

**Draft Environmental Assessment/404 Clean Water Act
Review for
Emergency Dredging General Authorization Renewal
Missouri River and Gasconade River Harbor**

October 2020



**US Army Corps
of Engineers** ®
Kansas City District

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Finding of No Significant Impact

Emergency Dredging General Authorization Renewal Missouri River and Gasconade River Harbor Environmental Assessment

Summary

The U.S. Army Corps of Engineers, Kansas City District (USACE), has conducted an environmental assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended. USACE assessed the effects to the human environment of the proposed renewal of the emergency dredging general authorization on the Missouri River and Gasconade River Harbor. The EA is incorporated herein by reference.

The purpose of the Proposed Action is to maintain safe navigation channels for the efficient use of the Missouri River BSNP and Gasconade Harbor facilities. Emergency dredging is needed when the authorized dimensions of the Missouri River navigation channel are not being met and shoaling is causing a restriction to navigation such that tows and barges are not able to transit an area. Such situations result in safety issues for barges attempting to operate on the navigation channel and economic losses.

No Action Alternative

Under the No Action alternative, no emergency dredging activities would occur to maintain the authorized BSNP channel dimensions. USACE would not be able to select this alternative because the agency is Congressionally mandated to maintain the BSNP; however, it is included in the range of alternatives as a benchmark for comparison of impacts, consistent with the CEQ NEPA regulations.

Proposed Action

The USACE Proposed Action is to approve a general authorization for emergency dredging within the USACE area of responsibility from river mile (RM) 498.4 at Rulo, Nebraska to RM 0.0 at the mouth near St. Louis, Missouri. The scope of the Proposed Action also includes dredging the Gasconade Harbor, Gasconade RM 0.0 to 0.4. The authorization would be in effect from the date of renewal through December 31, 2030. The authorization would be reviewed by USACE after 5 years to determine if any updates are warranted.

Emergency dredging operations would occur during the navigation season, generally during low flow periods. Dredge locations would be random and dictated by navigation channel obstructions; however, USACE has identified 14 areas on the Missouri River that are currently experiencing navigation problems and may require emergency dredging. Emergency dredging may also be necessary to provide access for repair of an existing BSNP structure. Whenever possible, USACE would contract with commercial sand dredges to remove the sand for commercial use, with discharges limited to fines and oversized materials. The material dredged would be primarily sand, with discharge into the river as close as practicable to the extraction site unless a commercial sand dredger is contracted to remove the material. In cases where commercial sand dredgers are performing the work, material extracted for commercial use would count towards the permitted annual allowable dredging amounts specified in that contractor's permit(s) in place at the time of the emergency dredging activity.

Summary of Environmental Impacts

The No Action alternative and Proposed Action were evaluated in the EA. No or negligible impacts are anticipated to air quality, environmental justice, geology and geomorphology, invasive species, land use, noise, prime and unique farmland, wetlands, terrestrial resources, and visual and aesthetic resources. Beneficial impacts to commercial sand and gravel dredging, navigation, and socioeconomics are anticipated. Emergency dredging activities would result in minor short-term adverse impacts to water quality from increased suspended sediment and turbidity while dredging operations are ongoing. Sediment disturbance may result in temporary elevation in contaminants, which would quickly return to background levels due to dilution. Benthic organisms (fish and macro-invertebrates) living near the river bottom or in the substrate in the main channel areas could be subject to entrainment from dredging. Recreation may experience minor temporary adverse impacts from physical and noise disturbances during emergency dredging operations. Flood risk is not anticipated to change noticeably.

All practicable means to avoid and minimize adverse environmental effects have been incorporated into the Proposed Action. The Proposed Action was determined to “may affect, but are not likely to adversely affect” the federally-endangered pallid sturgeon and would not affect designated critical habitat. No impact to sites listed on or eligible for inclusion on the National Register of Historic Places are anticipated. The Proposed Action would not significantly affect any wetlands or water of the U.S., nor any important wildlife habitat.

Public Availability

A description of the Proposed Action was circulated to the public and resource agencies through a Public Notice, No. 2020-005-CW, dated October 6, 2020, with a 15-day comment period ending on October 21, 2020. This notice contained a project description, along with information on the USACE preliminary determination to prepare a FONSI and a draft Section 404(b)(1) Evaluation. The Draft EA, Draft FONSI, and Public Notice were provided for public/agency review through the Office of Public Affairs.

Conclusion

All applicable laws, executive orders, regulations, and local government plans were considered in the evaluation of the Proposed Action. It is my determination that the Proposed Action does not constitute a major federal action that would significantly affect the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date: _____

William C. Hannan, Jr.

