPA) to designate National Ambient Air Quality Standards (NAAQS). The USEPA has identified standards for six criteria pollutants: ozone, particulate matter (PM_{10} = less than 10 microns; and $PM_{2.5}$ = less than 2.5 microns in diameter), sulfur dioxide, lead, carbon monoxide, and nitrogen dioxide. The EPA Greenbook provides a list of which counties in Missouri which are in nonattainment status for these pollutant criteria. The project lies in Pike and Ralls counties; neither county is in nonattainment status for any pollutant criteria (U.S. Environmental Protection Agency, 2022).

Alternative 1 – No Action (Future without Project Condition)

In the No Action Alternative, the air quality would not be adversely impacted via construction disturbance resulting from the FSI activities. Additionally, the state of the forest stands on Gilbert Island is not related to contributions of the six criteria pollutants. In the long-term, the air quality would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)

The FSI actions would involve the operation of equipment that would release emissions. This would result in a temporary minor impact to air quality. None of the proposed actions are expected to contribute substantially to the six criteria pollutants over the long-term. Air Quality would be temporarily minorly adversely impacted by the Forest Improvement alternative. A healthy forest community would provide permanent minor beneficial impacts to air quality when considered cumulatively with other forest improvement efforts in the region. Forest communities do remove pollution and do improve air quality, but the magnitude of these effects is less understood (Nowak, Hirabayashi, Bodine, & Greenfield, 2014).

3.1.9. Climate

The overall weather near Gilbert Island is a humid continental climate characterized by large seasonal differences in temperature. The Koppen Climate Classification subtype for this area is “Dfa”, or “hot summer continental climate. Existing climate data was obtained from the Hannibal, MO weather station (Weatherbase, 2022). Average monthly precipitation varies between a low of 1.8 inches in January, to a high of 4.4 inches in May. The annual precipitation, cumulatively, averages 38.5 inches. Mean monthly average temperature, predictably, is the lowest in January at 26^{o}F and the highest in July at 76.8^{o}F. Climate change characteristics that could impact the habitat on Gilbert Island include temperature, precipitation, stream flow, and changes in seasonality. Some peer-reviewed studies have found that climate change may lead to increased frequency in the occurrence of extreme flood events (Thomas C. Peterson et al, 2013). The timing of flood events will also be influenced by earlier snow melt and changes to the rain-to-snow ratio (Hodgkins, Dudley, & Huntington, 2003).

Alternative 1 – No Action (Future without Project Condition)
While the climate is likely to change over time, these general changes would not be related to the state or quality of the forest stands on Gilbert Island. Local increases in seasonal temperature may result in an easier spread of insect pests that threaten the health of forest stands. The spread of invasive insect pests would decrease the sustainability of healthy forest stands on Gilbert Island. However, as previously stated, the specific changes in future climate patterns would be unrelated to FSI actions at the Gilbert Island project. The local climate would not be affected by the No Action alternative. Climate change may result in adverse impacts to the forest health on Gilbert Island through the increased frequency in flood events in the Mississippi watershed. This would increase tree mortality as floods inundate the forested areas on the island with more frequency. The lack of proper flowage on the island would increase the duration of inundation following these flood events.

Alternative 2 – Forest Management (Forest Stand Improvement)
The climate on Gilbert Island would not be impacted by the proposed FSI actions. As with the No Action, changes in forest stand composition would not be expected to impact climate patterns directly or indirectly. The cumulative impacts from the temporary GHB emissions produced during operations are discussed in the Cumulative Impacts section. The improved water flow on the island would allow the forest communities on Gilbert Island to recover more easily from increased flood events driven by Climate Change. The proposed modification would reduce the time that the water is ponded at the base of living trees.

3.1.10. Hazardous, Toxic, and Radioactive Waste (HTRW) Concerns

The U.S. Army Corps of Engineers (USACE) regulations (ER-1165-2-132, ER 200-2-3) and District policy requires procedures be established to facilitate early identification and appropriate consideration of potential HTRW in feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting Phase I Environmental Site Assessment (ESA). USACE specifies that these assessments follow the process/standard practices for conducting Phase I ESA's published by the American Society for Testing and Materials (ASTM). The purpose of a Phase I ESA is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid known HTRW sites. However, the USACE Environmental Quality Section should be contacted immediately if HTRW material is encountered at any point during construction activities. HTRW coordination can be found in Appendix 6.

Alternative 1 – No Action (Future without Project Condition)
There would be no construction or other work disturbances that could disturb known or unknown hazardous waste. Therefore, there are no HTRW concerns associated with the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)

A Phase I study, dated May 16, 2022, was conducted for this project and identified no RECs, therefore a Phase II study was not recommended. There is still a potential of encountering hazardous substances during the proposed actions. If HTRW material is encountered at any point during the proposed FSI activities, the USACE Environmental Quality Section should be contacted to assess the conditions. USACE does not and cannot represent that the site contains no hazardous waste or material, including petroleum products.

3.2. Biological Resources

3.2.1. Aquatic Habitat and Organisms

The primary aquatic habitat on Gilbert Island are several wetlands found on the island. A review of the National Wetlands Inventory found that there are two wetland habitat types on the island, freshwater emergent and freshwater forest/shrub wetland (Figure 11). The Mississippi River provides riverine habitat and the associated riparian habitats along the bank of the island. There are no streams or springs positioned on the island itself.

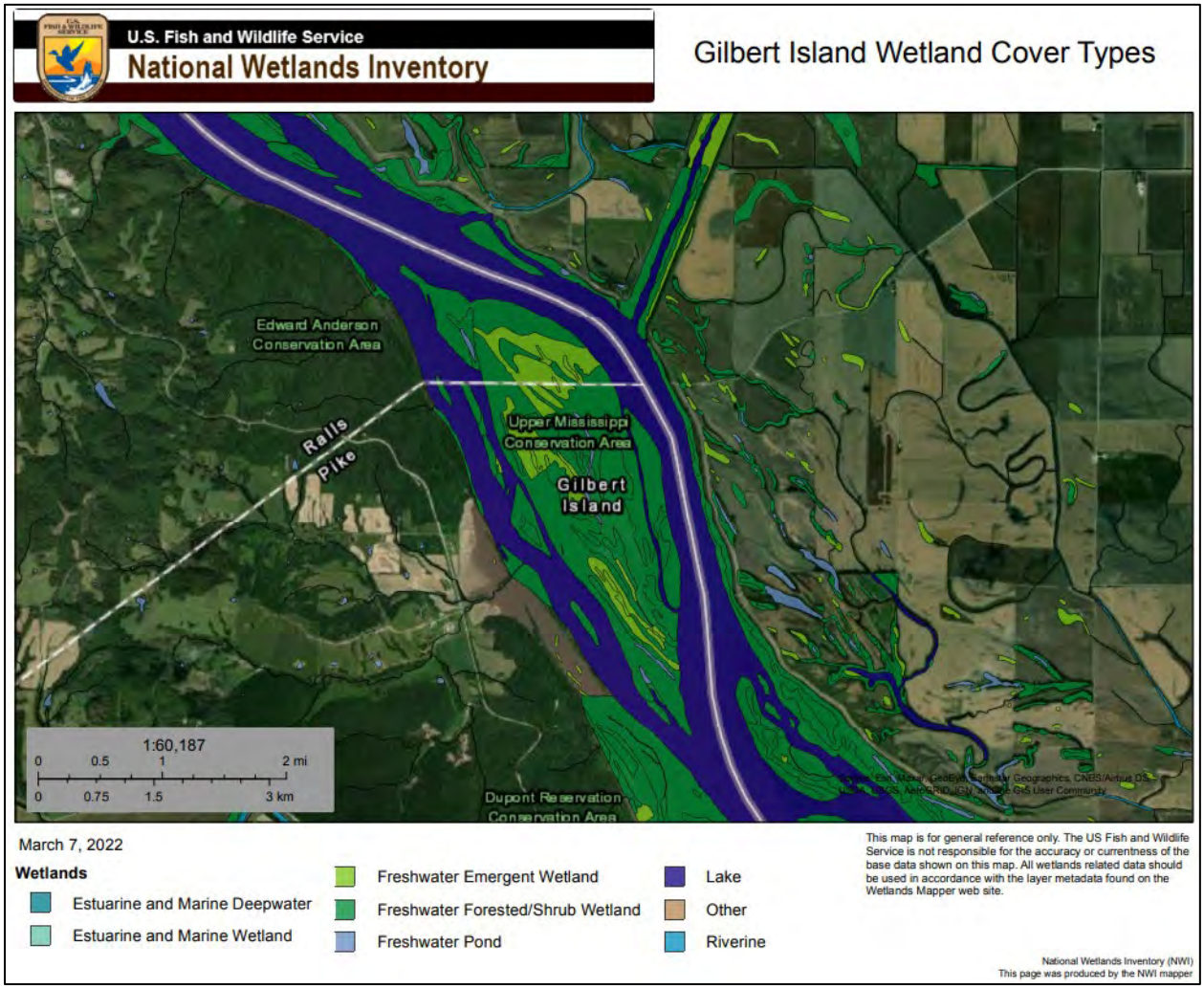

Figure 11. National Wetland Inventory map of Gilbert Island.

The wetlands on the island offer aquatic habitat for a variety of aquatic insects, crustaceans, amphibians, reptiles, and mollusks. Snakes, turtles, salamanders, frogs, and toads can all be expected to occur in these wetlands. Turtle species could include snapping turtles (*Chelydra serpentina*), river cooter (*Pseudemys concinna*) and red-eared slider (*Trachemys scripta*). The snake northern water snake (*Nerodia sipedon sipedon*) can be expected to occur as well. Amphibians like American toad (*Anaxyrus americanus*), spring peeper (*Pseudacris crucifer*), green frog (*Lithobates clamitans*), bullfrog (*Lithobates catesbeianus*), and northern leopard frog (*Lithobates pipiens*) could occur on the island. Insects like dragonflies, midges, mosquitoes, and other aquatic invertebrates would be abundant were conditions allow.

The Mississippi River itself provides stopover habitat for swans, geese, ducks, and other waterbirds in the hundreds of thousands during migration. While there would not be much area of open water on the island except immediately after high water events, the freshwater wetlands attract waterbirds like wood duck (*Aix sponsa*), hooded merganser (*Lophodytes cucullatus*), American coot (*Fulica americana*), and Virginia rail (*Rallus limicola*). Common mammals could include common muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), white-striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*).

Alternative 1 – No Action (Future without Project Condition)
The passive management strategy would not involve actions that would impact aquatic habitats on Gilbert Island. Areas of wetland on the island may increase or decrease as the river hydrology dictates but would not be related to specific decisions made by area managers. Aquatic habitats would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
The proposed flow improvements would result in the conversion of shrub-scrub wetland to bottomland hardwood forest (aka freshwater forest/shrub wetland), another wetland type. Approximately 5% of the ponded area on the island would remain following the excavation, which would provide aquatic habitat. In addition, these areas would be seasonally flooded, but would drain more efficiently following high-water events.

3.2.2. Terrestrial Habitat and Organisms

The terrestrial habitats on Gilbert Island would include bottomland forest. Almost the entire island is forested with the exception of the aquatic habitats in the form of emergent and wooded wetland. Gilbert Island is predominantly Maple/Ash/Elm Forest (59.8%) followed by Mixed Forest (20.7%) and Cottonwood/Maple (19.4%) community. The Maple/Ash/Elm Forest communities are composed of multiple age cohorts and are mostly uneven aged. Much of the Cottonwood/Maple Forest is on the upper and lower ends of the island. These areas are relatively new accretions (within the past 100 years) and Cottonwood is still a dominant component of these early successional forests. However, they are rapidly transitioning to a Maple/Ash/Elm Forest community. The mixed forest community could be the result of some different factors. One of those factors is the presence of hard mast species such as oaks and hickories. These areas will require work to promote these hard mast communities. Higher

elevation areas on Gilbert Island were historically dominated by Oak/Hickory Forest but now have transitioned to Maple/Ash/Elm or Mixed Forest. However, there is some potential (suitable elevation) to establish/enhance oak hickory within the Gilbert Island complex.

Many mammal species occur on the terrestrial habitats on Gilbert Island, including white-tailed deer (*Odocoileus virginianus*), cottontail rabbit (*Sylvilagus floridus*), fox squirrel (*Sciurus niger*), gray squirrel (*Sciurus carolinensis*), river otter (*Lontra canadensis*), American mink (*Neovison vison*), muskrat (*Ondatra zibethicus*), American beaver (*Castor canadensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and long-tailed weasel (*Mustela frenata*). A variety of nocturnal species are also present, including marsh rice rat (*Oryzomys palustris*), deer mouse (*Peromyscus maniculatus*), prairie vole (*Microtus ochrogaster*), short-tailed shrew (*Blarina brevicauda*), and many bat species. The reptiles, amphibians, and frogs mentioned in the Aquatic Habitat section can also be expected to use the terrestrial habitats, where appropriate. Eastern box turtle (*Terrapene carolina*), rat snake (*Pantherophis obsoletus*), eastern racer (*Coluber constrictor*), and northern water snake (*Nerodia sipedon*) may occur. These riparian forest is also important breeding and migratory stopover habitat for migratory birds.

Alternative 1 – No Action (Future without Project Condition)
With passive management, the quality of the forested habitat would be adversely impacted. The existing conditions of the terrestrial habitat require some amount of artificial intervention in order to eliminate invasive species and to improve the diversity and composition of tree species. The advanced state of transition and the lack of younger cottonwood stands within Gilbert Island indicates that there is a need to reset the forest succession in some of these areas to promote Early Successional Forest. The heavy invasive shrub layer restricts foraging movement for bats, while providing little in the way of food for wildlife compared to native vegetation. A variety of tree species in compositions that are similar to natural conditions create a wide variety of foods and habitats for wildlife when compared to dense monoculture stands of invasive species. Terrestrial habitat would be minorly adversely impacted by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
The FSI actions are science-driven management principals designed to create resilient and diverse forest habitat. The FSI actions would result in substantial beneficial impacts to the condition of the forest stands, and thus the wildlife habitat on Gilbert Island by removing invasive species and allowing for the development of greater species diversity, beneficial species compositions, open corridors for bat and bird foraging, and reduced competition for desirable species. During operations, the use of chainsaws, skid-steers, and other equipment would cause temporary minor adverse impacts as a result of noise, disturbance, soil compaction, and *de minimis* levels of air pollutants and sedimentation. Overall, Terrestrial habitat would be benefitted by the Forest Management alternative.

3.2.3. Bald Eagle

Although the bald eagle (*Haliaeetus leucocephalus*) was removed from the federal list of threatened and endangered species in 2007, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits unregulated take of bald eagles, including disturbance (U.S. Fish & Wildlife Service, 2020). Bald eagles occur regularly along the Mississippi River as both migrants and breeders, with some populations of year-round residents along major rivers and reservoirs in the state. There is one known active bald eagle nest on Gilbert Island and one along the riverbank on the Missouri side of the river.

Alternative 1 – No Action (Future without Project Condition)
Bald eagle nests are typically built in large, tall, mature trees. If forest health continues to decline resulting in less mature trees around the riverbank, there would be less nesting habitat available. The foraging opportunities for bald eagles around Gilbert Island are more tied to aquatic (e.g. Mississippi River) than terrestrial forest habitat, given the diet of bald eagles. Bald eagles would be minorly adversely impacted by the No Action.

Alternative 2 – Forest Management (Forest Stand Improvement)
The operation of loud equipment like chainsaws and the use of skid-steers and hauling trucks could cause a temporary minor adverse impact to nesting bald eagles within the vicinity of the work. Any active bald eagle nests would be afforded a 660-foot buffer, per BGEPA guidelines. If, for some reason, this buffer can't be adhered to, a disturbance permit would be obtained from the USFWS prior to the disturbance event.

3.2.4. Migratory Birds

The Migratory Bird Treaty Act (MBTA) of 1918 provides protection for bird species native to North America. The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The Migratory Bird Treaty Act (MBTA) prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service. The list of migratory bird species protected by the law is primarily based on bird families and species included in the four international treaties. In the Code of Federal Regulations one can locate this list under Title 50 Part 10.13 (10.13 list). The 10.13 list was updated in 2020, incorporating the most current scientific information on taxonomy and natural distribution.

On October 4, 2021, the Service published a final rule revoking the January 7, 2021, regulation that limited the scope of the MBTA. With this final and formal revocation of the January 7 rule, the Service returns to implementing the MBTA as prohibiting incidental take and applying enforcement discretion, consistent with judicial precedent and long-standing agency practice prior to 2017. This final rule went into effect on December 3, 2021.

Islands in the Mississippi River like Gilbert Island are important nesting and feeding areas for migratory birds using the Mississippi Flyway. Gilbert Island is identified as a priority forest area to focus reforestation and conservation efforts as part of the Upper Mississippi River Bottomland Forest Avian Stewardship Plan (ASP). This plan was developed in cooperation between the U.S. Army Corps of Engineers and the National Audubon Society as a regional bird-focused addendum to the Upper Mississippi River Systemic Forest Stewardship Plan. The ASP identifies 9 focal bird species that utilize the diverse Upper Mississippi floodplain forest habitats: American redstart (*Setophaga ruticilla*), indigo bunting (*Passerina cyanea*), prothonotary warbler (*Protonotaria citrea*), red-headed woodpecker (*Melanerpes erythrocephalus*), warbling vireo (*Vireo gilvus*), yellow-breasted chat (*Icteria virens*), cerulean warbler (*Setophaga cerulea*), red-shouldered hawk (*Buteo lineatus*), and willow flycatcher (*Empidonax traillii*).

USACE biologists conducted point-count bird surveys between 2014-2017 to help describe the densities of the 9 focal birds species. According to these point-count surveys, American redstarts are 2 times more abundant on Gilbert Island compared to an average island in the Rivers Project area. It is possible the relative intactness of forested habitats on Gilbert Island and nearby DuPont and Anderson Conservation Areas make it attractive to the species. Indigo bunting, prothonotary warbler, red-headed woodpecker, warbling vireo, and yellow-breasted chat densities on Gilbert Island all show similar densities and population trends when compared with the average Rivers Project island. Densities for cerulean warbler, red-shouldered hawk, and willow flycatchers were not calculated due to insufficient detections of these species by the point count survey methodology.

Alternative 1 – No Action (Future without Project Condition)
Similar to the terrestrial habitat resource, the level to which forest stands at Gilbert Island provide for the life-history needs of migratory birds would suffer adverse impacts in the No Action alternative because of degradations in forest community heath.

Alternative 2 – Forest Management (Forest Stand Improvement)
The FSI actions are carefully designed to improve the quality of the forest habitat, which would, in turn, benefit the animals that rely on quality forest habitat, like migratory birds. As with the bald eagle, the operation of loud equipment like chainsaws and the use of skid-steers and hauling trucks would cause a temporary minor adverse impact to migratory birds using the areas within the vicinity of the work. Direct adverse impact would result from trees felled that are currently used by migratory birds. The tree removal would take place between 1 November to 31 March, limiting the impact to wintering year-round residents. The work would also be spread out over 10 years, during which only portions of the total area would be impacted.

3.2.5. Invasive Species

An invasive species is one that is not native to an ecosystem and which causes, or is likely to cause, economic or environmental harm or harm to human health (U.S. Fish & Wildlife Service, 2012). In accordance with Executive Order 13122 signed in 1999, the National Invasive Species

Council was established. The National Invasive Species Council is comprised of Federal land management agencies and provides leadership regarding the control of invasive species. If a Federal agency action would affect the status of an invasive species, the EO 13122 provides the following authorizations:

a. Prevent the introduction of invasive species.
b. Detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner.
c. Monitor invasive species populations accurately and reliably.
d. Provide for restoration of native species and habitat conditions in ecosystems that have been invaded.
e. Conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species.
f. Promote public education on invasive species and the means to address them.
g. Not authorize, fund, or carry out actions that the agency believes are likely to cause or promote the introduction or spread of invasive species.

Invasive species control is an ongoing problem for forestry management on Gilbert Island. Two invasive species were identified during the forest inventory efforts. Japanese hops (*Humulus japonicus*) was found at 18 plot locations. This species is an annual vine that establishes in forest gaps. It can create a dense layer of vegetation in the understory and inhibits reforestation. Reed canarygrass (*Phalaris arundinacea*) was detected at 3 plot locations on Gilbert Island. Reed canarygrass is a common invasive species in floodplain forest gaps and wetlands. It competes with native vegetation, reducing survivorship by forming a thick mat of vegetation.

Alternative 1 – No Action (Future without Project Condition)
Even with passive management of the forest communities, some invasive species control would still be performed on the island. Non-control does not meet the Federal National Invasive Species Act (1996) or the USACE Invasive Species Policy (2009) requirements to "Contain and reduce the spread and populations of established invasive species to minimize their harmful impacts". This means that, regardless of alternative, invasive species control would be performed on the Gilbert Island. Therefore, invasive species concerns would not be impacted by the No Action alternative because, while invasive species control would be performed, it would be performed in accordance with the above policies, and not because of a measure set forth as part of the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
A concern with Forest Stand Improvement is that the creation of disturbances can spread invasive species, even if the intent of the disturbance is to improve forest communities. The felling of trees to create openings in the forest floor can create opportunities for the colonization of invasive species, which can quickly dominate native vegetation growing in the same areas. Post-treatment analysis and removal will be necessary to eliminate invasive species in the canopy gaps created by FSI actions. The FSI actions would also include invasive species removal during treatment. Given the efforts to eliminate existing invasive species and the

planned continuation of monitoring and removal efforts, invasive species concerns would be benefited by the Forest Management alternative.

3.2.6. Missouri Department of Conservation (MDC) Heritage Review

A Natural Heritage Review Report was generated on 8 March 2022 (Project #10610). The report provided conservation recommendations for Gray, Indiana, and Northern Long-eared bat and advised that the USFWS must be contacted prior to tree removal. The suggested bat conservation measures included: 1) avoid degrading stream quality, 2) leave snags where possible, 3) preserve mature forest canopy, 4) avoid entering caves especially from September to April and 5) retain forest vegetation along the stream and from cave openings to the stream. The report also provided guidance on how to minimize impacts to aquatic species and their habitats. The report suggested that impacts to these aquatic species and habitats can be reduced by avoiding or minimizing activities that disturb the stream substrate, including rock placement, dredging, trenching, and wetted gravel bar disturbance; and avoid introducing heavy sediment loads, chemical or organic pollutants. Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site.

Invasive species control recommendations were also suggested:

- Remove any mud, soil, trash, plants, or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

A detailed follow-up report was provided by MDC on 02 May 2022 which included a list of state-listed and/or state-ranked species and natural communities of conservation concern. This species listed four state-endangered species including lake sturgeon (*Acipenser fulvescens*), American bittern (*Botaurus lentiginosus*), king rail (*Rallus elegans*), and Ebonyshell (*Reginaia ebenus*). The report also provided a list of state-ranked species including large seeded mercury (*Acalypha deamii*), western sand darter (*Ammocrypta clara*), wild sarsaparilla (*Aralia nudicaulis*), rock pocketbook (*Arcidens confragosus*), great egret (*Ardea alba*), wartyback (*Cyclonaias nodulata*), little blue heron (*Egretta caerulea*), common gallinule (*Gallinula galeata*), Mississippi silvery minnow (*Hybognathus nuchalis*), least bittern (*Ixobrychus exilisI*), black sandshell (*Ligumia recta*), meropid scorpionfly (*Merope tuber*), ghost shiner (*Notropis buchanani*), hickorynut (*Obovaria olivaria*), river darter (*Percina shumardi*), elusive clubtail (*Stylurus notatus*).

A virtual meeting was held on 04 May 2022 between USACE biologists and MDC biologists to discuss the proposed forestry actions and potential impact. Following the meeting, MDC biologists provided further comments via email to USACE. MDC suggested excavating down to a level where approximately 5% of the area of the ponded water would remain undrained and USACE agreed to implement this conservation measure.

Alternative 1 – No Action (Future without Project Condition)
Under this alternative, passive management would continue. Some invasive species removal would likely occur, but there would be no soil disturbance or tree removal. Invasive species control would benefit all state-listed and state-ranked species. The aquatic species would be unaffected by the No Action. The plant species, the Sarsaparilla and large seeded mercury would be adversely impacted by the No Action. These species would have less available habitat if the flow improvements were not carried out. In contrast, the secretive marsh birds and wading birds would be benefitted by the No Action because more permanently to semi-permanently flooded wetlands would be available to them without the flow improvements.

Alternative 2 – Forest Management (Forest Stand Improvement)
The reduction in the more permanently flooded areas on the island would adversely impact secretive marsh birds such as the egrets, herons, rails and bitterns listed above. However, approximately 5% of the impacted wetlands would be unaffected by the excavations, providing some wetland habitat in addition to the permanently flooded wetland areas that would be unaffected by the excavations. All of the low-elevation areas on the island would be seasonally flooded after high-water events, providing some additional temporary wetland habitat for secretive marsh birds. Impacts to the fully aquatic species like the fish and mussels would be minimal given that the work would not take place in the Mississippi River and any sedimentation pollution concerns would be mitigated by the use of sediment-control BMPs. BMPs would also be used to prevent herbicide contamination of nearby aquatic habitat. The state-ranked plant species like the sarsaparilla and large seeded mercury would likely be permanently benefitted by the improvements to the health of the floodplain forest on the island. Sarsaparilla is a species that adapts to a variety of wooded habitats like those found on Gilbert Island. Large seeded mercury is a plant that occurs in bottomland hardwood habitat in forest openings and forest edges. The proposed work would create more of these microhabitats. The elusive clubtail dragonfly would be permanently benefitted by the proposed FSI actions. It forages along large rivers like the Mississippi and “roosts” in large trees, which would become more numerous following FSI treatments and the flow improvements.

3.3. Biological Assessment

Federally Threatened and Endangered Species
In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, an updated list of species and critical habitats potentially occurring in the vicinity of the proposed work areas was acquired from the USFWS Information for Planning and Conservation (IPaC) website at (https://ecos.fws.gov/ipac/) on 07 October 2022 (Project Code: 2022-0017217).; Table 3). There are no designated Critical Habitat locations in the project area. Habitat

requirements and impacts of the proposed action are discussed for each listed species. The species included in the IPaC are: Gray Bat, Indiana Bat, Northern Long-eared Bat, Tricolored Bat, Spectaclecase, and Monarch Butterfly (Table 3).

Table 3. List of federally threatened and endangered species and habitat potentially occurring in the vicinity of the proposed project, acquired from the USFWS Information for Planning and Conservation (IPaC) website.

Common Name (Scientific Name)	Classification	Habitat
Gray Bat (*Myotis grisescens*)	Endangered	Roosts in caves and forages along streams and open water bodies.
Indiana Bat (*Myotis sodalis)*	Endangered	Uses caves and mines for winter hibernacula; uses trees for summer roosting. Forages along small stream corridors with well-developed riparian woods and in upland forests.
Northern Long-eared Bat (*Myotis septentrionalis*)	Proposed Endangered	Similar to Indiana Bat, will use caves and mines for winter hibernacula; uses trees for summer roosting. Forages along large water bodies adjacent to forests.
Tricolored bat (*Perimyotis subflavus*)	Proposed Endangered	In summer, roosts in structures, trees, cliffs, and caves. In winter, hibernates in caves.
Spectaclecase (*Cumberlandia monodonta*)	Endangered	Large rivers where they live in areas sheltered from the main force of the river current
Monarch Butterfly (*Danaus plexippus*)	Candidate	Uses milkweed plants as a reproductive host. Found in open grassy areas with milkweed.

3.3.1. Gray Bat

The endangered Gray Bat occurs in several Missouri counties where it inhabits caves during both summer and winter. With rare exceptions, gray bats sleep in caves year-round, a slight divergence from the behavior of the Indiana Bat and Northern Long-eared Bat. During the winter, they hibernate in deep, vertical caves (U.S. Fish & Wildlife Service, 2019). In the summer, they roost in caves which are scattered along rivers. Foraging occurs in a variety of common habitats that largely overlap with both the Indiana and Northern Long-eared Bat, including in and around the tree canopy of floodplain, riparian, and upland forests.

Alternative 1 – No Action (Future without Project Condition)

As the forest understory becomes even more overgrown with invasive shrubs and trees, regeneration of desirable trees would be greatly inhibited. Over time, existing mature trees would eventually die and fall, and without regeneration from the understory, the overall number of suitable roosting trees would decrease. However, Gray Bats roost mostly in caves

and mines, which would be unaffected by the continued passive management of the island. The FSI work would improve foraging habitat for the Gray Bat, though. If no FSI improvements are made, foraging habitat quality would be adversely affected. The No Action alternative could result in minor adverse impacts to Gray Bats.

Alternative 2 – Forest Management (Forest Stand Improvement)
Direct impacts would result from disturbance to roosting bats if an occupied tree is felled. Given the nature of Gray Bats to roost in caves and mines, tree clearing in winter is unlikely to adversely affect Gray Bats. Indirect impacts can result from construction noise disturbance from chainsaws, vehicles, and other equipment. Tree removal activities can also cause indirect impacts by manipulating travel corridors and migration habitat used by Gray Bats when they are moving to/from foraging and drinking areas from their roosting caves. All tree cutting activities would take place between 1 November and 31 March of any given year, during the non-active roost season for woodland bat species. The Forest Management alternative would cause temporary minor adverse impacts and also long-term beneficial impacts.

3.3.2. Indiana Bat

During late fall and winter, Indiana Bats hibernate in caves and mines. During the spring and summer, Indiana Bats roost in trees. Suitable roosting trees can be alive or dead, but all would have loose, exfoliating bark, holes, and other damage that can be used by a roosting bat. These damages allow bats to crawl inside and be sheltered from predators and weather. Indiana Bat roost trees are typically at least 5 inches diameter at breast height (dbh) with suitable roosting characteristics (U.S. Fish & Wildlife Service, 2022). Preferred roost sites are in forest openings, at the forest edge, or where the overstory canopy allows some sunlight exposure to the roost tree, which is usually within 1 km (0.6 mi.) of water. Indiana Bats forage for flying insects (particularly moths) in and around the tree canopy of floodplain, riparian, and upland forests. The most significant threat facing Indiana Bat populations today is white-nose syndrome (WNS), a fungal disease. Other major range wide threats to the Indiana Bat include habitat loss/degradation, forest fragmentation, winter disturbance, and environmental contaminants. Suitable Indiana Bat summer habitat likely occurs in the forested areas adjacent to and within the proposed project sites.

Alternative 1 – No Action (Future without Project Condition)
As the forest understory becomes even more overgrown with invasive shrubs and trees, regeneration of desirable trees would be greatly inhibited. Over time, existing mature trees would eventually die and fall, and without regeneration from the understory, the overall number of suitable roosting trees would decrease. The reduced quality and condition of forest stands as a result of the No Action alternative could result in long-term adverse impacts to Indiana Bats.

Alternative 2 – Forest Management (Forest Stand Improvement)
Direct impacts would result from disturbance to roosting bats if an occupied tree is felled. Indirect impacts can result from construction noise disturbance from chainsaws, vehicles, and other equipment. Tree removal activities can also cause indirect impacts by manipulating travel

corridors and migration habitat used by Indiana bats when moving to/from foraging and drinking areas from roosting areas in the summer or when moving to/from winter caves in the fall and spring. Other indirect impacts can result from the removal of now healthy trees that, over the course of time, would become snags with good roosting characteristics. All tree cutting activities would take place between 1 November and 31 March of any given year, during the non-active roost season for woodland bat species.

Further impacts resulting from the tree removal would include some interrelated activities such as the transport of trees using haul roads and establishment of landings. Tree removal required for roads and landings would also follow the winter tree clearing dates (1 Nov to 31 Mar). We do not anticipate permanent adverse impacts to the Indiana Bat and NLEB from interrelated activities.

With the implementation of this project, optimal foraging and roosting habitat would be created where FSI is proposed. Timber removal that retains a somewhat lower basal area of standing trees, such as that proposed in this project, would benefit the Indiana bat because it would allow individuals to move more easily in an "uncluttered" forest and still allow for some protection during flight. Indiana bat habitat enhancement would be favored where possible through forest thinning and construction of linear corridors to create open canopy structure for travel and foraging areas for a diversity of bat species. Thinning activities would increase travel and allow sunlight to reach potential roost trees. All dead trees, split trees, trees that have cavities, and trees with exfoliating bark would be favored for retention. Snags would be created as dictated by habitat type conditions to protect/provide a specific habitat for Indiana bats and NLEB. Loss of familiar roost trees and associated foraging habitat, while negative in the short term, are not expected to have long term consequences for a colony because of the remaining forested habitat nearby and the propensity of the species to utilize alternative roost sites (Carter & Feldhammer, 2005). Additionally, FSI actions implemented in unmanaged forest habitat would serve to benefit bats in the long-term by improving the quality of forested areas they use for foraging and roosting.

3.3.3. Northern Long-eared Bat

The northern long-eared bat (NLEB) was listed as a federally threatened species throughout its range until 23 March 2022, when the USFWS published a proposal to reclassify the northern long-eared bat as endangered under the Endangered Species Act. Following a court order by the U.S. District Court for the District of Columbia, the Service must complete a new final listing determination for the northern long-eared bat by November 2022 (Case 1:15-cv-00477, March 1, 2021). The northern long-eared bat is sparsely found across much of the eastern and north central United States and spend winter hibernating in caves and mines (U.S. Fish and Wildlife Service, 2020) . They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Within hibernacula, they are found in small crevices or cracks. During summer, NLEB habitat includes a variety of forested habitats and adjacent non-forested habitats such as emergent wetland, edges of agricultural fields, old fields, pastures, fencerows, strips of riparian forest, and linear wooded corridors (U.S. Fish & Wildlife Service, 2022). Trees that would serve as potential roosts would be at least 3

inches dbh and have exfoliating bark, cracks, crevices and/or cavities. Suitable forested areas would be either dense or loose aggregations of trees, relatively unfragmented compared to areas that are highly-fragmented or that have been clear-cut. The NLEB is more likely to use a single tree with roosting characteristics if it is within 1000 feet of other forest. Human-made structures, like houses, barns, and bridges have also been observed to host roosting NLEBs. Forest fragmentation, logging and forest conversion are major threats to the species. One of the primary threats to the northern long-eared bat is the fungal disease, white-nose syndrome, which has killed an estimated 5.5 million cave-hibernating bats in the Northeast, Southeast, Midwest and Canada. Suitable northern long-eared bat summer habitat likely occurs in the forested areas adjacent to and within the proposed project sites.

There is no designated critical habitat for any bat species in the project area, although suitable summer roosting habitat does exist. There are no documented hibernacula within the treatment areas, but bats would be using forested areas during foraging and to find summer roost trees. There are likely many bat species that occur in Pike and Ralls counties, including the Indiana and NLEB.

Alternative 1 – No Action (Future without Project Condition)
As the forest understory becomes more overgrown with invasive shrubs and trees, regeneration of desirable trees would be greatly inhibited. Over time, existing mature trees will eventually die and fall, and without regeneration from the understory, the overall number of suitable roosting trees would decrease. The reduced quality and condition of forest stands in the No Action alternative could result in long-term adverse impacts to Indiana and Northern Long-eared Bats.

Alternative 2 – Forest Management (Forest Stand Improvement)
As previously described, the ecology and behavior of NLEBs are similar to that of Indiana bats, thus, potential effects of the Proposed Action on these bats species are expected to be closely related. Forest management actions which specifically target Indiana bat habitat enhancement, would likely benefit the northern long-eared bat as well. The proposed action could have site-specific impacts on northern long-eared bats and northern long-eared bat habitat but are not anticipated to individually or cumulatively to have an adverse impact on the population as a whole. Indirectly, NLEBs may be affected with the removal of now healthy but later potential roost trees that over the course of time would become snags. With present snag densities and the overall age of the forest along with natural mortality in present timber, it is believed that sufficient snags would likely remain present as suitable roosts and colony trees.

3.3.4. Tricolored Bat

Tricolor Bats were formerly called Eastern Pipistrelle. Tricolored Bats are usually found roosting singly, only sometimes in pair or clusters of up to a dozen individuals (Missouri Department of Conservation, 2022). In winter, Tricolored bats hibernate in caves. They prefer caves that are humid and warm. In summer, they leave their hibernation caves and roost in trees, in crevices in cliffsides, and human-made structures. They also sometimes roost in caves during summer. They forage for insects high in the air along forest edge and the boundary of streams or open

bodies of water. Tricolor Bats mate during spring, fall, and sometimes in the winter. Maternity colonies begin forming in mid-April and females bear 1 to 2 pups by late May to mid-July. Suitable Tricolored Bat summer habitat likely occurs in the forested areas adjacent to and within the proposed project sites.

Alternative 1 – No Action (Future without Project Condition)
As the forest understory becomes more overgrown with invasive shrubs and trees, regeneration of desirable trees would be greatly inhibited. Over time, existing mature trees will eventually die and fall, and without regeneration from the understory, the overall number of suitable roosting trees would decrease. The reduced quality and condition of forest stands in the No Action alternative could result in long-term adverse impacts to Forest Bat species like the Tricolored Bat.

Alternative 2 – Forest Management (Forest Stand Improvement)
The potential adverse effects of the Proposed Action on Tricolored Bats are expected to be similar to the other bat species. Direct impacts from tree removal would be avoided by implementing the winter tree clearing restriction, which requires all tree clearing to be conducted between 1 November to 31 March. No structures that could provide roosts would be impacted. The noise and vibration from chainsaw use, vehicle traffic, and other equipment use would cause a minor temporary indirect impact to roosting bats. Interrelated activities, like the construction of temporary access roads and the use of existing access roads and staging areas would cause minor temporary adverse impacts. The temporary direct and indirect adverse impacts would be outweighed by the substantial direct and indirect benefits of the FSI treatments over time.

3.3.5. Forest Bat Cumulative Effects

The approximate treatment area is 172.6 acres. The Cumulative Effects boundary is a five-mile buffer around the stands (Figure 12). The National Land Cover Database (NLCD) land cover/land use data was used to determine how much forested area lies within the buffer (Homer, et al., 2015). Within this buffer area is a total of 57,149 acres of deciduous forest, 3 acres of evergreen forest, and 3,759 acres of mixed forest. Taken cumulatively, this amounts to 60,911 acres of forested area within the 5-mile buffer zone. The 172.6 acres of forest stand that are prescribed a FSI treatment comprise 0.2% of the total forested area within the 5-mile buffer zone. If these acres are distributed evenly over the 10-year span (17.2 acres per year), each year would impact essentially 0% of the total forested area within the 5-mile buffer. Additionally, the proposed actions within the stands mentioned above would improve the long-term availability of potential roost trees for interior forest bat species such as Indiana and NLE bats through forest regeneration. Short term foraging habitat would be enhanced by increasing the amount of available sunlight to the forest floor, encouraging herbaceous vegetation habitat for insects, and better access by foraging bats. Snag retention would stabilize potential roosting habitat. Tree cutting actions would take place during winter (01 Nov to 31 March).

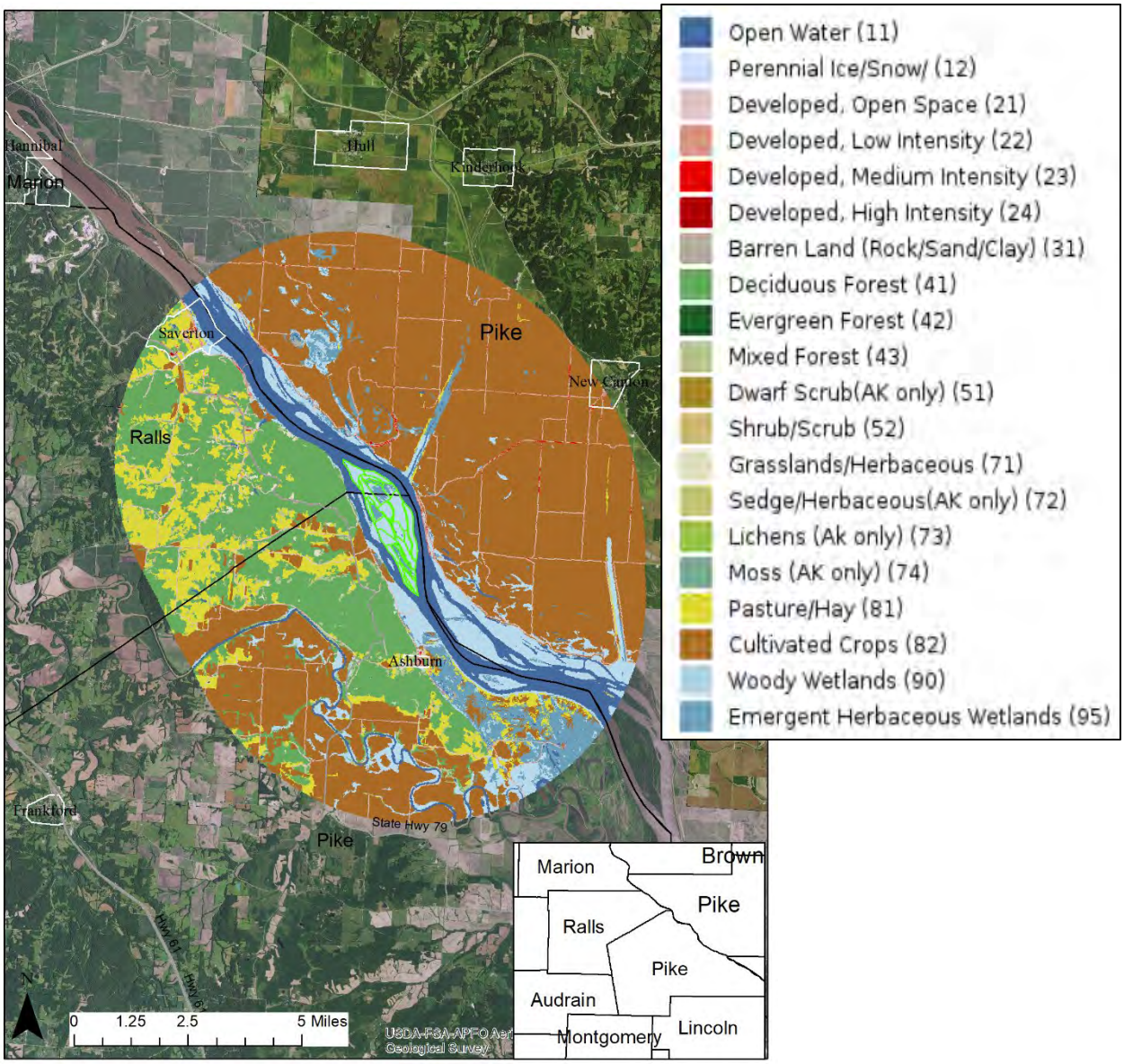

Figure 12. A figure showing the land use land cover in a five-mile buffer around Gilbert Island.