Colonel, Corps of Engineers

District Commander

1.0 Introduction

The U.S. Army Corps of Engineers (USACE) proposes to renew its emergency maintenance dredging authority for the Missouri River and Gasconade River Harbor. This authority was last renewed in 2004 and expired on December 31, 2014. The scope of this Environmental Assessment (EA), prepared in compliance with the National Environmental Policy Act (NEPA), includes emergency dredging activities to maintain the Missouri River Bank Stabilization and Navigation Project (BSNP) within the area of responsibility of USACE Kansas City District (NWK), Missouri River Miles (RM) 0.0 to 498.4, and the Gasconade River Harbor, Gasconade RM 0.0 to 0.4. The purpose of emergency maintenance authority renewal is to maintain an unobstructed channel for safe navigation. This EA provides information necessary to comply with NEPA and Section 404 of the Clean Water Act public interest review. The proposed dredging operations would be authorized pursuant to Section 404 of the Clean Water Act (33 USC 1344) and comply with regulations found at 33 CFR Parts 335 through 338.

1.1. Missouri River Bank Stabilization and Navigation Project

Shortly after Lewis and Clark explored the Missouri River, the Federal Government started efforts to modify the Missouri River to support navigation. Starting as early as 1819, funds were appropriated by Congress to survey the river; remove river habitat features viewed as obstructive, such as snags, and to confine the river by locking its banks at specified locations. Beginning in 1912, Congress passed the first of several laws (Rivers and Harbors Acts of 1912, 1925, 1927, 1935, and 1945) to fund work by USACE to further improve the river for navigation. This work would later become known as the BSNP. The BSNP features authorized by these laws would further confine the natural river by providing for a comparably static, uniform depth, width, and length. From 1932 to 1973, USACE regularly dredged areas of the navigation channel that were prone to deposition.

The BSNP consists mainly of wood pile and rock structures and revetments along the outsides of bends and transverse dikes along the insides of bends to force the river into a channel alignment that is self-maintaining or self-scouring. This is different from most inland navigation systems, which are managed using locks with some associated dredging. Training structures permit an open condition for the entire length of the project with no dredging required under normal flow conditions. As authorized, the BSNP provides a 9-foot-deep channel with a minimum width of 300 feet during the navigation season from April 1 to November 30 between Sioux City, Iowa, and the mouth near St. Louis, Missouri, a length of 735 RMs. Releases from the Missouri River Mainstem Reservoir System are necessary to provide the authorized navigation channel dimensions. The need for maintenance dredging dropped sharply in the early 1970s as a result of the structures' confining features. Construction of the BSNP was completed in 1980. USACE NWK is responsible for maintenance of BSNP structures and MRRP projects from Rulo, Nebraska downstream to the mouth. Figures 1-1 and 1-2 illustrate the typical structures associated with the BSNP.