3.3.6. Spectaclecase

The Spectaclecase is a large mussel that can grow up to 9 inches in length. The shape of the shell is elongated, sometimes curved, and somewhat inflated, hence its name (U.S. Fish & Wildlife Service, 2019). Spectaclecase are found in large rivers in segments that are sheltered from the main current where they cluster in firm mud beneath rock slabs, boulders, and in-between tree roots. There are a variety of conservation concerns for the species, including small population size, sedimentation, pollution, channelization of rivers, and the invasive Zebra Mussel. Conservation efforts for this species include preventing the spread of invasive species and conducting monitoring and research on existing populations. There are six mussel beds in the channel separating Gilbert Island from the Missouri bank of the Mississippi River. These

mussel beds may include Spectaclecase, but there is no data on the species composition of the beds.

Alternative 1 – No Action (Future without Project Condition)
If passive management continues, there would be no actions taken that could benefit or harm the Spectaclecase Mussel. Conservation concerns identified for this species would not be increased by the passive management of Gilbert Island. Spectaclecase Mussel would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)
Direct impacts may result if mussel beds are buried by the placement of fills or disturbed by the movement of barges or other vessels. The two ferry landing locations do not overlap with any of the six known mussel beds. Indirect impacts could result from excessive sedimentation pollution entering the side channel where the mussel beds are located if a flood event occurs prior to restoration of bare, disturbed soil with an native seed mix. Material excavated for the flowage improvements would be disposed of on the island adjacent to the site of excavation. Best management practices would be implemented to arrest soil erosion and prevent excessive sedimentation. If present, spectaclecase mussel would be temporarily minorly impacted by the Forest Management alternative.

3.3.7. Monarch Butterfly

The Monarch Butterfly is a large orange butterfly that is a candidate for listing on the Endangered Species List. Monarch populations of eastern North America have declined 90%. Much of the monarch butterfly's life is spent migrating between Canada, Mexico, and the U.S. Monarchs do not overwinter in Missouri (U.S. Fish & Wildlife Service, 2021). The Monarch occurs in a variety of habitats where it searches for its host plant, milkweed. Of the over 100 species of milkweed that exist in North America, only about one fourth of them are known to be important host plants for monarch butterflies. The main monarch host plant is Common Milkweed (*Asclepias syriaca*) (Kaul & Wilsey, 2019). Other common hosts include Swamp Milkweed (*Asclepias incarnata*), Butterflyweed (*Asclepias tuberosa*), Whorled Milkweed (*Asclepias verticillata*), and Poke Milkweed (*Asclepias exaltata*) (U.S. Fish & Wildlife Service, 2021). Three factors appear most important to explain the decline of Monarchs: loss of milkweed habitat, logging at overwintering sites, and climate change and extreme weather. In addition, natural enemies such as diseases, predators, and parasites, as well as chemicals used in agricultural areas may also contribute to the decline. The project area is likely to have some milkweed in the wetland areas and in more wet areas of the open fields.

Alternative 1 – No Action (Future without Project Condition)
The amount of milkweed host plants on Gilbert Island would be the main determining factor in how well terrestrial habitats on Gilbert Island can provide for Monarch life-history needs. Without the invasive species management proposed as part of the FSI actions, the growth of milkweed in the bottomland forest stands may be inhibited. Therefore, the No Action is likely to result in minor adverse impacts to Monarch Butterfly.

Alternative 2 – Forest Management (Forest Stand Improvement)
As previously mentioned, loss of milkweed is a major threat to Monarch Butterflies at all life-stages (larvae and adult). Direct impacts to larvae and adults would involve the removal of host milkweed plants. Some milkweed may be found along the access roads and in the more open areas where invasive species management is proposed. Some milkweed may be accidentally destroyed as a consequence of the invasive species removal. However, the seedbank would not be impacted, and permanent losses of milkweed are unlikely. Indirect impacts to the butterfly could result from construction noise and other disturbances. Any indirect disturbances would be minimized or avoided as most of the work will be conducted in the cold winter months when Monarchs are not present.

3.3.8. Conservation Measures

Overall Conservation Measures; Best Management Practices
Forest stand improvement is considered by the U.S. Fish and Wildlife Service to be an acceptable practice for improving habitat for wildlife. The following conservation measures for forest bats and other wildlife would be used:

- All tree removal would occur between 1 November and 31 March.
- The FSI activities would be spread out over a period of 10 years, involving only a maximum of 0.2% of the total forested acres within 5 miles of the island.
- Trees that exhibit roost-characteristics would be favored for retention unless they pose a safety threat.
- All trees that are girdled in the FSI process will be left standing for wildlife habitat and allowed to fall down naturally unless they pose a hazard to public safety or property.

Best Management Practices (BMPs)
Soil disturbance from vehicle use and equipment staging is another concern. The following BMPs would be used to mitigate sediment erosion and runoff:

- Traffic on haul roads would be kept to a minimum (or avoided) during wet and muddy conditions.
- Staging areas have been selected so as to avoid unnecessary soil disturbance and reduce travel distance from work areas.
- Sediment control structures would be installed where appropriate to slow the flow of runoff and to arrest sediment until vegetation cover is established.
- Areas of bare soil would be restored by applying seed and mulch.
    - Seed mixes would include fast-growing vegetation to arrest soil movement and perennial species for longer soil protection.
    - Seed mix used would be restricted to those that include native vegetation appropriate to the floodplain.

Herbicides would be used on Gilbert Island for invasive species control. Any operator that uses herbicide as part of these FSI actions would be licensed by the State of Missouri and abide by the following BMPs:

- Maintain a spill containment and cleanup kit appropriate for the materials used and report all spills.
- Follow all EPA product label instructions on chemical containers.
- Mix and load chemicals in a staging area that is outside streamside management zones or other sensitive areas.
- Apply chemicals only under favorable weather conditions to prevent drift.
- Calibrate spray equipment to apply chemicals uniformly and in the correct quantities.
- Dispose of chemical containers according to label instructions.
- Prevent chemical leaks from equipment. Do preventative maintenance and repair on all equipment for leaking hoses, connections, and nozzles.

Forest Bat Conservation Measures

Conservation measures incorporated into the Proposed Action design would be implemented to protect, avoid, and minimize impacts to Gray Bat, Indiana Bat, Northern Long-eared Bat, Tricolored Bat, and their habitat.

- Snag retention favored where possible.
- Creation of new snags, where appropriate.
- Winter tree clearing restriction (Tree clearing restricted to the period beginning on 1 Nov and ending on 31 March of any given year).
- Tree removal designed to create open foraging corridors in forests.
- Uncluttered understory with plenty of cover and access to foraging corridors.
- Cave habitat and human structures used for roosting would not be affected by the proposed work

Freshwater Mussel Conservation Measures

- Invasive species control measures:
    - Remove any mud, soil, trash, plants, or animals from equipment before leaving any water body or work area.
    - Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
    - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.
- Sedimentation control measures
    - Use BMPs to arrest soil erosion
    - Restore areas of bare, disturbed soil with an native seed mix
- Herbicide control measures
    - Follow manufacturer's guidelines on proper application and disposal of chemical.
    - Minimize use of herbicide-do not over apply chemical.
    - Do not broadcast spray in windy conditions.

- Check the forecast and avoid spraying just before major precipitation event.

Monarch Butterfly Conservation Measures –

- Minimal use of herbicides and pesticides would occur.
- Removing woody plants and other invasive plants in grassland areas to promote the growth of grassland plants, like milkweed species.
- Using conservation mowing to enhance floral resources and habitat.

3.3.9. Effects Determinations

Forest Bat Effects Determinations

The St. Louis District has made a **May Affect, Not Likely to Adversely Affect (NLAA)** determination for the Gray Bat, NLEB, Indiana Bat, and Tricolored Bat. This determination is based on the following considerations:

- Tree removal would only occur between 1 November to 31 March in any given year.
- No cave habitat or other cave-like roosting habitat would be impacted.
- Impacts to known hibernacula or maternity trees would be avoided.
- There is no critical habitat for any listed bat species in the affected area.
- The impact of the tree removal would be spread out in time and area
  - There are 60,911 acres of forest within a 5-mile buffer of the project area. The 172 treatment acres comprise only 0.2% of the total area of forest in this 5-mile buffer.
  - Approximately 17 acres would be worked on in a given year. This value is simply $1/10^{th}$ of the total acres (0% of total acres).
- No forest stand would be clear cut, thinning would allow bats to fly in an uncluttered understory, canopy gaps would be limited to 0.25 acres in area and would be spread out throughout the area.
- Finally, the goal of the FSI actions is to improve the condition of the forest in order to provide better habitat for plants and wildlife that use it, including forest bats. Ultimately, the FSI actions should benefit all bat species using the forested habitats on Gilbert Island.

Spectaclecase Effects Determinations

Based upon the type and duration of impacts discussed above, the St. Louis District has made a **NLAA** determination for the Spectaclecase.

- This species is not documented to occur in the vicinity of the project and there are no recent records of these species occurring in this portion of the Mississippi River.
- The fill required for the landings would be minimal.
- The material excavated for the flowage improvements would be disposed of on the island adjacent to the site of excavations.
- These soil disturbances would be minimized with the use of appropriate soil-arresting BMPs.
- The six known mussel beds in the side channel would be completely avoided.

Monarch Butterfly Effects Determination

Based upon the type and duration of impacts discussed above, the St. Louis District has made a **"not likely to jeopardize the continued existence"** determination for the Monarch Butterfly.

- No known stands of milkweed would be disturbed for the project; however a few plants may be inadvertently impacted by invasive species control.
- The targeted application of herbicide would greatly reduce the risk of harming milkweed should it be growing near the treated invasive species.
- The forested areas in Pike and Ralls counties are not overwintering sites.
- The FSI activities would not contribute significantly to climate change impacts that could disrupt migrating Monarchs.

The USFWS provided concurrence with these effects determinations in a letter dated 06 October 2022. The IPaC and the USFWS response can be found in Appendix 1.

3.4. Social and Economic Resources

3.4.1. Aesthetics and Recreation

Aesthetics on Gilbert Island are characterized by the undeveloped nature of the habitats on the island. There are no boat landings, roads, or paths on the island. The undeveloped nature of the area provides an aesthetic appeal. While the island itself is undeveloped, the backwater channel between the island and the bank of the river on the Missouri side are actively hunted during waterfowl season. This is the primary, and perhaps only, recreational opportunity at Gilbert Island.

Alternative 1 – No Action (Future without Project Condition)

The aesthetic of the island would remain unchanged if passive management were to continue. The island would remain undeveloped and retain its natural characteristics. Likewise, any recreational opportunities (e.g. waterfowl hunting) would continue to be available. Aesthetics and recreation would not be affected by the No Action alternative.

Alternative 2 – Forest Management (Forest Stand Improvement)

The island can only be accessed by boat, so recreational hunters would be the primary members of the public that would experience the aesthetics of the island but it is open to other recreational activities like hiking, birding, fishing, and photography. The improved forest condition resulting from the FSI alternative could make the forest stands more aesthetic to some, who would value a natural setting more highly. A healthy forest can present a more diverse and aesthetically pleasing sight. Recreational opportunities could be benefitted with the FSI actions if this equates to more fish and game produced on and near the island. Hunting, boating, angling, hiking, birding, and outdoor photography opportunities would improve after FSI is implemented. Better recreational opportunities can benefit the local economy on both sides of the river. In this way, Recreation and Aesthetics would be minorly benefitted by the FSI alternative.

3.4.2. Cultural Resources

There are known cultural resources located on Gilbert Island, but their significance as historic sites is unknown. A homestead foundation, agricultural equipment, fence posts, and a windmill can all be found in Stand 9 of Gilbert Island. This homestead area can also be seen on the aerial photography from 1939, the approximate time of USACE ownership. Going back as far as 1890, there appears to be a structure in what is now Stand 13 which is noted on the Mississippi River Commission maps of the island. The eligibility of these structures was not determined because they would be avoided by the work and would not be impacted. All management activities will be buffered 100ft around these known areas to avoid any disturbance or accidental damage to cultural resources.

Alternative 1 – No Action (Future without Project Condition)
The absence of FSI actions would not be expected to result in adverse impacts to Cultural Resources at Gilbert Island. No actions would be taken that would disturb existing known or unknown archeological sites or historic properties.

Alternative 2 – Forest Management (Forest Stand Improvement)
The FSI activities that could adversely impact cultural resources and Tribal sacred sites would include the soil disturbance from access roads and the excavation of the drainage plugs. Bulldozing trees to remove them can disturb the soil and adversely affect these resources as well. However, because the trees will be left as stumps (or snags), the tree removal would not adversely impact these resources. On 27 June and 30 June 2022, the USACE conducted an archeological Phase 1 survey of the proposed excavation areas. No archeological sites were recorded within the project's Area of Potential Effect (APE). There were two structures found on the island, but they would be avoided during the work and so their eligibility as historic properties was not determined because they would not be impacted by the proposed work. Based on these findings, it is the opinion of the USACE St. Louis District that the proposed undertaking will have no significant effects on historic properties. A coordination letter was sent to the MO SHPO on 21 July 2022. The SHPO provided concurrence in a letter dated 24 August 2022. Cultural coordination can be found in Appendix 3.

3.4.3. Tribal Resources

Due to the potential for ground disturbance as a result of the proposed work, tribal consultation separate from the Public Review was pursued. A coordination letter was submitted to 23 Tribes on 25 July 2022. In the event that earthmoving activities associated with the proposed work impacted archaeological or human remains, all construction activities and earthmoving actions in the immediate vicinity of the remains would be held in abeyance and tribal nations will be consulted. Tribal coordination can be found in Appendix 4.

Alternative 1 – No Action (Future without Project Condition)
The absence of FSI actions would not be expected to result in adverse impacts to sacred sites at Gilbert Island. No actions would be taken that would disturb existing known or unknown sacred sites.

Alternative 2 – Forest Management (Forest Stand Improvement)
Similar to the Cultural Resources section, the main potential adverse impact would come from the construction of temporary access roads and staging areas. A coordination letter was sent to the 23 Tribes on 25 July 2022. The following Tribes responded to the coordination letter:

1. Nottawaseppi Huron Band of Potawatomi Indians on 26 July 2022
2. Iowa Tribe of Kansas and Nebraska on 26 July 2022
3. Forest County Potawatomi Community on 29 July 2022
4. Eastern Shawnee on 16 August 2022
5. Shawnee Tribe on 24 August 2022

All but the Forest County Potawatomi Community stated that they had no objections to the project but requested to be notified if archaeological or human remains are identified during the construction. The Forest County Potawatomi Community requested to have a consultation meeting pertaining to the amount of earth moving activity. On 1 September 2022, the St. Louis District and Forest County Potawatomi Community had a meeting via telephone. The Forest County Potawatomi Community were concerned with the amount of ground disturbance caused by tree removal skid trails and heavy equipment; however, after learning that the tree removal will take place in the winter when the ground is frozen, the Forest County Potawatomi Community concurred with the St. Louis District's determination of no historic properties affected.

3.4.4. Environmental Justice

Environmental justice refers to fair treatment of all races, cultures, and income levels with respect to development, implementation and enforcement of environmental laws, policies, and actions. Environmental Justice Analysis applies to both minority and low-income populations. For the analysis of Environmental Justice, minority populations are defined as any person who is Black, Hispanic, Asian American, American Indian, or Alaskan Native. Environmental justice analysis was developed following the requirements of: Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations," 1994), and "Department of Defense's Strategy on Environmental Justice" (March 24, 1995). This mandates that federal agencies identify and address, as appropriate, disproportionately high, and adverse human health, or environmental effects of proposed projects on minority and low-income populations. Environmental Justice builds on Title VI of the Civil Rights Act of 1964. Environmental Justice has three guiding principles:

1. Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental impacts, including social and economic effects on minority and low-income populations
2. Ensure full and fair participation by all potentially affected communities in the decision-making process
3. Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations

Demographic information was obtained for Gilbert Island. Unsurprisingly, there are no residents on Gilbert Island and, therefore, there is no demographic information to consider. The

island is only accessible by boat, as previously mentioned. A wider area was therefore analyzed for demographic data. A 5-mile buffer was applied to a point placed in the center of the island at 39.590168,-91.184703. The report provided data for Missouri, EPA Region 7. This 5-mile buffer had a population of 596 individuals. The vicinity of Gilbert Island has a 4% population of persons of color, compared to the 21% Missouri state average. The percentage of low-income residents in the vicinity of Gilbert Island is 30%, comparable to the state average of 32%. The unemployment rate is 4%, similar to the state average of 5%. The percentage of residents with less than a high school education is 5%, less than the state average of 10%. Environmental indicators like particulate matter, ozone, and lead paint are similar to the state average (Figure 13).

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 (µg/m³)	8.74	8.55	65	8.26	75	8.74	53
Ozone (ppb)	42.9	45.4	11	44.1	38	42.6	57
2017 Diesel Particulate Matter* (µg/m³)	0.121	0.265	22	0.221	<50th	0.295	<50th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	20	30	11	26	<50th	29	<50th
2017 Air Toxics Respiratory HI*	0.3	0.4	19	0.33	50-60th	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	15	400	13	410	14	710	10
Lead Paint (% Pre-1960 Housing)	0.16	0.29	46	0.33	39	0.28	48
Superfund Proximity (site count/km distance)	0.026	0.099	25	0.1	31	0.13	23
RMP Facility Proximity (facility count/km distance)	0.25	0.65	50	0.95	34	0.75	44
Hazardous Waste Proximity (facility count/km distance)	0.13	1.3	29	1	31	2.2	20
Underground Storage Tanks (count/km²)	0.049	1.9	27	2.5	25	3.9	20
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0014	5.9	40	2.9	50	12	52
Socioeconomic Indicators							
Demographic Index	17%	26%	34	25%	38	36%	23
People of Color	4%	21%	18	20%	18	40%	8
Low Income	30%	32%	49	30%	54	31%	53
Unemployment Rate	4%	5%	61	4%	66	5%	52
Linguistically Isolated	0%	1%	71	2%	65	5%	45
Less Than High School Education	5%	10%	30	9%	36	12%	29
Under Age 5	3%	6%	18	6%	16	6%	20
Over Age 64	23%	16%	80	16%	81	16%	82

Figure 13. Demographic information for a 5-mile buffer around Gilbert Island.

Alternative 1 – No Action (Future without Project Condition)
Forest stand improvements, or lack thereof, in the case of the No Action, are unrelated to Environmental Justice concerns in the vicinity of Gilbert Island. The No Action Alternative would not result in disproportionately high adverse impacts to minority or low-income populations.

Alternative 2 – Forest Management (Forest Stand Improvement)
The FSI alternative would not create adverse impacts to minorities, low-income, or cause other Environmental Justice concerns. The improved forest condition after FSI actions would result in many ecological benefits but would be unrelated to the Environmental Justice concerns in the vicinity of Gilbert Island. The Forest Management Alternative would not result in disproportionately high adverse impacts to minority or low-income populations.

4.0. CUMULATIVE IMPACTS

Cumulative impacts are defined as those impacts that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes the actions. Cumulative impacts are not caused by a single project but include the effects of a particular project in conjunction with other projects (past, present, and future) on the resource. Cumulative effects are studied to enable the public, decision-makers, and project proponents to consider the "big picture" effects of a given project on the community and the environment. In a broad sense, all impacts on affected resources are probably cumulative; however, the role of the analyst is to narrow the focus of the cumulative impacts analysis to important issues of national, regional, and local significance (CEQ, 1997).

4.1. Step 1: Identify Potentially Affected Resources

In this step, each resource affected by the action alternatives are identified. Resources were not assessed for cumulative impacts if the analysis in the Affected Environment and Environmental Impacts Chapter determined there would be no impact to that resource from the action alternatives. Resources that would be affected by the FSI actions at Gilbert Island could include biological and social resources. Potentially affected biological resources could include the aquatic and terrestrial habitat, bald eagles, migratory birds, invasive species, and the federally-listed and state-listed threatened & endangered species listed in the IPaC report. Potentially affected social/economic resources could include aesthetics, recreation, and cultural and tribal resources.

4.2. Step 2: Establish Boundaries (Geographic and Temporal)

In identifying past, present, and reasonably foreseeable actions to consider in the cumulative impact analysis, affected resource-specific spatial and temporal boundaries were identified. The spatial boundary is where impacts to the affected resource could occur from the action alternatives and therefore where past, present, and reasonably foreseeable future actions could contribute to cumulative impacts to the affected resource. This boundary is defined by the affected resource and may be a different size than the project area. The spatial boundary includes Gilbert Island and the backwater channel between the island and the Missouri bank.