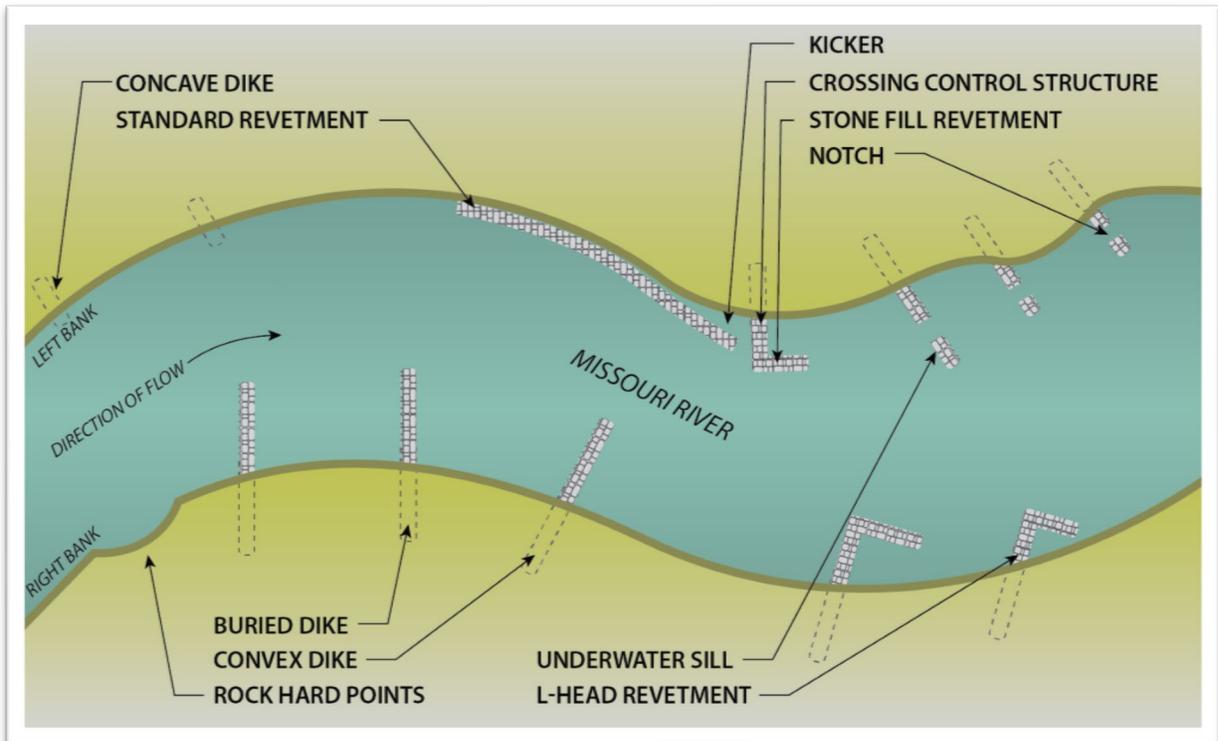


Figure 1-1. Typical Arrangement of BSNP Structures on the Missouri River

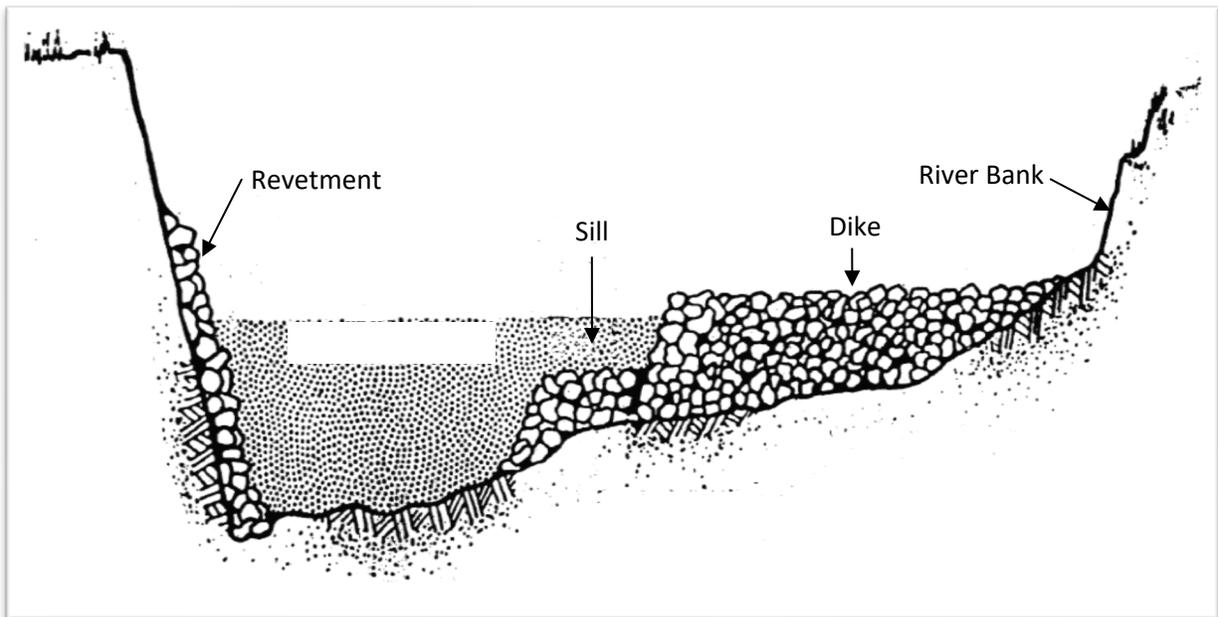


Figure 1-2. Typical Cross Section of the Missouri River Showing the BSNP Features that Create a Nine-foot deep by 300-foot-wide Navigation Channel

1.2. Previous Emergency Dredging Activities

Emergency maintenance dredging since 1988 has consisted of:

- April 2003: 30,000 cubic yards dredged at RM 130 by commercial sand dredgers. Material was deposited 500 feet downstream immediately outside the navigation channel and was used to expand an existing sandbar.
- Oct 2002: 70,000 cubic yards dredged at RM 130 and 24,000 cubic yards dredged at RM 52 by USACE dredge Potter. Material was deposited 400 feet landward and 300 feet downstream and was used to expand an existing sandbar.
- May 1989: 70,000 cubic yards dredged at RM 8.5 by USACE dredge Thompson. Material was deposited along the left bank dike field.
- July 1988: 106,000 cubic yards dredged at RM 13 and 88,000 cubic yards dredged at RM 0 by the USACE dredge Thompson. Material was deposited along the right bank shoreline.