The temporal boundary describes how far into the past and forward into the future actions should be considered in the impact analysis. The temporal boundary is guided by CEQ guidance on considering past action and a rule of reason for identifying future actions. For each resource topic, the geographic and temporal boundaries were identified. For all resource topics, the consideration of past actions is reflected in the existing condition. A default future temporal boundary of 50 years from the baseline condition was used as an initial timeframe; however, the impacts are based on their likelihood of occurring and whether they can be reasonably predicted.

4.3. Step 3: Identify the Cumulative Action Scenario

In this step, past, present, and reasonably foreseeable future actions to be included in the impact analysis for each specific affected resource were identified. These actions fall within the spatial and temporal boundaries established in Step 2.

The FSI actions are expected to be completed over the next 5-10 years but would require regular maintenance throughout the life of the Gilbert Island project. The cumulative impacts resulting from these FSI actions would be expected to be included in reasonably foreseeable future actions. Management of the natural resources on public lands, like those at Gilbert Island, are expected continue over the next fifty years. Invasive species control is also expected to continue over the coming decades, especially on public lands, where it is required by an Executive Order. It is also likely that private landowners nearby Gilbert Island would also contribute to invasive species control in order to prevent damage to crops and orchards. The annual growth and spread of invasive species would be greatly limited if invasive species control is carried out in nearby areas and if the FSI actions take place. In this way, the proposed actions would have long-term beneficial impacts to efforts to control the spread of invasive species.

The alterations to the forest stands could contribute to cumulative impacts by making substantial changes to the species diversity and composition in those areas. Given that the FSI actions are designed to improve forest habitat, it is likely that they would cause a long-term beneficial cumulative impact to terrestrial habitat and the migratory birds, eagles, and listed species that rely on forest habitat. Even the drainage improvements would provide long-term beneficial impacts by creating a more natural wetland hydrologic cycle of drying and flooding.

The aesthetics of the area and the associated recreational opportunities are other potentially affected resources. Cumulative impacts to aesthetics and recreation could, subsequently, contribute to cumulative impacts to local economics as well. Improvements to forest habitat could contribute to provide long-term beneficial impacts to aesthetics and recreational opportunities, which would, in turn, contribute to long-term benefits to the local economy. Hunting, angling, and boating are all recreational activities that could contribute benefits to the local rural economy on both sides of the river.

4.4. Step 4: Analyze Cumulative Impacts

For each resource, the actions identified in Step 3 are analyzed in combination with the impacts of the action alternatives being evaluated. This analysis describes the overall cumulative impact related to each resource and the contribution to this cumulative impact of each alternative being evaluated. None of the alternatives were determined to significantly adversely impact the resources discussed. Cumulative impacts to the various resources are summarized in Table 4.

Table 4. Summary of the "No Action" and Tentatively Selected Plan alternatives to physical, biological, and socioeconomic resources.

No Action Alternative Future Effects Compared to Existing Conditions (Effects of Nature)							Symbols: X = Long-Term Effect T = Temporary Effect C = Cumulative Impact	**Proposed Alternatives, Effects of Action Alternatives to No Action Effects (Effects of Project)**						
BENEFICIAL				ADVERSE				BENEFICIAL				ADVERSE		
SIGNIFICANT	SUBSTANTIAL	MINOR	NO EFFECT	MINOR	SUBSTANTIAL	SIGNIFICANT	Affected Resource	SIGNIFICANT	SUBSTANTIAL	MINOR	NO EFFECT	MINOR	SUBSTANTIAL	SIGNIFICANT
							A. Physical Effects							
			X				Topography, Geology, & Soils				**X**			
				X			Land Use/Land Cover			**X**				
			X				Prime Farmland				**X**			
			X				Noise					**T**		
			X				Water Quality					**T**		
			X				Hydraulics & Hydrology				**X**			
			X				Air Quality					**T**		
			X				Climate				**X**			
			X				Hazardous Waste				**X**			
							B. Biological Effects							
			X				Aquatic Habitat					**T**		
					C		Terrestrial Habitat		**C**					
			X				Bald Eagle				**X**			
				X			Migratory Birds					**T**		
					C		Invasive Species		**C**					
				X			State-listed Species					**T**		
				X			Federally-listed Species					**T**		
							B. Social Effects							
				X			Economics			**X**				
				C			Aesthetics			**C**				
				C			Recreation			**C**				
			X				Cultural Resources, Historic Prop.				**X**			
			X				Tribal Resources				**X**			
			X				Environmental Justice				**X**			

5.0. COMPLIANCE WITH ENVIRONMENTAL POLICY

The relationship of the Tentatively Selected Plan to environmental requirements, environmental acts, and /or executive orders is shown in Table 5.

Table 5. Relationship of the Tentatively Selected Plan to environmental requirements, environmental acts, and/or executive orders.

Environmental Requirement	Compliance
American Indian Religious Freedom Act, as amended, 42 USC § 1996	FC
Bald Eagle Protection Act, 42 USC 4151-4157	FC
Clean Air Act, 42 USC 7401-7542	FC
Clean Water Act, 33 USC 1251-1375	FC
Comprehensive Environmental Response, Compensation, and Liability Act, (HTRW) 42 USC 9601-9675	FC
Endangered Species Act, 16 USC 1531-1543	FC
Farmland Protection Policy Act, 7 (Prime Farmland) USC 4201-4208	FC
Fish and Wildlife Coordination Act, 16 USC 661-666c	FC
Food Security Act of 1985 (Swampbuster), 7 USC varies	FC
Land and Water Conservation Fund Act, (Recreation)16 USC 460d-4601	FC
Migratory Bird Treaty Act of 1918, as amended, 16 USC § 703, et seq.	FC
National Environmental Policy Act of 1969, 42 USC 4321-4347	PC[2]
National Historic Preservation Act, 16 USC 470 et seq.	FC
Noise Control Act of 1972, 42 USC 4901-4918	FC
Resource, Conservation, and Rehabilitation Act, (Solid Waste) 42 USC 6901-6987	FC
Rivers and Harbors Appropriation Act, (Sec. 10) 33 USC 401-413	FC
Water Resources Development Acts of 1986 and 1990 (Sec 906 – Mitigation; Sec 307 - No Net Loss - Wetlands)	FC
Floodplain Management (EO 11988 as amended by EO 12148)	FC
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, EO 12898, February 11, 1994, as amended	FC
Federal Compliance with Pollution Control Standards (EO 12088)	FC
Invasive Species, EO 13112, February 3, 1999, as amended	FC

Protection and Enhancement of Environmental Quality (EIS Preparation) (EO 11991)	FC
Protection and Enhancement of the Cultural Environment (Register Nomination) (EO 11593)	FC
Protection of Wetlands (EO 11990 as amended by EO 12608)	FC

FC = Full Compliance, PC^1 = Partial Compliance (on-going, will be accomplished prior to construction), PC^2 full compliance will be achieved upon signing of the NEPA document.

6.0 COORDINATION AND PUBLIC REVIEW

Notification of the DRAFT Environmental Assessment and unsigned Finding of No Significant Impact was sent to relevant officials, agencies, organizations, and individuals for review and comment. Additionally, an electronic copy of the EA was available on the St. Louis District's website during the 30-day public review period beginning on 4 November 2022 at the following url:

https://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/2022draftEAFONSIGilbertIslandForestry.pdf

Please note that the Finding of No Significant Impact was unsigned during the public review period. These documents would be signed into effect only after having carefully considered comments received as a result of the public review. To assure compliance with the National Environmental Policy Act, Endangered Species Act, and other applicable environmental laws and regulations, coordination with these agencies will continue as required throughout the planning and construction phases of the proposed levee repairs.

Notification of Draft Environmental Assessment and unsigned Finding of No Significant Impact was sent to the following entities:

<u>MVS External Government Stakeholder</u>
Office of the Governor
    Pritzker, J.B.
Missouri Senator
    Blunt, Roy
Missouri Congressional District 6 Representative
    Graves, Sam

<u>Local Municipalities</u>
Ashburn, MO
    Lumpkin, Sandra J.

<u>MVS External Agency Stakeholder</u>
Environmental Protection Agency, Region 7
Missouri Environmental Protection Agency
Missouri Dept of Natural Resources
    Bax, Stacia
Missouri Historic Preservation Agency
U.S. Department of Agriculture, Missouri
    Bowling Green Service Center
    New London Service Center
National Oceanic and Atmospheric Administration
    Buan, Steve

National Park Service
Lange, James
U.S. Fish and Wildlife Service, Missouri Office
Mangan, Matthew

MVS External Environmental Stakeholder
Ducks Unlimited Missouri, Bowling Green Office
Leffeler, Linda
The Nature Conservancy, Missouri Field Office

MVS External Tribe Stakeholder
Absentee-Shawnee Tribe
Devon Frazier
Caddo Nation
Historic Preservation Office
Chairman of Caddo Nation
Francis, Tamara
Citizen Potawatomi Nation
Kelli Mosteller
Eastern Shawnee Tribe of Oklahoma
Brett Barnes
Delaware Tribe of Indians
Dr. Brice Obermeyer
Dr. Larry Heady
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Hannahville Indian Community
Earl Meshigaud
Ho-Chunk Nation of Wisconsin
William Quackenbush
Iowa Tribe of Kansas and Nebraska
Lance Foster
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Kent Collier
Miami Tribe of Oklahoma
Diane Hunter
Nottawaseppi Band of Huron Potawatomi
Fred Jacko, JR
Peoria Tribe of Indians of Oklahoma
Charla EchoHawk

Pokagon Band of Potawatomi
Matthew Bussler
Prairie Band Potawatomi Nation
Warren Wahweotten
Sac & Fox Nation of Missouri in Kansas and Nebraska
Chairperson Tiauna Carnes
Sac & Fox Nation of Oklahoma
Principal Chief Kay Rhoads
Sac & Fox Tribe of the Mississippi in Iowa
Buffalo, Jonathon
Shawnee Tribe
Tonya Tipton
SOARRING Foundation
Joseph Standing Bear Schranz
The Osage Nation
Chief John Red
Dr. Andrea Hunter
The Quapaw Tribe of Indians
Everett Bandy
United Keetoowah Band of Cherokee of Oklahoma
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10.0 FINDING OF NO SIGNIFICANT IMPACT

GILBERT ISLAND FOREST STAND IMPROVEMENT
Pike and Ralls Counties, Missouri

The U.S. Army Corps of Engineers, St. Louis District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 2020, as amended. The draft Environmental Assessment (EA) dated **4 November 2022**, for the **Gilbert Island Forest Stand Improvement** addresses **forest management** opportunities at **Gilbert Island**.

The Environmental Assessment evaluated various alternatives that would **improve the sustainability and health of forest stands** in the study area. The Tentatively Selected plan is the Forest Stand Improvement (FSI) alternative and includes:

- Improve tree species diversity by removing trees and other vegetation that compete for resources with desirable tree species.
- Create a favorable composition of these desirable tree species.
- Improve the structure of the forest stand by manipulating age-classes and density of trees.
- Preserve some dead snags for wildlife habitat while removing some snags that pose a safety risk.
- Remove invasive and undesirable tree and vegetation species.

A "no action" plan was also evaluated in the EA.

SUMMARY OF POTENTIAL EFFECTS:

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the Tentatively Selected plan are listed in Table 6:

Table 6. Summary of Potential Effects of the Tentatively Selected Plan

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Topography, Geology, and Soils	☐	☐	☒
Land Use/Land Cover	☒	☐	☐
Prime Farmland	☐	☐	☒
Noise	☒	☐	☐
Water Quality	☒	☐	☐
Hydraulics and Hydrology	☒	☐	☐
Air Quality	☒	☐	☐

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Climate	☐	☐	☒
Hazardous, Toxic & Radioactive Waste	☐	☐	☒
Aquatic Habitat	☒	☐	☐
Terrestrial Habitat	☒	☐	☐
Bald Eagle	☒	☐	☐
Migratory Birds	☒	☐	☐
Invasive Species	☒	☐	☐
Economics	☒	☐	☐
Aesthetics and Recreation	☒	☐	☐
Cultural Resources	☒	☐	☐
Tribal Resources	☐	☐	☒
Environmental Justice	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the Tentatively Selected plan. Best management practices (BMPs) as detailed in the EA will be implemented, if appropriate, to minimize impacts. All tree removal would take place between 1 November to 31 March to avoid impacts to protected bat species. Active bald eagle, osprey, and other migratory bird nests would be avoided. Areas of soil disturbance would be restored with a native seed cover mix. Measures would be taken to arrest sediments in disturbed areas to prevent sedimentation in the Mississippi River. There are no known patches of milkweed on the island, but any new patches discovered over the course of the project would be avoided by any operations that might destroy live plants. Invasive species encountered would be cut and treated with herbicide, where appropriate.

COMPENSATORY MITIGATION:

No compensatory mitigation is required as part of the Tentatively Selected plan.

PUBLIC REVIEW:

Public review of the draft EA and FONSI began on 4 November 2022. All comments submitted during the public review period will be taken into consideration prior to preparation of the Final EA and FONSI.

OTHER ENVIRONMENTAL AND CULTURAL COMPLIANCE REQUIREMENTS:

ENDANGERED SPECIES ACT

INFORMAL CONSULATION:

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the Tentatively Selected Plan may affect, but is not likely to adversely affect, the following federally listed species or their designated critical habitat: Gray Bat, NLEB, Indiana Bat, Tricolored Bat, and Spectaclecase mussel. Furthermore, the U.S. Army Corps of Engineers determined that the Tentatively Selected Plan was "not likely to jeopardize the continued existence" of the Monarch Butterfly. The U.S. Fish and Wildlife Service (FWS)U.S. Fish and Wildlife Service (FWS) concurred with the Corps' determination on **6 October 20226 October 2022**

NATIONAL HISTORIC PRESERVATION ACT

NO EFFECT TO HISTORIC PROPERTIES:

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that the Tentatively Selected Plan would have no effect on historic properties.

CLEAN WATER ACT SECTION 401 COMPLIANCE*:*

The proposed forestry management actions would be authorized under a Nationwide Permit 27: Aquatic Habitat Restoration, Enhancement, and Establishment Activities. The Nationwide Permit conditions, the General Conditions, and the Regional Conditions will be adhered to. Therefore, 401 certification is included in the Nationwide Permit 27.

OTHER SIGNIFICANT ENVIRONMENTAL COMPLIANCE:

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

FINDING

Technical, environmental, and scientific criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State, and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the Tentatively Selected Plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____ _____

Kevin R. Golinghorst
Colonel, U.S. Army,
District Commander

Appendix 1

USFWS Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: October 06, 2022
Project Code: 2022-0017217
Project Name: Gilbert Island Forestry Management Project

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.*).

Threatened and Endangered Species

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 may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from 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. **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.** The Service recommends that verification be completed by visiting the ECOS-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 ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- 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:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Project Code: 2022-0017217

Project Name: Gilbert Island Forestry Management Project

Project Type: Restoration / Enhancement - Forest

Project Description: The Gilbert Island sub-unit is located in Pike and Ralls County Missouri between river mile 298 to 294
just north of Ashburn, MO (T55N R3W, Sections 1 and 2; T55N R2W, Section 06; T56N R3W, Sections 35 and 36). The
1125-acre area is divided into 30 stands comprising a variety of habitats including wet forest (1,042 acres), wet meadow, (37.5 acres), shallow marsh (7.3 acres), and open water (38.4 acres). Gilbert Island is only accessible by boat. Forest Stand Improvement activities would be performed on the island. These activities will include the drainage improvements-excavation and disposal of sediments that have plugged existing drainage channels on the island. The other activities would include tree removal, tree planting, and invasive species removal.
The Rivers Project Office is proposing several different forest stand improvement activities on Gilbert Island that would impact more than 110 acres. The work would be accomplished in accordance with the Rivers Project Master Plan (MP) and Rivers Project Operational Management Plan (OMP).
• Seed Tree Method on approximately 50 acres to help promote regeneration of early successional forest.
• Interplanting hard mast tree species on about 15 acres to restore Oak/ Hickory Forest.
• Interplanting eastern cottonwood and American sycamore on approximately 42 acres to help establish young early successional forest.
• Creation of 0.25-acre canopy gaps through tree removal.
• Herbicide treatment to reduce the dominance of woody vines and improve natural regeneration on about 53 acres.
• Improving the drainage of the island by excavation and dredging that would impact approximately 585 acres in order to improve conditions necessary for early succession and seedling regeneration.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.58729865,-91.1829904686159,14z

Counties: Pike and Ralls counties, Missouri

Endangered Species Act Species

There is a total of 6 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 Fisheries[1], 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.

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1. NOAA Fisheries, 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
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/2MCYBZMSXVHTXODW3C45LOLH2M/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/2MCYBZMSXVHTXODW3C45LOLH2M/documents/generated/6868.pdf	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Clams

NAME	STATUS
Spectaclecase (mussel) *Cumberlandia monodonta*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7867

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands 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.S. Army Corps of Engineers District.

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

- PFO1Ch
- PFO1Ah
- PSS1Ch
- PSS1Ah

FRESHWATER POND

- PUBGh
- PUBFh

FRESHWATER EMERGENT WETLAND

- PEM1Ah
- PEM1Ch

LAKE

- L1UBHh

IPaC User Contact Information

Agency: Army Corps of Engineers
Name: Evan Hill
Address: 1222 Spruce St
City: St. Louis
State: MO
Zip: 63103
Email evan.b.hill@usace.army.mil
Phone: 3149255004

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Southern Illinois Sub-Office (ES)
8588 Route 148
Marion, Illinois 62959

In Reply Refer To:
FWS/SISO
Consultation Code: 2022-0017217

October 6, 2022

Teri C. Allen, Ph.D.
Chief, Environmental Compliance Section
U.S. Army Corps of Engineers, St. Louis District
1222 Spruce Street
St. Louis, MO 63103-2833

Attention: Evan Hill

Teri C. Allen:

Thank you for the opportunity to review and comment on the September 2022 Biological Assessment (BA) addressing the Rivers Project Office proposed Gilbert Island Forestry Management Project located between Upper Mississippi River Miles 294 and 298 in Pike and Ralls counties, Missouri. The proposed project involves forest stand improvement activities on approximately 172.6 acres. Specific actions include seed tree treatment on 50 acres, interplanting of hard mast on 15 acres, interplanting of cottonwood and sycamore on 42 acres, creation of several small canopy gaps, invasive species treatment on 53 acres, and improved site drainage. These comments are provided under the authority of and in accordance with the provisions of the Endangered Species Act of 1973, as amended; the Fish and Wildlife Coordination Act; the Migratory Bird Treaty Act, and the National Environmental Policy Act.

Fish and Wildlife Resources

The proposed actions are designed to restore and maintain forest diversity, health, and sustainability within the project area. Therefore, the Service agrees that the proposed actions are likely to be beneficial to a wider variety of wildlife resources.

Threatened and Endangered Species

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service (Service) information concerning any species, listed, or proposed to be listed, which may be present in the area of a proposed action. In the BA you provided a list of species which may be present within the project area that was obtained from the Services IPaC system on March 8, 2022. An updated species list should be obtained for the proposed project area. The current list includes the endangered gray bat, endangered spectaclecase mussel, endangered Indiana bat, threatened northern long-eared bat, proposed as endangered tricolored bat, and candidate monarch butterfly. There is no designated critical habitat in the project area at this time.

Information in the BA indicates that the pallid sturgeon is not known to occur within the vicinity of the proposed project, thus the USACE has determined that the proposed project is not likely to adversely affect the species. The current range of the pallid sturgeon does not overlap with the project area; thus, the Service concurs that the proposed project is not likely to be adversely affect the pallid sturgeon. The Higgins eye, sheepnose, and spectaclecase mussel species are not known to occur within the project area, thus the USACE has determined that the proposed project is not likely to adversely affect these species. The current range for the Higgins eye and sheepnose does not overlap with the project area and the spectaclecase is not known from the project area, thus the Service concurs that the proposed project is not likely to adversely affect the listed mussel species.

Several conservation measures have been incorporated into the proposed project to avoid and minimize impacts to the Indiana bat and their habitats. They include thinning of the understory and midstory to improve roosting and foraging habitat, retention of snags and trees with exfoliating bark for roosting habitat and clearing trees during the non-active season (November 1 through March 31). In addition, the proposed project will impact a small amount (0.2%) of the available habitat within 5 miles of the project area and no hibernacula or caves have been documented within the proposed project area; therefore, the Corps has determined that the proposed project is not likely to adversely affect the gray bat, Indiana bat, and northern long-eared bat. The proposed measures should also avoid and minimize impacts to the tricolored bat. Based on this information, the Service concurs that the proposed project is not likely to adversely affect the listed bat species.

The monarch butterfly and habitat for the species may be exposed to project activities during implementation of proposed project. Proposed conservation measures include targeted application of herbicides to treat invasive species. Based on the scale of the proposed activities and proposed conservation measure, the Service concurs that the proposed project is not likely to jeopardize the continued existence of the species. Should this project be modified, or new information indicate listed or proposed species may be affected, consultation or additional coordination with this office, as appropriate, should be initiated.

Migratory Bird Resources

Although the bald eagle has been removed from the threatened and endangered species list, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The Service developed the National Bald Eagle Management Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute “disturbance,” which is prohibited by the BGEPA. The Service is unaware of any bald eagle nests in the proposed project area; however, if a bald eagle nest is found in the project area or vicinity of the project area then our office should be contacted. For activities that have the potential to result in take or disturbance of eagles or their nests please contact the Region 3 Migratory Bird Office using the link below.

https://www.fws.gov/midwest/eagle/contactus.html

A copy of the guidelines is available at:

https://www.fws.gov/media/national-bald-eagle-management-guidelines-0

Thank you for the opportunity to provide comment on the BA. For additional coordination, please contact me at (618) 998-5945.

Sincerely,

/s/ Matthew T. Mangan

Fish and Wildlife Biologist

Appendix 2

MDC Coordination

Missouri Natural Heritage Review

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to
protect and manage the forest, fish, and
wildlife resources of the state and to
facilitate and provide opportunities for all citizens to
use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Gilbert Island Forestry Management #10610
Project Description: The Gilbert Island sub-unit is located in Pike and Ralls County Missouri between river mile 298 to 294 just north of Ashburn, MO (T55N R3W, Sections 1 and 2; T55N R2W, Section 06; T56N R3W, Sections 35 and 36). The 1125-acre area is divided into 30 stands comprising a variety of habitats including wet forest (1,042 acres), wet meadow, (37.5 acres), shallow marsh (7.3 acres), and open water (38.4 acres). Gilbert Island is only accessible by boat. Forest Stand Improvement activities would be performed on the island. These activities will include the drainage improvements-excavation and disposal of sediments that have plugged existing drainage channels on the island. The other activities would include tree removal, tree planting, and invasive species removal. The Rivers Project Office is proposing several different forest stand improvement activities on Gilbert Island that would impact more than 110 acres. The work would be accomplished in accordance with the Rivers Project Master Plan (MP) and Rivers Project Operational Management Plan (OMP). • Seed Tree Method on approximately 50 acres to help promote regeneration of early successional forest. • Interplanting hard mast tree species on about 15 acres to restore Oak/Hickory Forest. • Interplanting eastern cottonwood and American sycamore on approximately 42 acres to help establish young early successional forest. • Creation of 0.25-acre canopy gaps through tree removal. • Herbicide treatment to reduce the dominance of woody vines and improve natural regeneration on about 53 acres. • Improving the drainage of the island by excavation and dredging that would impact approximately 585 acres in order to improve conditions necessary for early succession and seedling regeneration.
Project Type: In-stream / Riverine Activities and Projects, Dredging/channel maintenance
Contact Person: Evan Hill
Contact Information: evan.b.hill@usace.army.mil or 5739255004

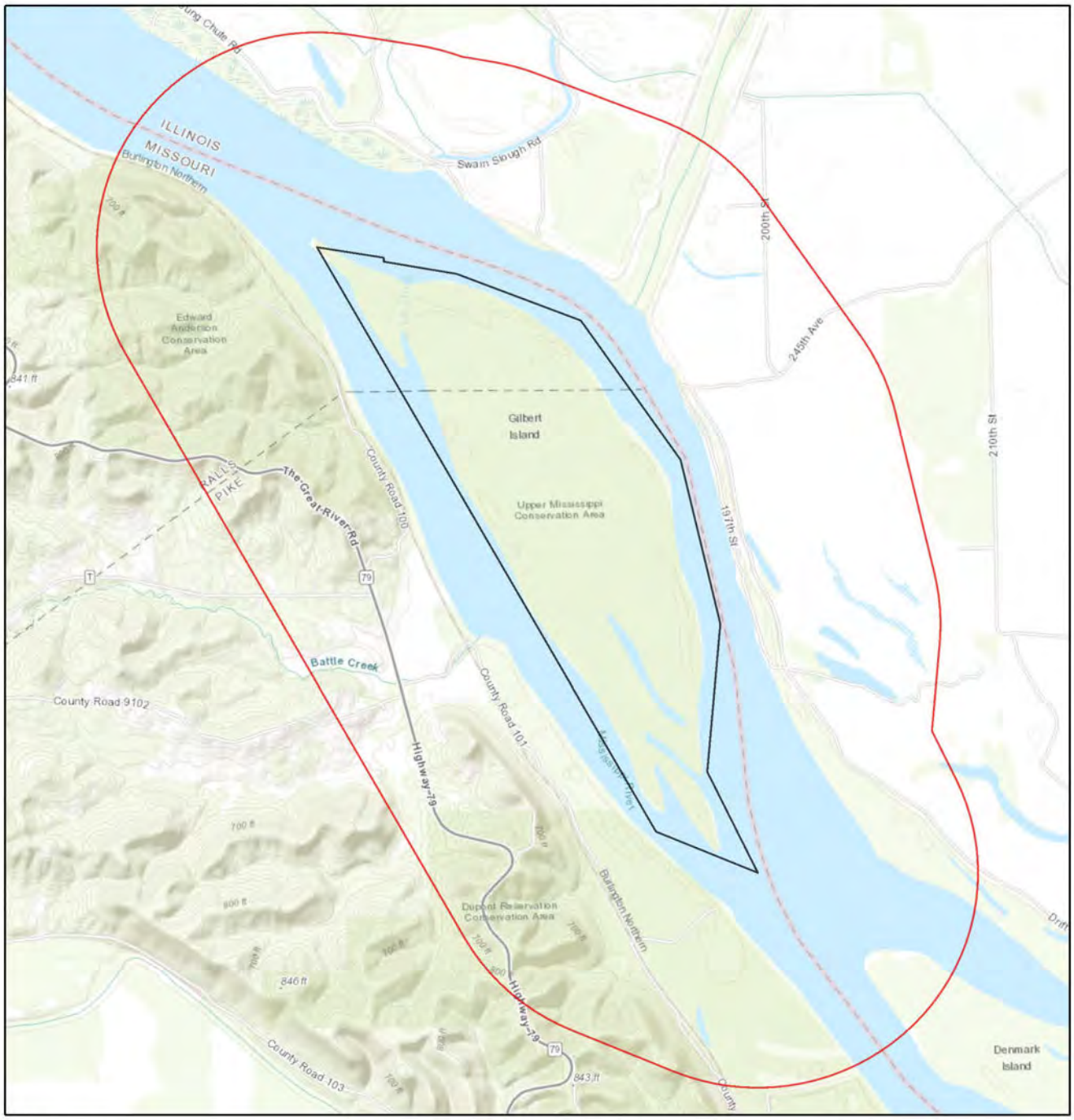
Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

The Natural Heritage Report is not a site clearance letter for the project. It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at https://ecos.fws.gov/ipac/ for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit https://www.modot.org/ for additional information on recommendations.

Gilbert Island Forestry Management



March 8, 2022

1:40,839

0 0.35 0.7 1.4 mi

0 0.5 1 2 km

- Project Boundary
- Buffered Project Boundary

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species or Communities of Conservation Concern within the Area:

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, Anderson (Edward) CA, Dupont Reservation CA, Shanks (Ted) CA, Upper Mississippi CA, please contact MDC.

Your project is near a designated Natural Area . Please contact Missouri Department of Conservation (NaturalHeritageReview@mdc.mo.gov) for further coordination.

Project Type Recommendations:
Recommendations for Best Management Practices are under development.

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. **If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

The project site submitted and evaluated is on or near Sensitive Aquatic Species Waters Mississippi River, an important stream for freshwater mussel and amphibian populations. These streams were so designated because they have highly diverse mussel communities and mussel and amphibian species identified as Species of Conservation Concern. These streams are important to maintaining, restoring, or avoiding future listing of Species of Conservation Concern. Impacts to these aquatic species and habitats can be reduced by avoiding or minimizing activities that disturb the stream substrate, including rock placement, dredging, trenching, and wetted gravel bar disturbance; and avoid introducing heavy sediment loads, chemical or organic pollutants. These streams also are included as a Missouri Nationwide Permit Regional Condition (Number 7) that must be considered if working under if working under a Clean Water Act Section 404 Permit issued by the U.S. Army Corps of Engineers (http://www.nwk.usace.army.mil/Missions/RegulatoryBranch/NationWidePermit...). A list of all streams designated under this Condition is available at http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermi....

The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html if eagle nests are seen.

The submitted project location is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream.

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See https://mdc.mo.gov/community-conservation/managing-invasive-species-your-community for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (http://dnr.mo.gov/env/wpp/401/index.html), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit http://dnr.mo.gov/env/wpp/permits/index.html for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See https://mdc.mo.gov/sites/default/files/mo_nature/downloads/2021_SOCC.pdf for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at https://mdc12.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx. If you would like printed copies of best management practices cited as internet URLs, please contact the Missouri Department of Conservation.

Missouri Department of Conservation
Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Hannah Roos
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Natural Heritage Review Report

May 2, 2022

Evan Hill
U.S. Army Corps of Engineers
evan.b.hill@usace.army.mil

NHR ERT ID:	10610	NHR ERT Level:	3
Project type:	Instream Other		
Location/Scope:	Gilbert Island		
County:	Pike/Ralls		
Query reference:	Gilbert Island Forestry Management		
Query received:	4/7/2022		

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. On-site verification is the responsibility of the project. Natural Heritage records were identified at some time and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records serve as one reference and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed to avoid or minimize impacts. More information is at Natural Areas | Missouri Department of Conservation (mo.gov) and Missouri Fish and Wildlife Information System (MOFWIS).

Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Our records indicate a Bald Eagle nest located on Gilbert Island located at 91.1846615°W 39.5896117°N. This nest was last confirmed at this location in 2016 and may have moved. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: https://www.fws.gov/midwest/eagle/permits/index.html if eagle nests are seen.

Natural Heritage records identify several federal-listed endangered mussel species associated with the nearby Mississippi River, including Spectaclecase, Higgins Eye, Sheepnose, and Fat Pocketbook.

Indiana and Northern Long-eared bat records occur within 2 miles of the project area.

- **Bald Eagles:** Bald Eagles (*Haliaeetus leucocephalus*) nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act.

  Following USFWS Incidental Take Guidelines: To avoid the incidental take of bald eagles we recommend:
  - a buffer of at least 660 feet between project activities and the nests (including active and inactive nests).
  - If project activities are within 660 feet of the nest, please restrict activities to outside the nesting season. The nesting season in Missouri is January 1 – July 15.
  - If these recommendations cannot be implemented, incidental take of bald eagles may occur and a permit from USFWS may be necessary.
  - Do not clear nests or nest trees.

- **Mussels:** Mussels are relatively immobile animals that are vulnerable to pollutants, sediment discharges, channel alterations and other activities destructive to mussel habitat. Activities that alter or destabilize stream bottoms or banks or introduce silt, chemical or organic pollutants should

be avoided. Avoid crossing flowing water but, if unavoidable, minimize crossing distance and use temporary crossings that do not restrict water flow. See https://mdc.mo.gov/sites/default/files/2021-12/FreshwaterMusselsBMP_2021.pdf for Best Management Practices regarding these animals.

- **Indiana Bats and Northern Long-eared Bats** occur in Pike County and could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed threatened) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April. **Prior to removing trees for this project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

- **Mississippi River:** The Mississippi River (together with its tributary mouths) is home to many aquatic species of state and federal concern, including federal-listed Pallid Sturgeon, several mussel species in the pooled reaches upstream of the Missouri confluence and mainstem; and state-listed Lake Sturgeon, and Flathead Chubs; and Interior least terns in the lower Mississippi. All these are sampled at points but must be assumed to be present in suitable habitats through extended river reaches. Bluffs, banks, and floodplains may also include habitat used by listed Gray bats, Indiana bats and Bald Eagles.
  - Terrestrial projects that manage construction and include operation plans to avoid runoff of sediment or pollutants are unlikely to affect the aquatic species.
  - Regulations enforced by other agencies to protect water quality and human health are generally adequate to protect the needs of wildlife as well.
  - Projects that place fill in or discharge water to the river are subject to federal permits, and strict observance of conditions required in those permits is important to minimize risk of damage to endangered species.
  - Please see https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Streams.pdf for best management recommendations relating to streams and rivers.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. **Contact the U.S. Fish and Wildlife Service** (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records indicate the following state-listed endangered species occur near the project area:

Scientific Name	Common Name	State Status	Proximity (miles)
Acipenser fulvescens	Lake Sturgeon	Endangered	<1
Botaurus lentiginosus	American Bittern	Endangered	<5

Rallus elegans	King Rail	Endangered	<1
Reginaia ebenus	Ebonyshell	Endangered	<1

- **Lake Sturgeon:** Lake Sturgeon (*Acipenser fulvescens*) are widely distributed in North America. In Missouri, they are found in the Mississippi and Missouri Rivers but have also been known to occur in the larger tributaries of those two rivers. Lake Sturgeon are listed as either threatened or endangered throughout most of its original range in the United States. Over-harvest appears to have been responsible for the greatest decline in abundance of the Lake Sturgeon. Pollution and restriction of migratory movements due to construction of dams have compounded the problems of over- exploitation. Best management for this species can be found at https://mdc.mo.gov/sites/default/files/2020-06/LakeSturgeonBMP.pdf.

- **American Bitterns** (*Botaurus lentiginosus*) nest in permanent wetlands with tall, emergent vegetation such as bur-reed and bulrush. Breeding occurs between April and July. Protection and restoration of quality wetlands are important for many species, including the American Bittern. Project activities should not occur within 100 feet of wetland habitat between April 1 and July 31 to prevent disturbing nesting birds. Erosion and sediment controls should be implemented, maintained and monitored for the duration of the project. Disposal of wastes and garbage should be done in designated areas far from wetlands. Draining or destroying permanent, emergent wetland habitat should be avoided. See https://mdc.mo.gov/sites/default/files/2020-06/AmericanBitternBMP.pdf for best management practices regarding this species.

- **King Rail:** Heritage records indicate the presence of King Rail (*Rallus elegans*, state listed endangered) within the project area. King Rails prefer wetlands with abundant grasses, sedges, rushes and cattails. They prey primarily on aquatic beetles, semiaquatic beetles, fish, mollusks and crustaceans. In Missouri, breeding begins in April, with males building nests in herbaceous cover over shallow water in river floodplains. See https://mdc.mo.gov/sites/default/files/2020-06/KingRailBMP.pdf for Best Management Practices regarding this species.

Natural Heritage records indicate the following state-ranked species near the project area:

Scientific Name	Common Name	State Rank	Proximity (miles)
Acalypha deamii	Large Seeded Mercury	S2	<3
Ammocrypta clara	Western Sand Darter	S2S3	<2
Aralia nudicaulis	Wild Sarsaparilla	S2	<3
Arcidens confragosus	Rock Pocketbook	S3	<1
Ardea alba	Great Egret	S3	<2
Cyclonaias nodulata	Wartyback	S3	<1
Egretta caerulea	Little Blue Heron	S3	<5
Gallinula galeata	Common Gallinule	S2	<2
Hybognathus nuchalis	Mississippi Silvery Minnow	S3S4	<2
Ixobrychus exilis	Least Bittern	S3	<2
Ligumia recta	Black Sandshell	S2	<2
Merope tuber	A Meropid Scorpionfly	S3	<1
Notropis buchanani	Ghost Shiner	S2	<3

Obovaria olivaria	Hickorynut	S3	<1
Percina shumardi	River Darter	S3	<3
Stylurus notatus	Elusive Clubtail	S2S3	<2

State Rank Definitions:

- S1: Critically imperiled in the state because of extreme rarity of or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically, 5 or fewer occurrences or very few remaining individuals (<1,000).
- S2: Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state (6 to 20 occurrences or few remaining individuals).
- S3: Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
- S4: Uncommon but not rare, and usually widespread in the nation or state. Possible cause of long-term concern. Usually more than 100 occurrences and more than 10,000 individuals.
- S#S#: Range Rank: A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status.
- ?: Denotes inexact or uncertain numeric rank.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111).
See the 2022 Missouri Species and Communities of Conservation Concern Checklist for a complete list.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- The Department does not support the project as proposed. Please contact MDC Fisheries Management Biologist Annie Hentschke (annie.hentschke@mdc.mo.gov) for further coordination.

- **Conservation Opportunity Areas:** The project is within Ted Shanks Wetland Complex Conservation Opportunity Area. COAs are key landscapes that represent the greatest opportunities for sustainable conservation of the Missouri's diverse flora and fauna and the natural communities they depend upon, including: grasslands (including prairie and savanna), glades, forests and woodlands, wetlands, caves and karst, and rivers and streams. COAs have been identified based on several factors, including the diversity and rarity of species and natural communities present, and the comparative likelihood/importance of projects to maintain them in the area over time. COAs have no regulatory role, but do reflect interest as a planning tool from multiple government agencies, non-governmental organizations and citizen groups to facilitate conservation in the area. Maintenance of high quality natural terrestrial and aquatic communities will help provide important habitat for the COA's biodiversity. Funding might be available to manage for important habitats within the COA. Please contact Missouri Department of Conservation for more information.

- **Karst:** Pike and Ralls Counties have known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or

affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. See https://live-mdcd8.pantheonsite.io/sites/default/files/2020-06/Karst.pdf for best management recommendations.

- **Gray Bats:** Gray Bats (*Myotis grisescens*, federal and state-listed endangered) occur in Pike and Ralls Counties and could occur in the project area, as they forage over streams, rivers, and reservoirs. Avoid entry or disturbance of any cave inhabited by gray bats and when possible retain forest vegetation along the stream and from the gray bat cave opening to the stream.

- Invasive exotic species are a significant issue for fish, wildlife, and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Appendix 3

Cultural Coordination

Letter to Missouri SHPO

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

July 21, 2022

Engineering and Construction Division
Curation and Archives Analysis Branch (EC-Z)

Ms. Amy Rubingh
Review, Compliance, Records Coordinator
Missouri SHPO
1101 Riverside Drive
Jefferson City, Missouri 65101

Subject: Gilbert Island Forestry Management

Dear Ms. Rubingh:

The United States Army Corps of Engineers (USACE) is presently proposing to conduct forest management activities on Gilbert Island, Pike and Ralls Counties, Missouri (Figure 1). We are contacting your office to initiate consultation under Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and its implementing regulation 36 CFR 800.

Several different activities will be conducted on the island that will impact approximately 172.6 acres (Figure 1). The work would be accomplished in accordance with the Rivers Project Master Plan (MP) and Rivers Project Operational Management Plan (OMP). Key aspect of the project include:

- Seed Tree Method on approximately 50 acres to help promote regeneration of early successional forest.
- Interplanting hard mast tree species on about 15 acres to restore Oak/Hickory Forest.
- Interplanting eastern cottonwood and American sycamore on approximately 42 acres to help establish young early successional forest.
- Creation of several 0.25-acre canopy gaps through tree removal.
- Herbicide treatment to reduce the dominance of woody vines and improve natural regeneration on about 53 acres.
- Improving the drainage of the island by excavation and dredging in order to improve conditions necessary for early succession and seedling regeneration.
- There would be 2 landing areas where equipment and vehicles would be offloaded from the boats and there would also be several access roads branching off from the 2 landings.

Although tree harvesting will be conducted throughout the island, the methodology to be used stipulates that the trees will be cut three feet above the ground, leaving the stump in place, and therefore, no ground disturbance activities will occur during the harvesting. However, the landing sites, haul roads, skid trails and excavations for drainage improvements involve some degree of land disturbance.

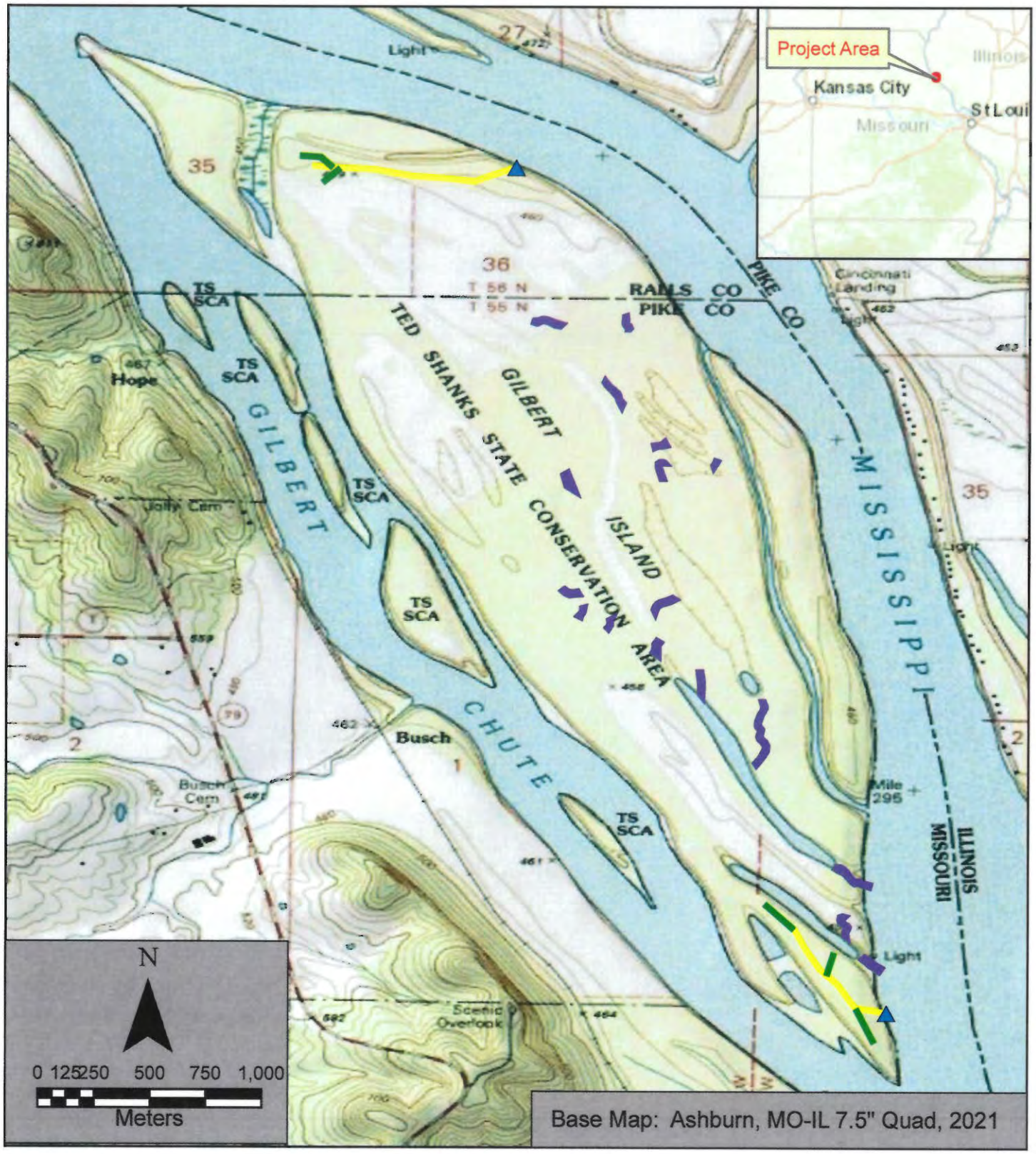
On June 27 and June 30, 2022, the USACE conducted an archaeological phase 1 survey. No archaeological sites were recorded within the project's Area of Potential Effect (APE). Based on these findings, it is of the opinion of the USACE that the proposed undertaking will have no significant effects on historic properties.

If human remains or unrecorded archaeological sites are found during the timber harvesting activities, all work will be stopped, and MO SHPO will be notified prior to any further ground disturbance activities.

Please find included a Section 106 survey memo. If you have any questions or comments, please feel free to contact me at (314) 331-8855, or contact Dr. Mark Smith at (314) 331-8831 or Mark.A.Smith4@usace.army.mil.

Sincerely yours,

Jennifer Riordan
Chief, Curation and Archives Analysis Branch



Legend

- Excavation Area
- Landing Site
- Haul Roads
- Skid Trails

Figure 1

Gilbert Island Phase I Survey
Topographical Map

Pike & Ralls Counties, Missouri

US Army Corps of Engineers ®
St. Louis District

Section 106 Survey Memo

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STAT H ST R R S R AT
P.O. BOX 176, JEFFERSON CITY, MISSOURI 65102
(573) 751-7858

SECTION 106 SURVEY MEMO

SHPO USE ONLY	
REVIEWER	
DATE	SHPO LOG #
☐ ACCEPTED	☐ REJECTED

1) SH PROJECT #
Not Assigned Yet

LOCATION INFORMATION & SURVEY CONDITIONS

2) COUNTY(S)
Pike & Ralls

3) S S QUADRANGLE AM S
Ashburn, MO-IL 2021

4) PROJECT TYPE/TITLE
Phase I Survey of Gilbert Island

5) FUND NG/PERMITT NG FEDERAL AGENCY(S)
United States Army Corps of Engineers (USACE) St. Louis District

6) SECTION
**See Attached

7) TOWNSHIP
**See Attached

8) RANGE
**See Attached

9) U.T.M. R LAT L R AT S R RAL R T L AT
15 n 655946 4383630

10) PROJECT DESCRIPTION
Forest management project with proposed landing sites, haul roads, skid trails, and excavation areas

11) TOPOGRAPHY
Ridge and Swale Floodplain

12) SOILS
Soil Series: 66004 Dockery Silt Loam and 66074 Chequest Silty Clay Loam

13) DRAINAGE
Mississippi River

14) LAND USE/GROUND COVER (NCLUDING % VISIB LITY)
Uninhabited island. Mixed Hardwoods, shrubs, weeds. 0% visibility

15) SURVEY LIMITATIONS
Shovel test soils were troweled instead of screened due to clay soils.

HISTORICAL BACKGROUND INFORMATION & SURVEY RESULTS

16) SH - CULTURAL RESOURCE NVENTORY ☐

17) ARCHAEOLOGICAL SURVEY OF MISSOURI ☐

18) L GIS DATABASE ☑

19) HISTORIC PLATS/ATLASES/SOURCES R R
**See Attached

20) PREVIOUSLY REPORTED AR HA L AL SITES W TH M L RA S S AR H AR A
**See Attached

21) PREVIOUS LT RAL R S R SURVEYS W TH M L RA S S AR H AR A
**See Attached

22) TH R REGIONAL SOURCES UT LIZED
Illinois SHPO Online GIS Database

23) W R S S R R RT
United States Army Corps of Engineers

24) NVESTIGATION TECHNIQUES
Shovel Testing at 15 meter intervals along centerline of proposed excavation areas and haul roads.

25) TIME EXPENDED
12 PERSON HOURS

26) AR HA L AL AR H T T RAL PROPERTIES LOCATED
No archaeology sites present within proposed excavation areas.

27) CULTURAL MATERIALS A R AT R S T
No cultural material or features identified within the proposed excavation areas.

28) ART A TS R R S CURATED AT
N/A

29) COLLECTION TECHNIQUES
N/A

30) ST MAT AREA SURVEYED (ACRES)
7.7 acres

1 RESULTS OF NVESTIGATION AND RECOMMENDATIONS T : H ST R R RT S R RS T R RT S L ST R L L R L ST TH AT AL R ST R

☑ a No historic properties located

☐ b No historic properties adversely affected

☐ c Historic properties adversely affected

☐ d Properties located that may be eligible for the ational Register; further testing is recommended

2 Comments: Historic sites are present on topographic maps and historic aerials but not within the proposed excavation areas

CULTURAL RESOURCE MANAGEMENT CONTRACTOR INFORMATION

32) ARCHAEOLOGICAL CONSULTANT
United States Army Corps of Engineers (USACE) St. Louis District

33) ADDRESS/PHONE MA L
1222 Spruce Steet. St. Louis, Missouri 63103 (314) 925-5031

34) SURVEYOR(S)	35) SURVEY DATE(S)
Matthew Terry and Meredith Hawkins Trautt	27Jun22 & 30Jun22
36) REPORT COMPILED BY	37) DATE
Matthew Terry	7/11/22

38) SUBMITTED BY (SIGNATURE AND TITLE)
Dr. Mark Smith. Principal Investigator

39) **ATTACHMENT CHECK LIST** (REQU RED)

✓ 1) Relevant Portion of USGS 7.5' Topographic Quadrangle Map(s) Showing Project Location and Any Recorded Sites

✓ 2) Project Map(s) Depicting Survey Limits and, when applicable, Approximate Site Limits, and Concentrations of Cultural Materials

____ 3) Site Form(s): One Copy of Each Form

____ 4) All Relevant Project Correspondence

✓ 5) Additional Information Sheets as Necessary

40) MA L ADDRESS OF OWNER/AGENT/AGENCY TO WHOM SHPO COMMENTS SHOULD BE S T

US Army Corps of Engineers, CEMVS-ECZ

1222 Spruce Street, St. Louis, MO 63103

41) CONTACT PERSON AM	42) TA T RS PHONE NUMBER MA L
Dr. Mark Smith	(314) 331-8831

REVIEWER COMMENTS

CULTURAL RESOURCE COMMENTS
Section 106 Review

SHPO Concurrence Letter

CONTACT PERSON/ADDRESS:
U.S. Army Corps of Engineers
St. Louis District
Attn: Mark Smith
1222 Spruce Street
St. Louis, MO 63103-2833

Copied:

PROJECT:
Gilbert Island Forestry Management

FEDERAL AGENCY:
USACE St. Louis District

COUNTY:
Pike and Ralls

The Missouri State Historic Preservation Office (SHPO) has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

[ ] Adequate documentation has been provided as outlined in 36 CFR Section 800.11. After review of the initial submission, the project area has no known historic properties present and a low potential for the occurrence of cultural resources. SHPO concurs with your determination of **No Historic Properties Affected.**

[ ] An adequate cultural resource survey of the project area has been previously conducted; therefore, SHPO concurs with your determination of **No Historic Properties Affected.**

[X] An adequate cultural resource surveys have been conducted for this project titled, *Phase I Survey of Gilbert Island* by Mark Smith. Based on this survey and it negative results, SHPO concurs with your determination of **No Historic Properties Affected.**

PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK CHANGES, SUCH AS A BORROW AREA BEING ADDED, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of consultation with SHPO under Section 106 of the National Historic Preservation Act, as amended. SHPO concurrence does not complete the Section 106 process as federal agencies will need to conduct consultation with all interested parties.

By: Toni M. Prawl — August 24, 2022
Toni M. Prawl, Ph.D., Deputy State Historic Preservation Officer — Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102
For additional information, please contact Amy at amy.rubingh@dnr.mo.gov or call (573) 751-4589.

Please be sure to refer to the project number: 035-MLT-22

Appendix 4

Tribal Coordination

Letter sent to the Tribes

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

July 25, 2022

Engineering and Construction Division
Curation and Archives Analysis Branch (EC-Z)

Subject: Gilbert Island Forestry Management Survey, Pike and Ralls Counties, Missouri

Ms. Devon Frazier Smith
Tribal Historic Preservation Officer
Absentee-Shawnee Tribe of Indians of Oklahoma
2025 S. Gordon Cooper Drive
Shawnee, OK 74801

Dear Ms. Frazier Smith:

The United States Army Corps of Engineers, St. Louis District (District), is presently proposing to conduct forest management activities on Gilbert Island, Pike and Ralls Counties, Missouri (Figure 1). The District is contacting your tribe to initiate consultation under Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and its implementing regulation 36 CFR 800.

Several different activities will be conducted on the island that will impact approximately 172.6 acres (Figure 2). The work would be accomplished in accordance with the Rivers Project Master Plan (MP) and Rivers Project Operational Management Plan (OMP). Key aspect of the project include:

- Seed Tree Method on approximately 50 acres to help promote regeneration of early successional forest.
- Interplanting hard mast tree species on about 15 acres to restore Oak/Hickory Forest.
- Interplanting eastern cottonwood and American sycamore on approximately 42 acres to help establish young early successional forest.
- Creation of several 0.25-acre canopy gaps through tree removal.
- Herbicide treatment to reduce the dominance of woody vines and improve natural regeneration on about 53 acres.
- Improving the drainage of the island by excavation and dredging in order to improve conditions necessary for early succession and seedling regeneration.
- There would be 2 landing areas where equipment and vehicles would be offloaded from the boats and there would also be several access roads branching off from the 2 landings.

Tree harvesting also will be conducted; however, the methodology to be used stipulates that the trees will be cut three feet above the ground, leaving the stump in place. Additionally, the work is to take place after the ground is frozen in order to keep ground disturbance from the skid trails to a minimum. Therefore, the tree harvesting will not have ground disturbance activities. However, the two haul roads and 17 areas of excavations for drainage improvements will involve varying degrees of land disturbance (Figure 2).

On June 27 and 30, 2022, District archaeologists conducted a Phase I archaeological survey. The island consists of the typical floodplain deposits with numerous ridges and swales. The survey consisted of a pedestrian and subsurface testing. It determined that the majority of the 17 excavation areas were located in the low-lying swales (Figures 3-5). One area, Area 10, was completely flooded and the field crew was not capable of accessing it. This area has since been removed from the excavation proposal due to accessibility issues. Three areas (15, 16, and 17) have historically been part of the river and were recently silted in; therefore, no subsurface testing took place. Portions of Areas 1 and 9 had shallow floodplain ridges that were shovel tested to 50 cm below surface. The shovel tests revealed recently accreted soil and no cultural resources were identified.

Both haul roads were located on ridges and were subsurface tested at 15-meter intervals to 50 cm below surface. Thirty-five shovel tests were placed in the north haul road and 48 shovel tests were conducted in the south haul road (Figures 3 and 5). Both revealed a consistent soil profile and most likely represent recent flooding episodes. No cultural resources were identified within the subsurface testing of the proposed haul roads.

A stone foundation, concrete footings, and a wind turbine were identified on the northwestern portion of the island, outside of the project areas (Figure 3). They most likely are associated with a residence identified on the 1890 topographic map and a 1940 aerial map. Three other potential historic residences were on the 1890 map and 1940 aerial in the southwestern portion of the island (Figure 4). None of these resources will be impacted by the proposed project, however, a 100-foot buffer will be placed around them.

It is the District's current opinion that the proposed project will have no adverse effects on historic properties.

If your tribe has any questions, comments, or areas of concern, please contact me at (314) 331-8855, or contact Meredith Hawkins Trautt (Tribal Liaison) at (314) 925-5031 or email Meredith.M.Trautt@usace.army.mil.

Sincerely,

SIGNED

Jennifer L. Riordan
Chief, Curation and Archives
Analysis Branch

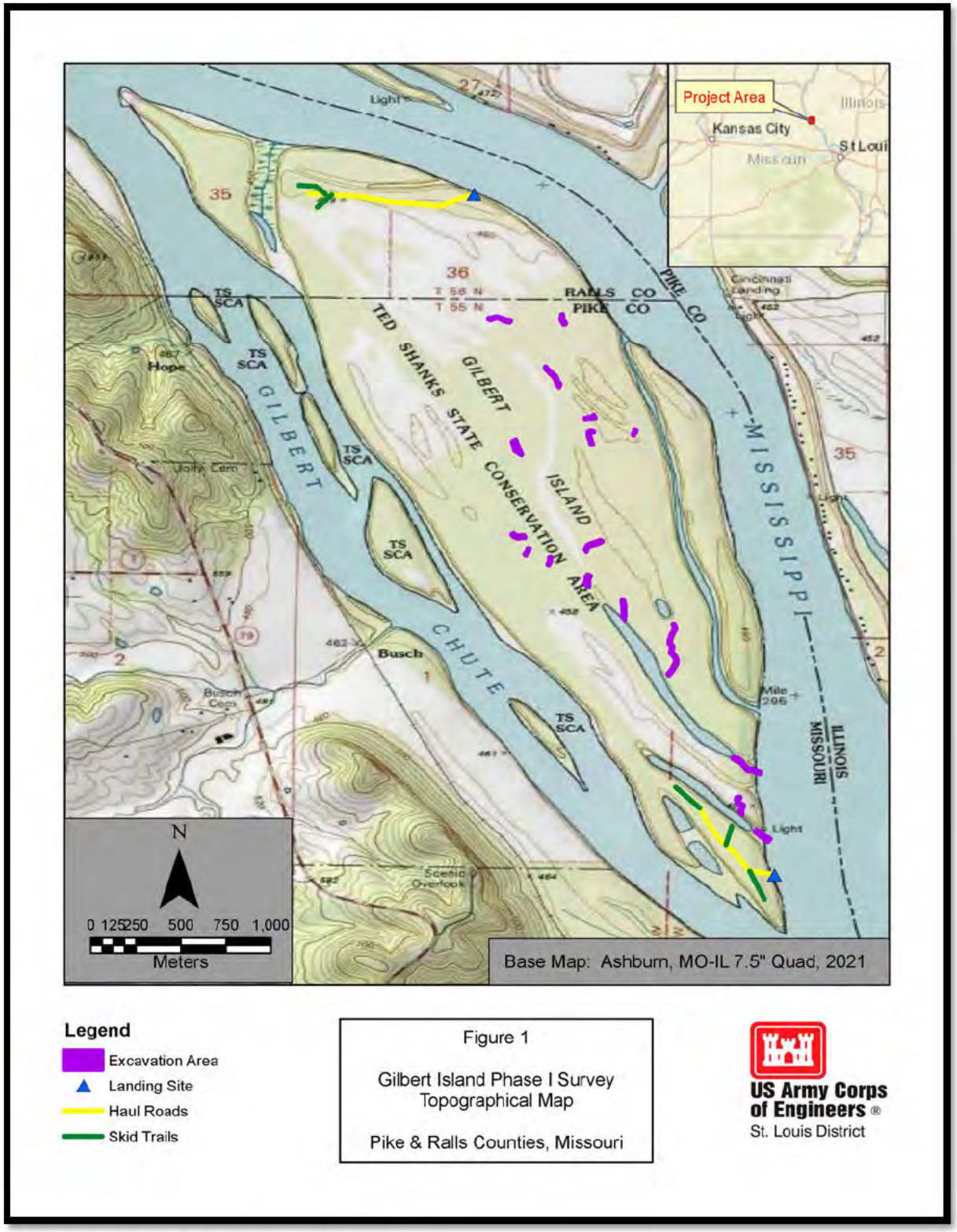


Figure 1. Location map of project areas.

Responses from Tribes

From: Douglas Taylor
To: Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: Gilbert Island Forest Management, Pike and Ralls Co., MO
Date: Tuesday, July 26, 2022 8:49:52 AM
Attachments: image001.png

Greetings,

Ref: Gilbert Island Forest Management, Pike and Ralls Co., MO

Thank you for including the Nottawaseppi Huron Band of the Potawatomi (NHBP) in your consultation process. From the description of your proposed project, the project is not within this Tribe's historic ceded territories or historical area of interest. We will therefore defer to other Tribes who have ceded territories within the project area.

Very Respectfully
Douglas Taylor

Douglas R. Taylor | Tribal Historic Preservation Officer (THPO) & NAGPRA Representatative
Pine Creek Indian Reservation
1301 T Drive S, Fulton, MI 49052
o: 269-704-8347 | [redacted] | f: 269-729-5920
[redacted] | www.nhbp-nsn.gov

NOTTAWASEPPI HURON BAND OF THE POTAWATOMI
A FEDERALLY RECOGNIZED TRIBAL GOVERNMENT

From: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Sent: Monday, July 25, 2022 3:18 PM
To: Douglas Taylor [redacted]
Subject: Gilbert Island Forest Management, Pike and Ralls Co., MO

***** EXTERNAL EMAIL WARNING - USE CAUTION *****

Dear Mr. Taylor,
Please see the attached letter pertaining to an archaeological survey for the proposed forest management on Gilbert Island, Pike and Ralls Co., MO. Per USACE's policy, a hard copy of this letter has been sent to Chairman Stuck.

Sincerely,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
MCX CMAC EC Z
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
[redacted]
Pronouns: she/her

From: Alan Kelley
To: Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject: [Non-DoD Source] Re: Gilbert Island Forest Management, Pike and Ralls Co., MO
Date: Tuesday, July 26, 2022 10:56:21 AM

Gilbert Island Forestry Management Survey, Pike and Ralls Counties, Missouri.

Meredith; I have no concerns on this project.

On Mon, Jul 25, 2022 at 2:20 PM Trautt, Meredith M CIV USARMY CEMVS (USA) [redacted] wrote:

> Dear Mr. Kelley,
>
> Please see the attached letter pertaining to an archaeological survey for the proposed forest management on Gilbert Island, Pike and Ralls Co., MO. Per USACE's policy, a hard copy of this letter has been sent to Chairman Rhodd and Mr. Lance Foster
>
> Sincerely,
>
> *Meredith Hawkins Trautt, M.S., RPA*
>
> Archaeologist and Tribal Liaison
>
> U.S. Army Corps of Engineers, St. Louis District
>
> MCX CMAC EC Z
>
> 1222 Spruce Street
>
> St. Louis, MO 63103
>
> Office: (314) 925-5031
>
> [redacted]
>
> [redacted]
>
> Pronouns: she/her

--
Alan Kelley
Deputy THPO
Iowa Tribe of KS & NE

3345 Thrasher RD
White Cloud KS 66094
785-351-0080

From: Benjamin Rhodd
To: Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: Gilbert Island Forest Management, Pike and Ralls Co., MO
Date: Friday, July 29, 2022 11:39:18 AM

Ms. Trautt,

Pursuant to consultation under Section 106 of the National Historic Preservation Act (1966 as amended) the Forest County Potawatomi Community (FCPC), a Federally Recognized Native American Tribe, reserves the right to comment on Federal undertakings, as defined under the act.

The Tribal Historic Preservation Office (THPO) staff has reviewed the information you provided for the project. Upon review of project perimeters, we request consultation and to remain as a consulting party as we have concerns regarding the extensiveness of the disturbance which will be occurring within the defined landscape of the island.

As a standard caveat sent with each proposed project reviewed by the FCPC THPO, the following applies. In the event an Inadvertent Discovery (ID) occurs at any phase of a project or undertaking as defined, and human remains or archaeological materials are exposed as a result of project activities, work should cease immediately, and the Tribe(s) must be included with the SHPO in any consultation regarding treatment and disposition of the find.

Thank you for protecting cultural and historic properties and if you have any questions or concerns, please contact me at the email or number listed below.

Respectfully,

Ben Rhodd, MS, RPA Tribal Historic Preservation Officer
Forest County Potawatomi
Historic Preservation Office
8130 Mish ko Swen Drive, P.O. Box 340, Crandon, Wisconsin 54520
P: 715-478-7354 [redacted] Main: 715-478-7474
Email: Benjamin.Rhodd@fcp-nsn.gov
www.fcpotawatomi.com

From: Trautt, Meredith M CIV USARMY CEMVS (USA) [redacted]
Sent: Monday, July 25, 2022 2:17 PM
To: Benjamin Rhodd [redacted]
Subject: Gilbert Island Forest Management, Pike and Ralls Co., MO

Dear Mr. Rhodd,
Please see the attached letter pertaining to an archaeological survey for the proposed forest management on Gilbert Island, Pike and Ralls Co., MO. Per USACE's policy, a hard copy of this letter has been sent to Chairman Daniels.

Sincerely,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
MCX CMAC EC Z
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
[redacted]
[redacted]
Pronouns: she/her

From: Benjamin Rhodd
To: Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: Gilbert Island Forest Management, Pike and Ralls Co., MO
Date: Thursday, September 1, 2022 1:24:44 PM

Ms. Trautt,

The FCPC HPO sends its regards for your follow-up call pertaining to Gilbert Island in the Mississippi River. The explanation of the timing of tree harvesting being conducted during the winter was sufficient for my concerns about sub-surface disturbance that occurs when such activities are conducted in the warmer clime months. However, your digression on that subject has alleviated my concerns and the project should proceed as planned from the FCPC HPO point of view. We have officially no additional issues with this project as proposed.

Thank you for your time and consideration of our interests.

Respectfully,

Ben Rhodd, MS, RPA Tribal Historic Preservation Officer
Forest County Potawatomi
Historic Preservation Office
8130 Mish ko Swen Drive, P.O. Box 340, Crandon, Wisconsin 54520
P: 715-478-7354 [redacted] Main: 715-478-7474
Email: [redacted]
www.fcpotawatomi.com

From: Trautt, Meredith M CIV USARMY CEMVS (USA) <Meredith.M.Trautt@usace.army.mil>
Sent: Monday, July 25, 2022 2:17 PM
To: Benjamin Rhodd[redacted]
Subject: Gilbert Island Forest Management, Pike and Ralls Co., MO

Dear Mr. Rhodd,
Please see the attached letter pertaining to an archaeological survey for the proposed forest management on Gilbert Island, Pike and Ralls Co., MO. Per USACE's policy, a hard copy of this letter has been sent to Chairman Daniels.

Sincerely,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
MCX CMAC EC Z

EASTERN SHAWNEE
CULTURAL PRESERVATION DEPARTMENT
70500 East 128 Road, Wyandotte, OK 74370

August 17, 2022
USACE St. Louis District
1222 Spruce Street
St. Louis, Missouri 63103-2833

RE: ***Gilbert Island Forestry Management Survey, Pike and Ralls County, MO***

Dear Ms. Trautt,

The Eastern Shawnee Tribe has received your letter regarding the above referenced project(s) within Pike and Ralls County, MO. The Eastern Shawnee Tribe is committed to protecting sites important to Tribal Heritage, Culture and Religion. Furthermore, the Tribe is particularly concerned with historical sites that may contain but not limited to the burial(s) of human remains and associated funerary objects.

As described in your correspondence, and upon research of our database(s) and files, we find our people occupied these areas historically and/or prehistorically. However, the project proposes **NO Adverse Effect** or endangerment to known sites of interest to the Eastern Shawnee Tribe. Please continue project as planned. However, should this project inadvertently discover an archeological site or object(s) we request that you immediately contact the Eastern Shawnee Tribe, as well as the appropriate state agencies (within 24 hours). We also ask that all ground disturbing activity stop until the Tribe and State agencies are consulted. Please note that any future changes to this project will require additional consultation.

In accordance with the NHPA of 1966 (16 U.S.C. § 470-470w-6), federally funded, licensed, or permitted undertakings that are subject to the Section 106 review process must determine effects to significant historic properties. As clarified in Section 101(d)(6)(A-B), historic properties may have religious and/or cultural significance to Indian Tribes. Section 106 of NHPA requires Federal agencies to consider the effects of their actions on all significant historic properties (36 CFR Part 800) as does the National Environmental Policy Act of 1969 (43 U.S.C. § 4321-4347 and 40 CFR § 1501.7(a). This letter evidences NHPA and NEPA historic properties compliance pertaining to consultation with this Tribe regarding the referenced proposed projects.

Thank you, for contacting the Eastern Shawnee Tribe, we appreciate your cooperation. Should you have any further questions or comments please contact our Office.
Sincerely,

Paul Barton

Paul Barton, Tribal Historic Preservation Officer (THPO)
Eastern Shawnee Tribe of Oklahoma
(918) 666-5151 Ext:1833
THPO@estoo.net

1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
[redacted]
[redacted]
Pronouns: she/her

From: Section106
To: Trautt, Meredith M CIV USARMY CEMVS (USA)
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: Gilbert Island Forest Management, Pike and Ralls Co., MO
Date: Wednesday, August 24, 2022 11:54:19 AM
Attachments: image001.png

This letter is in response to the above referenced project.

The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project. However, there is still potential for the discovery of unknown resources.

We have no issues or concerns at this time. Please continue with the project as planned, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume immediate consultation under such a circumstance.

If you have any questions, you may contact me via email at [redacted]

Thank you for giving us the opportunity to comment on this project.

Sincerely,

Erin Paden
TRIBAL HISTORIC PRESERVATION SPECIALIST
Office: (918) 542-2441, x140
Email: [redacted]
29 S Hwy 69A
Miami, OK 74354
shawnee-tribe.com

From: Trautt, Meredith M CIV USARMY CEMVS (USA) [redacted]
Sent: Monday, July 25, 2022 2:18 PM
To: Section106 [redacted]
Subject: Gilbert Island Forest Management, Pike and Ralls Co., MO

Dear Ms. Tipton,
Please see the attached letter pertaining to an archaeological survey for the proposed forest management on Gilbert Island, Pike and Ralls Co., MO. Per USACE's policy, a hard copy of this letter has been sent to Chief Barnes.

Sincerely,

Meredith Hawkins Trautt, M.S., RPA
Archaeologist and Tribal Liaison
U.S. Army Corps of Engineers, St. Louis District
MCX CMAC EC Z
1222 Spruce Street
St. Louis, MO 63103
Office: (314) 925-5031
[redacted]
[redacted]
Pronouns: she/her

Appendix 5

Regulatory Coordination

2022 Nationwide Permit Summary

U.S Army Corps
Of Engineers

Issued: February 25, 2022 **Expires: March 14, 2026**

No. 27. Aquatic Habitat Restoration, Enhancement, and Establishment Activities

(NWP Final Notice, 86 FR, 73576)

Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.

To be authorized by this NWP, the aquatic habitat restoration, enhancement, or establishment activity must be planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference. An ecological reference may be based on the characteristics of one or more intact aquatic habitats or riparian areas of the same type that exist in the region. An ecological reference may be based on a conceptual model developed from regional ecological knowledge of the target aquatic habitat type or riparian area.

To the extent that a Corps permit is required, activities authorized by this NWP include, but are not limited to the removal of accumulated sediments; releases of sediment from reservoirs to maintain sediment transport continuity to restore downstream habitats; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms are removed; the installation of current deflectors; the enhancement, rehabilitation, or re-establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to enhance, rehabilitate, or re-establish stream meanders; the removal of stream barriers, such as undersized culverts, fords, and grade control structures; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to restore or enhance wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; coral restoration or relocation activities; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

This NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services.

Except for the relocation of non-tidal waters on the project site, this NWP does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type (e.g., the conversion of a stream to wetland or vice versa) or uplands. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type. This NWP does not authorize stream channelization. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments.

Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services.

Reversion. For enhancement, restoration, and establishment activities conducted: (1) In accordance with the

terms and conditions of a binding stream or wetland enhancement or restoration agreement, or a wetland establishment agreement, between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperating agencies; (2) as voluntary wetland restoration, enhancement, and establishment actions documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) on reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the applicable state agency, this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or establishment activities). The reversion must occur within five years after expiration of a limited term wetland restoration or establishment agreement or permit, and is authorized in these circumstances even if the discharge of dredged or fill material occurs after this NWP expires. The five-year reversion limit does not apply to agreements without time limits reached between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS, or an appropriate state cooperating agency. This NWP also authorizes discharges of dredged or fill material in waters of the United States for the reversion of wetlands that were restored, enhanced, or established on prior-converted cropland or on uplands, in accordance with a binding agreement between the landowner and NRCS, FSA, FWS, or their designated state cooperating agencies (even though the restoration, enhancement, or establishment activity did not require a section 404 permit). The prior condition will be documented in the original agreement or permit, and the determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before conducting any reversion activity, the permittee or the appropriate Federal or state agency must notify the district engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps Regulatory requirements are applicable to that type of land at the time. The requirement that the activity results in a net increase in aquatic resource functions and services does not apply to reversion activities meeting the above conditions. Except for the activities described above, this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion.

Reporting. For those activities that do not require pre-construction notification, the permittee must submit to the district engineer a copy of: (1) The binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement, or a project description, including project plans and location map; (2) the NRCS or USDA Technical Service Provider documentation for the voluntary stream enhancement or restoration action or wetland restoration, enhancement, or establishment action; or (3) the SMCRA permit issued by OSMRE or the applicable state agency. The report must also include information on baseline ecological conditions on the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats. These documents must be submitted to the district engineer at least 30 days prior to commencing activities in waters of the United States authorized by this NWP.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing any activity (see general condition 32), except for the following activities:

(1) Activities conducted on non-Federal public lands and private lands, in accordance with the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies;

(2) Activities conducted in accordance with the terms and conditions of a binding coral restoration or relocation agreement between the project proponent and the NMFS or any of its designated state cooperating agencies;

(3) Voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to Start Printed Page 73578 NRCS Field Office Technical Guide standards; or

(4) The reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency.

However, the permittee must submit a copy of the appropriate documentation to the district engineer to fulfill the reporting requirement. (Authorities: Sections 10 and 404).

Note: This NWP can be used to authorize compensatory mitigation projects, including mitigation banks and in-lieu fee projects. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition, since compensatory mitigation is generally intended to be permanent.

C. Nationwide Permit General Conditions

(NWP Final Notice, 86 FR 2867-2874)

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse

effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Structures and Fills. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7

consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence

from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: No historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer

either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-

construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification

request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP

until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a

mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce

the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction

notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) All NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they

individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal

adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure,

or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those

aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian tribe or individual; or (2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a “water of the United States.” If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

US Army Corps
of Engineers
Kansas City District

STATE OF MISSOURI
2021 NATIONWIDE PERMIT REGIONAL CONDITIONS

For All Nationwide Permits

1. Stream Crossings. In addition to requirements of General Condition 2 and General Condition 9 of the Nationwide Permits, the following guidelines for stream crossings apply for regulated activities in waters of the United States (WOTUS). The guidelines are available at:
https://www.nwk.usace.army.mil/Portals/29/docs/regulatory/NWP/2021/MO/MORC1Streams.pdf

- Corps Districts may waive RC 1 when project site geomorphology (i.e. bedrock, gradient) or existing alterations (i.e. adjacent impoundment, as part of a dry detention basin) creates conflict with the guidelines. The applicant must provide Pre-construction Notification (PCN) to the District Engineer for any waiver request.

2. Seasonal Restrictions for Activities Proposed in Spawning Areas. In addition to the requirements of General Condition 3 of the Nationwide Permits, the following specific seasonal restrictions apply for regulated activities in WOTUS. Between the closed dates listed in the Missouri Combined Stream Spawning List, the permittee must not excavate from or discharge into the listed waters. The list of waters with seasonal restrictions is available on request from the Corps or at:
https://www.nwk.usace.army.mil/Portals/29/docs/regulatory/NWP/2021/MO/MORC2SpawningArea.pdf

- Corps Districts may waive RC 2 when the applicant demonstrates imminent threats to public safety and health, or to property. The Corps will consult with the U.S. Fish and Wildlife Service and Missouri Department of Conservation before granting the waiver and may add additional special conditions to protect aquatic life during the operation. The applicant must PCN to the District Engineer for any waiver request.

3. Suitable Material. In addition to the specific examples in General Condition 6 of the Nationwide Permits, the following materials are not suitable for fill activities in WOTUS: garbage, tires, treated lumber products that do not comply with the Registration Documents issued by the U.S. Environmental Protection Agency (USEPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and that are not in accordance with standards issued by American Wood Protection Association of the International Code Council, liquid concrete not poured into forms, grouted riprap, bagged cement and sewage or organic waste.

- Broken concrete used as bank stabilization must be reasonably well graded, consisting of pieces varying in size from 20 pounds up to and including at least 150-pound pieces to withstand expected high flows. Applicants must break all large slabs to conform to the well graded requirement. Generally, the maximum weight of any piece should not be more than 500 pounds. Gravel and dirt should not exceed 15% of the total fill volume when using broken concrete as fill. All protruding reinforcement rods, trash, asphalt, and other extraneous materials must be removed from the broken concrete prior to placement in WOTUS.

4. Priority Watersheds. The applicant must provide PCN to the District Engineer for any regulated activity in a priority watershed. The list of priority watersheds requiring notification is available on request from the Corps or at:
https://www.nwk.usace.army.mil/Portals/29/docs/regulatory/NWP/2021/MO/MORC4PriorityWaters.pdf

5. Sensitive Aquatic Species. The applicant must provide PCN to the District Engineer for any regulated activity in waters listed at: https://www.nwk.usace.army.mil/Portals/29/docs/regulatory/NWP/2021/MO/MORC5AquaSpecies.pdf. The submitted PCN will be coordinated in accordance with General Condition 32(d) with the U.S. Fish and Wildlife Service as determined appropriate by the Corps.

For Specific Nationwide Permits:

6. Lake of the Ozarks. The applicant must provide a PCN to the District Engineer for any regulated activity associated with Nationwide Permit 12, 57, and 58 within Lake of the Ozarks. A copy of this notification must also concurrently be sent to Ameren Missouri. Nationwide Permits 29 and 44 are revoked in the Lake of the Ozarks. The Corps and Ameren Missouri, regardless of the request to use any Nationwide Permit, may verify the activity under the provisions of Regional General Permit 38M, which can be found at https://www.nwk.usace.army.mil/Missions/Regulatory-Branch/General-Permits/. Additional information on Ameren Missouri and Lake of the Ozarks permit requirements can be found at the following webpage: https://www.ameren.com/missouri/residential/lake-of-the-ozarks/permitting-process-forms.

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Note: PCN to the District Engineer must be in accordance with General Condition 32 of the Nationwide Permits.

Missouri Department of Natural Resources

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION
2021 GENERAL AND SPECIFIC CONDITIONS

Water Protection Program 10/2021

Division of Environmental Quality PUB2947

Consistent with Section 401 of the Clean Water Act (CWA), 33 U.S.C. § 1341, the Missouri Department of Natural Resources (Department) has designed these precertified conditions to ensure activities carried out in Missouri pursuant to Nationwide Permits (NWPs) authorized by the U.S. Army Corps of Engineers (USACE) will comply with Missouri water quality requirements. Unless otherwise stated, these conditions are in addition to, not a replacement for, any federal requirements or conditions.

The conditions outlined in this programmatic WQC apply to those authorized projects where the project proponent has chosen to accept these conditions instead of pursuing an individual CWA Section 401 Water Quality Certification (WQC) for the following NWPs:

- Only General Conditions apply to projects authorized by NWPs 5, 6, 7, 13, 15, 16, 18, 19, 22, 23, 25, 27, 29, 30, 31, 36, 39, 40, 42, 43, 45, 46, 54, and 59.
- Both General and Specific Conditions apply to projects authorized by NWPs 3, 4, 12, 14, 20, 33, 41, 53, 57, and 58.

Alternatively, a project proponent may apply to the Department for individual WQC if it does not wish to accept the conditions outlined in this document.

NWPs 1, 2, 8, 9, 10, 11, 28, and 35 authorize projects pursuant to Section 10 of the Rivers and Harbors Act of 1899 only. These NWPs do not require CWA Section 401 WQC because they authorize activities which, in the opinion of the USACE, could not reasonably be expected to result in a discharge into waters of the United States. An activity needing only a Section 10 permit may require a WQC if that activity can reasonably be expected to result in any discharge either during construction or operation of the facility. Thus, if the USACE determines the activity is likely to result in a discharge during construction or operation, the Department has discretion to require a WQC for the Section 10 activity. The USACE may advise a Section 10 permit project proponent that it might need a WQC if there is a reasonable expectation that a discharge will occur either during the construction or operation of the project.

Pursuant to Section 644.037, RSMo, the Department shall certify without conditions NWPs as they apply to impacts on wetlands in Missouri. Because NWPs are minimal impact, Missouri does not have water quality standards specific to wetlands, and only the general criteria apply, discharges to wetlands from projects authorized by NWPs will comply with water quality requirements.

Pursuant to Section 644.038, RSMo, the Department shall certify without conditions all NWPs for impacts in all waters of the state for the construction of highways and bridges approved by the Missouri Highway and Transportation Commission. A Memorandum of Understanding between the Missouri Departments of Natural Resources and Transportation contains the requirements by which the Missouri Department of Transportation will design and construct such projects in order to protect the water quality of waters of the state. Therefore, as a result of this side agreement, the Department grants programmatic WQC for all NWPs without conditions for the construction of highways and bridges approved by the Missouri Highway and Transportation Commission, because any discharges from these projects will comply with water quality requirements.

GENERAL CONDITIONS

1. A stream's pattern, profile, and dimension, including but not limited to sinuosity, slope, and channel width, shall be maintained as much as practicable. Streambed gradient shall not be adversely impacted during project construction. No project shall accelerate bed or bank erosion. This will ensure compliance with the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

2. Channelization of streams is not allowed under this precertification. Channelization includes but is not limited to reducing the length of the channel, widening the channel for increased water storage or flow, and/or construction of hard structures which concentrate flow. Unless necessary for a stream crossing associated with infrastructure projects and contained within an associated right-of-way, construction easement, or permanent easement, bank stabilization activities only along one bank of a stream are permitted, including but not limited to bank sloping and riprapping. The redirection of flow by excavation of the opposite bank or a streambed is considered a channel modification and is not authorized by this WQC. This will ensure compliance with the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

3. No new or expanded wet stormwater retention basins or similar impoundment structures may be constructed unless they are located off-channel. In-channel dry stormwater detention basins are allowable if the stream channel is either temporarily or not adversely affected by the basin. This will ensure compliance with the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

4. Only clean, nonpolluting fill shall be used. The following materials are not suitable where contact with water is expected and shall not be used due to their potential to cause violations of the general criteria of Missouri's Water Quality Standards [10 CSR 20-7.031(4)]:
   a. Earthen fill, gravel and broken concrete where the material does not meet the Suitable Material specifications stated in the "Missouri Nationwide Permit Regional Conditions" (https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/2662/) in locations where erosive flows are expected to occur on a regular basis, such as streambanks and/or lake shorelines.
   b. Asphalt.
   c. Concrete with exposed rebar.
   d. Tires, vehicles or vehicle bodies, and construction or demolition debris are solid waste and are excluded from placement in the waters of the state. Properly sized, broken concrete without exposed rebar is allowed.
   e. Liquid concrete, including grouted riprap, if not placed in forms as part of an engineered structure.
   f. Any material containing chemicals that would result in violation of Missouri Water Quality Standards general criteria [10 CSR 20-7.031(4)] or specific criteria [10 CSR 20-7.031(5)].

5. Waste concrete or concrete rinsate shall be disposed of in a manner that does not result in discharge to any jurisdictional water ways. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from unsightly bottom deposits [10 CSR 20-7.031(4)(A)]; substances resulting in toxicity to human, animal, or aquatic life [10 CSR 20-7.031(4)(D)]; and physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

6. Missouri Water Quality Standards antidegradation requirements dictate all appropriate and reasonable Best Management Practices related to erosion and sediment control, project stabilization and prevention of water quality degradation are applied and maintained; for example, preserving vegetation, streambank stability and basic drainage [10 CSR 20-7.031(3)(D)]. Best Management Practices shall be properly installed prior to conducting authorized activities and maintained, repaired and/or replaced as needed during all phases of the project to limit the amount of discharge of water contaminants to waters of the state. The project shall not involve more than normal stormwater or incidental loading of sediment caused by project activities so as to comply with Missouri's general water quality criteria [10 CSR 20-7.031(4)]; https://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-7a.pdf

7. Clearing of vegetation and trees shall be the minimum necessary to accomplish the activity except for the removal of invasive or noxious species and placement of ecologically beneficial practices. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B)].

8. Care shall be taken to keep machinery out of the water way as much as possible. If work in the water way is unavoidable, it shall be performed in a way that minimizes the duration and amount of any disturbance to banks, substrate and vegetation to prevent increases in turbidity. Fuel, oil and other petroleum products, equipment, construction materials and any solid waste shall not be stored below the ordinary high water mark at any time or in the adjacent flood-prone areas beyond normal working hours. All precautions shall be taken to avoid the release of wastes or fuel to streams and other adjacent waters as a result of this operation. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B]) and Missouri Water Quality Standards general criteria requiring waters be free from substances preventing beneficial uses [10 CSR 20-7.031(3)(A)]; substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)]; and physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

9. Petroleum products spilled into any water or on the banks where the material may enter waters of the state shall be immediately cleaned up and disposed of properly. Any such spills of petroleum shall be reported as soon as possible, but no later than 24 hours after discovery to the Department of Natural Resources' Environmental Emergency Response number at 573-634-2436 or website at http://dnr.mo.gov/env/esp/esp-eer.htm. This will ensure compliance with Missouri Environmental Improvement Authority to provide for the conservation of state water resources by the prevention of pollution and proper methods of disposal [Section 260.015, RSMo] and Missouri Water Quality Standards general criteria requiring waters be free from substances that prevent maintenance of beneficial uses; cause unsightly bottom deposits, color, turbidity or toxicity; and/or impair the natural biological community [10 CSR 20-7.031(4)(A), -(B), and -(H)].

10. All efforts shall be made to minimize exposure of unprotected soils. To the best of the project proponent's ability, project activity shall be conducted at times of little or no rainfall to limit the amount of overland flow and sediment disturbance caused by heavy equipment. This will ensure compliance with Missouri antidegradation requirements for Best Management Practices [10 CSR 20-7.031(3)(B)].

11. Programmatic WQC is denied for any NWP issued on a water that is listed for a sediment-related impairment, aquatic habitat alteration, channelization, or unknown impairment as listed in the most current Water Quality Report (Section 305(b) Report) at https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters. Although intended to result in minimal impacts, NWP authorizations in these waters may contribute to impairments and result in noncompliance with Missouri's general water quality criteria requiring waters be free from physical, chemical, and hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)] or exceedance of Missouri Water Quality Standards specific criteria [10 CSR 20-7.031(5)]. Since WQC General or Specific Conditions cannot be established to address all concerns from the variety of impairments and activities authorized by NWPs, individual review for WQC will be required. Requirements for individual WQC will be determined on a case-by-case basis based on the specific impairments, and additional testing, design, disposal, or BMP considerations may be required.

    To determine the location of the waters noted above, the Department's geospatial data is available upon request, and all published data is available on the Missouri Spatial Data Information Services website at msdis.missouri.edu/. Additional information to identify the project location, including stream reaches with listed impairments or special water designations, may be obtained from the Department's Water Protection Program at 573-522-4502.

12. Programmatic WQC is denied for projects authorized by NWPs 17, 21, 32, 34, 37, 38, 44, 48, 49, 50, 51, 52, 55, and 56. Although intended to result in minimal impacts, these NWPs authorize activities that may contribute to impairments and result in noncompliance with Missouri's general water quality criteria [10 CSR 20-7.031(4)], including the requirement that all waters of the state shall be free from physical, chemical, and hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)], or noncompliance with Missouri's specific water quality criteria [10 CSR 20-7.031(5)]. Because programmatic WQC General or Specific Conditions cannot be established to address all concerns from the variety of impairments and activities authorized by these NWPs, the Department requires individual review for WQC for these NWPs. Requirements for individual WQC will be determined on a case-by-case basis based on the specific projects, and additional testing, design, disposal, or BMP considerations may be required.

13. Mitigation for loss of stream resources should be in conformance with the compensatory mitigation guidance currently approved for use in Missouri, including guidance provided by the Missouri Stream Mitigation Method. Stream impacts shall require compensatory mitigation with only instream or riparian corridor credits. Compensatory mitigation shall be within the state of Missouri. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] Mitigation guidance documents can be located online at www.nwk.usace.army.mil/Missions/RegulatoryBranch/StateofMissouri.

SPECIFIC CONDITIONS

14. Nationwide Permit 3 *Maintenance*
    a. Silt, sediment, and debris removal shall be limited to a maximum of 200 LF upstream and 200 LF downstream of structures. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)].

15. Nationwide Permit 4 *Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities*
    Any inorganic or extraneous debris, such as may be found on Christmas trees shall be removed to qualify as clean, nonpolluting fill. This will ensure compliance with the Missouri's Water Quality Standards general criteria that waters shall be free from unsightly bottom deposits [10 CSR 20-7.031(4)(A)] and solid waste [10 CSR 20-7.031(4)(I)].

16. Nationwide Permit 12 *Oil and Natural Gas Pipeline Activities*,
    Nationwide Permit 57 *Electric Utility Line and Telecommunications Activities*, and
    Nationwide Permit 58 *Utility Line Activities for Water and Other Substances*
    a. For project crossings that must disturb a water body, work shall be conducted in such a manner as to seal off the work area from flow and minimize sediment transport. Material resulting from the activity shall not be sidecast into waters of the state for more than one month. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B) and general criteria requiring waters be free from substances that prevent maintenance of beneficial uses; cause unsightly color, turbidity, or toxicity; and/or impair the natural biological community [10 CSR 20-7.031(4)(B), -(C), and -(H)].
    b. If Horizontal Directional Drilling is used, drilling mud and/or other materials shall not be discharged into waters of the state. Best Management Practices shall be implemented to prevent possible discharges from reaching waters of the state. In the event materials are inadvertently discharged to waters of the state, notification to the Department of Natural Resources is required within 24 hours by calling 573-634-2436. This will ensure compliance with Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B)] and Missouri Environmental Improvement Authority [Section 260.015, RSMo] to provide for the conservation of state air, land and water resources by the prevention of pollution and proper methods of disposal.
    c. Project crossings shall be placed as close to perpendicular as possible and shall be limited to a maximum crossing length of no more than one and one-half times the width of the stream. This will ensure compliance with the Missouri antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and Best Management Practices [10 CSR 20-7.031(3)(B)].

17. Nationwide Permit 14 *Linear Transportation Projects*
    a. The permittee shall propose and employ measures to mitigate the removal of impounded sediment (e.g., sand, gravel) in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)] and physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)]. Accumulated gravel may be allowed to naturally deposit into downstream plunge pool voids. Consultation with a hydrologist or other scientist is recommended if the amount of accumulated unconsolidated gravel exceeds the volume of plunge pool voids.
    b. Where this NWP is used to authorize bridge and culvert structures, stream channel work shall be limited to a maximum of 200 feet upstream and a maximum of 200 feet downstream of the bridge or culvert. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a water way. This will ensure compliance with the Missouri antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and the Missouri Water Quality Standards general criterion requiring waters be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

18. Nationwide Permit 20 *Response Operations for Oil and Hazardous Substances*
    Oil and hazardous substance releases shall be reported to the Department of Natural Resources' Environmental Emergency Response number at 573-634-2436. Continue to report updates with regard to the containment and cleanup of releases. This will ensure compliance with Missouri Environmental Improvement Authority [Section 260.015, RSMo] to provide for the conservation of state water resources by the prevention of pollution and proper methods of disposal.

19. Nationwide Permit 33 *Temporary Construction, Access and Dewatering*
    a. The use of this NWP shall be limited to impacts of six months or less in duration. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirements for maintenance and protection of designated uses [10 CSR 20-7.031(3)]
    b. Any removal of accumulated sediment (e.g., sand, gravel) upstream of a proposed project shall be limited to the quantity necessary to relieve any obstruction or to protect downstream habitat. The permittee must propose and employ measures to mitigate the removal of impounded sediment in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)] and physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].

20. Nationwide Permit 41 *Reshaping Existing Drainage Ditches*
    In-channel disposal of excavated material not used for reshaping activities is prohibited. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B) and general criteria requiring waters be free from substances that prevent maintenance of beneficial uses; cause unsightly color, turbidity or toxicity; and/or impair the natural biological community [10 CSR 20-7.031(4)(B), -(C), and -(H)].

21. Nationwide Permit 53 *Removal of Low-Head Dams*
    a. The permittee must propose and employ measures to mitigate the removal of impounded sediment (e.g., sand, gravel) in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)] and physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)]. Accumulated gravel may be allowed to naturally deposit into downstream plunge pool voids. Consultation with a hydrologist or other scientist is recommended if the amount of accumulated unconsolidated gravel exceeds the volume of plunge pool voids.
    b. Stream channel work shall be limited to a maximum of 100 feet upstream and a maximum of 100 feet downstream of the dam. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)].
    c. Restoration of the stream channel to its former, natural state is authorized. Individual WQC is required for non-natural channel modifications. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(H)]. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a water way.

Unless the Department agrees to an alternative, requests for WQC should be sent electronically to wpsc401cert@dnr.mo.gov [Section 644.026.1(26), RSMo and 10 CSR 20-6.060(5)]. A request for WQC shall include all required information for a complete request for certification in compliance with 40 CFR Part 121. The Department may request additional information prior to providing a WQC decision to ensure Missouri water quality requirements are met, such as a response to comments from the Department, other resource agencies, and/or the public; planned compensatory mitigation; and/or an analysis of practicable alternatives.

An issued WQC, whether programmatically or individually issued, becomes part of and expires with the Section 404 and/or Section 10 permit unless explicitly stated in the WQC.

Acquisition of NWPs and the attendant WQCs shall not be construed or interpreted to imply the requirements for other permits are replaced or superseded, including Clean Water Act Section 402 National Pollutant Discharge Elimination System Permits required under Missouri Clean Water Law [Sections 644.026.1 and 644.051, RSMo] for land disturbance or return water from material deposition. Permits or any other requirements shall remain in effect. Project proponents with questions are encouraged to contact the Department of Natural Resources' regional office in the project area. A regional office map with contact information is located at https://dnr.mo.gov/about-us/division-environmental-quality/regional-office.

Some localities are covered pursuant to Municipal Separate Storm Sewer System Permits with measures to control and possibly treat stormwater. If the project is located within one of these localities, project proponents must comply with all stormwater requirements of the locality's Stormwater Management Plan and any related ordinances. This ensures compliance with CWA Section 402 National Pollutant Discharge Elimination System Permit requirements and the Missouri Clean Water Law [Chapter 644, RSMo].

The Department encourages, but does not require, permittees to consider environmentally-friendly design techniques to include stormwater management strategies that maintain or restore the original site hydrology through infiltration, evaporation, or reuse of stormwater. Designs might include using porous pavement or creating vegetated swales and/or rain gardens. More information can be found at these websites: www.epa.gov/owow/NPS/lid/ and www.lid-stormwater.net/lid_techniques.htm.

The Department encourages the use of native vegetation to protect impacted areas from future water quality concerns. Native vegetation has evolved with Missouri's geology, climate, and wildlife to occur within a region as a result of natural processes rather than human intervention. For areas where direct impacts to streams are to be avoided, the Department recommends a minimum riparian buffer strip width of 50 feet as measured from top of bank.

The Department encourages the use of Horizontal Directional Drilling for stream and wetland crossings when practicable. If properly utilized, Horizontal Directional Drilling is an alternative to more traditional, open-trench methods and can result in significant minimization and/or complete avoidance of aquatic resource impacts.

The following publication provides guidance on how to protect water quality through Best Management Practices on project sites. For more information, please read: "Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas" dated January 2011 and located online at https://dnr.mo.gov/document-search/protecting-water-quality-field-guide.

To help determine if a proposed activity could encounter species or sites of conservation concern within or near a project, including those that have not been recorded, the project proponent is encouraged to visit:

- Missouri Department of Conservation's "Natural Heritage Review" website at https://naturalheritagereview.mdc.mo.gov/.
- U.S. Fish and Wildlife Service's "Information, Planning and Conservation" website at http://ecos.fws.gov/ipac/.

If the proposed project encounters and will potentially affect a species of concern, please promptly report it to the Missouri Department of Conservation and the U.S. Fish and Wildlife Service.

For more information
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
wpsc401cert@dnr.mo.gov
800-361-4827 or 573-522-4502
https://dnr.mo.gov/water

Appendix 6

HTRW Coordination

From: Greeling, Benjamin A CIV USARMY CEMVS (USA)
To: Hill, Evan B CIV USARMY CEMVP (USA); Schepker, Travis J CIV USARMY CEMVS (USA)
Subject: RE: Gilbert Island shapefiles
Date: Friday, August 26, 2022 12:45:56 PM

Made a small edit near the end.

HTRW Coordination

The U.S. Army Corps of Engineers (USACE) regulations (ER-1165-2-132, ER 200-2-3) and District policy requires procedures be established to facilitate early identification and appropriate consideration of potential HTRW in feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting Phase I Environmental Site Assessment (ESA). USACE specifies that these assessments follow the process/standard practices for conducting Phase I ESA's published by the American Society for Testing and Materials (ASTM). The purpose of a Phase I ESA is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid known HTRW sites. However, the USACE Environmental Quality Section should be contacted immediately if HTRW material is encountered at any point during construction activities.
A Phase I study, dated May 16 2022, was conducted for this project and identified no RECs, therefore a Phase II study was not recommended. There is still a potential of encountering hazardous substances during the proposed actions. If HTRW material is encountered at any point during the proposed FSI activities, the USACE Environmental Quality Section should be contacted to assess the conditions. **USACE does not and cannot represent that the site contains no hazardous waste or material, including petroleum products.**

From: Hill, Evan B CIV USARMY CEMVP (USA)[redacted]
Sent: Thursday, August 25, 2022 10:09 AM
To: Schepker, Travis J CIV USARMY CEMVS (USA)[redacted]Greeling, Benjamin A CIV USARMY CEMVS (USA)[redacted]
Subject: RE: Gilbert Island shapefiles

Hi Travis and Ben,

I am finishing up the NEPA doc for the Gilbert Island Forestry project and I wanted to get some feedback from you guys on my HTRW paragraph.
What I have so far is:
“””

The U.S. Army Corps of Engineers (USACE) regulations (ER-1165-2-132, ER 200-2-3) and District policy requires procedures be established to facilitate early identification and appropriate consideration of potential HTRW in feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting Phase I Environmental Site Assessment (ESA). USACE specifies that these assessments follow the process/standard practices for conducting

Phase I ESA's published by the American Society for Testing and Materials (ASTM). The purpose of a Phase I ESA is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid known HTRW sites. However, the USACE Environmental Quality Section should be contacted immediately if HTRW material is encountered at any point during construction activities.
A Phase I study was not recommended for this project because the likelihood of hazardous substances adversely affecting the project area is very low. There is still a potential of encountering hazardous substances during the proposed actions. If HTRW material is encountered at any point during the proposed FSI activities, the USACE Environmental Quality Section should be contacted to assess the conditions. **USACE does not and cannot represent that the site contains no hazardous waste or material, including petroleum products.** There are no HTRW concerns associated with the FSI alternative.
“””
Feel free to chop it up and revise as needed!

Thanks,

Evan Hill
Environmental Compliance Section
Wildlife Biologist
U.S. Army Corps of Engineers
1222 Spruce St
St. Louis, MO 63103
Work: (314) 925-5004
[redacted]

From: Schepker, Travis J CIV USARMY CEMVS (USA) [redacted]
Sent: Friday, June 10, 2022 2:48 PM
To: Greeling, Benjamin A CIV USARMY CEMVS (USA) [redacted] Hill, Evan B CIV USARMY CEMVP (USA) [redacted] Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Cc: Smith, Mark A CIV USARMY CEMVS (USA) [redacted] Hopfinger, Christopher J CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

Concur

From: Greeling, Benjamin A CIV USARMY CEMVS (USA) [redacted]
Sent: Friday, June 10, 2022 2:43 PM
To: Hill, Evan B CIV USARMY CEMVP (USA) [redacted] Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Cc: Smith, Mark A CIV USARMY CEMVS (USA) [redacted] Schepker, Travis J

CIV USARMY CEMVS (USA) [redacted] Hopfinger, Christopher J CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

Travis may correct me, but I believe we have no more need to visit the island.

Thanks,
Ben

From: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Sent: Friday, June 10, 2022 1:57 PM
To: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Cc: Smith, Mark A CIV USARMY CEMVS (USA) [redacted] Greeling, Benjamin A CIV USARMY CEMVS (USA) [redacted] Schepker, Travis J CIV USARMY CEMVS (USA) [redacted] Hopfinger, Christopher J CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

Thanks Matt,

I am copying this with Ben, Travis, and Chris to see if they have a need for more field work as well. If so, maybe their schedules align with yours and they can accompany you to the island.

Ben, Travis and/or Chris: do you need to perform additional field work on Gilbert Island? If so, do you have availability on the same days that Matt does (see the below email). Matt is available on June 13-15, June 27 and 28, and June 30th.

Thanks all!

Evan Hill
Environmental Compliance Section
Wildlife Biologist
U.S. Army Corps of Engineers
1222 Spruce St
St. Louis, MO 63103
Work: (314) 925-5004
[redacted]

From: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Sent: Thursday, June 9, 2022 10:17 AM
To: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Cc: Smith, Mark A CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

The original estimate for this project was having two archaeologists go out to the island for 3 to 5 days and would probably just stay at a hotel in Hannibal since its only about a half hour away from the boat ramp parking lot. But I didn't know how that would work with the logistics of getting someone with a boat for multiple days. The other option is I can Maxi-Flex my way into having more actual time on the island each day and just ride up there from the Rivers Project Office each day. And there is the Lock and Dam 22 not too far upstream from Gilbert Island but I didn't know if they have staff with boats that can land on the island or if that's a bigger headache since I think that Lock and Dam is a different district. Right now the only dates I have available this month are June 13th to the 15th, June 27th and the 28th, and then again on June 30th.

From: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Sent: Tuesday, May 31, 2022 1:55 PM
To: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Cc: Smith, Mark A CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

If you do need to get out to the island again, we can see if Brian Stoff can take you out there again. Just let me know and I'll email him. Thanks!

Evan Hill
Environmental Compliance Section
Wildlife Biologist
U.S. Army Corps of Engineers
1222 Spruce St
St. Louis, MO 63103
Work: (314) 925-5004
[redacted]

From: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Sent: Tuesday, May 31, 2022 1:54 PM
To: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Cc: Smith, Mark A CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

Yep, that file had all the excavation areas, haul roads, and skid trails. I was just looking at all of it to figure out how much work we would need to do on the cultural end of it since some of those areas were actually part of the river in the 1940's. I'll check in with Mark to see what all he thinks we need to do and how to coordinate the fieldwork since we'd need a boat to get to the island.

From: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Sent: Tuesday, May 31, 2022 11:39 AM
To: Stoff, Brian W CIV USARMY CEMVS (USA) [redacted] Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]

Subject: RE: Gilbert Island shapefiles

Hi Matt,

Did the file Brian sent on 12 May have the shapefiles you needed?

Also,
Do you need to schedule some more field work on Gilbert Island before you complete your Cultural Review? If so, we can discuss the timing of that work here with Brian.

Thanks,

Evan Hill
Environmental Compliance Section
Wildlife Biologist
U.S. Army Corps of Engineers
1222 Spruce St
St. Louis, MO 63103
Work: (314) 925-5004
[redacted]

From: Stoff, Brian W CIV USARMY CEMVS (USA) [redacted]
Sent: Thursday, May 12, 2022 6:59 AM
To: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted] Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

This is a new zip folder including all of the excavation sites, landing sites, haul roads, skid trails, and LiDAR for the site.

From: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Sent: Wednesday, May 11, 2022 7:19 AM
To: Hill, Evan B CIV USARMY CEMVP (USA) [redacted] Stoff, Brian W CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

That's the folder I already had. I can't find the haul roads/skid trails, landing sites, Lidar, or the 17 drainage improvement excavation areas. The 17 excavation areas were on that Lidar map we had at the site visit. That's the only place I've seen those excavation polygons. The FMP Gilbert Island 03Mar20 report has the excavation areas as red X's and that's the report I found the haul roads/skid trails/landing area maps.

From: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Sent: Tuesday, May 10, 2022 8:01 AM
To: Stoff, Brian W CIV USARMY CEMVS (USA) [redacted]
Cc: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

Thank you Brian! Matt, does this folder have what you needed?

Evan Hill
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[redacted]

From: Stoff, Brian W CIV USARMY CEMVS (USA) [redacted]
Sent: Tuesday, May 10, 2022 7:16 AM
To: Hill, Evan B CIV USARMY CEMVP (USA [redacted]
Cc: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Subject: RE: Gilbert Island shapefiles

I think I got everything into this zip folder. Let me know if you need anything else.

-Brian

From: Hill, Evan B CIV USARMY CEMVP (USA) [redacted]
Sent: Monday, May 9, 2022 8:35 AM
To: Stoff, Brian W CIV USARMY CEMVS (USA) [redacted]
Cc: Terry, Matthew C CIV USARMY CEMVS (USA) [redacted]
Subject: Gilbert Island shapefiles

Hi Brian,

During last week's meeting you were sharing your ArcMap screen and I saw a couple layers that might be useful for the NEPA document. I have what I need, but Cultural and Tribal were asking for some layers and I was wondering if you might have them.
May we have the layer that shows the little polygon for each of the excavation areas, a layer that shows the LiDAR data, and then a layer that shows the access roads and landing(s)?
I thought I already had the access road and landings layer, but it doesn't seem to be in that first zipfolder you sent out the other month.

Thank you,

Evan Hill
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[redacted]