1.3. Purpose of the Proposed Action

The purpose of the Proposed Action is to maintain safe navigation channels for the efficient use of the Missouri River BSNP and Gasconade Harbor facilities.

1.4. Need for the Proposed Action

Emergency dredging is needed when the authorized dimensions of the Missouri River navigation channel are not being met and shoaling is causing a restriction to navigation such that tows and barges are not able to transit an area. Such situations result in safety issues for barges attempting to operate on the navigation channel and economic losses.

The need for emergency dredging tends to increase following major flood events. Multiple years of extended flooding has damaged BSNP structures. The 2019 Missouri River Flood caused approximately \$128.5 million in damages to the BSNP in the Kansas City District AOR. The flows on the Missouri River returned to more normal navigation flows in late August 2020 after 3 years of high water (near or at flood stage). As the water level and flow dropped to normal service levels, damaged structures were not able to direct enough flow into the navigation channel to ensure a reliable 9-foot channel. The Missouri River currently has shoals that are slowing commercial navigation while causing safety issues to crews and equipment.

Monetary damage to the navigation industry is estimated at \$40,000 to \$80,000 per day because several navigation companies are currently operating on the Missouri River and attempting to transit these shoaled areas. In addition, tows that risk navigating these shoals have the potential to damage government property including the river training structures on the Missouri River potentially causing \$10,000 to \$100,000 in damage to each structure.

When depths in the navigation channel are not meeting the authorized 9-foot depth for the full authorized width (300 feet), the Missouri River can become unsafe to navigate. Tow pilots risk beaching barges in shallow water or shoaled areas, which can cause tows to break apart and drift uncontrolled downstream potentially damaging bridge piers, government property, or other vessels. Vessels also risk inducing damage that could sink it or another vessel and injure or kill personnel on board. In addition, damage to the barge and container integrity could cause uncontrolled releases of substances, some possibly hazardous, into the environment. For example, a recent grounding caused a petroleum barge to break loose and float uncontrolled down river for several miles before it was caught just upstream of a major highway bridge.

2.0 Proposed Action and Alternatives

NEPA requires federal agencies to evaluate and consider a range of alternatives that address the purpose of and need for action. Alternatives under consideration must include a “No Action” alternative in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14). This environmental assessment evaluates the Proposed Action and the No Action. Due to the emergency nature of the Proposed Action, alternatives are limited.

2.1. Proposed Action

The USACE Proposed Action is to approve a general authorization for emergency dredging within the USACE NWK area of responsibility from RM 498.4 at Rulo, Nebraska to RM 0.0 at the mouth near St. Louis, Missouri (Figure 2-1). The scope of the Proposed Action also includes dredging the Gasconade Harbor, Gasconade RM 0.0 to 0.4 (Figure 2-2). The authorization would be in effect from the date of renewal through December 31, 2030. The authorization would be reviewed by USACE after 5 years to determine if any updates are warranted.

Emergency dredging operations would occur during the navigation season, generally during low flow periods. Dredge locations would be random and dictated by navigation channel obstructions; however, Table 2-1 identifies 14 areas on the Missouri River that are currently experiencing navigation problems and may require emergency dredging. Emergency dredging may also be necessary to provide access for repair of an existing BSNP structure. Whenever possible, USACE NWK would contract with commercial sand dredges to remove the sand for commercial use, with discharges limited to fines and oversized materials. The material dredged would be primarily sand, with discharge into the river as close as practicable to the extraction site unless a commercial sand dredger is contracted to remove the material. In cases where commercial sand dredgers are performing the work, material extracted for commercial use would count towards the permitted annual allowable dredging amounts specified in that contractor’s permit(s) in place at the time of the emergency dredging activity.

The Proposed Action includes dredging of river sediments from the navigable waters of the Missouri River or Gasconade Harbor, extraction of suitable sand and gravel (if commercial dredgers are performing the dredging), and return (discharge) of some or all of the dredged material into the disposal site. Dredging is typically conducted using hydraulic suction-head or cutter-head dredges mounted on movable barges. The dredge consists of mechanical equipment mounted on a barge that can be moved into position and anchored during dredging operations. The dredge barge is held in a fixed position during dredging by deploying large, fortress-style anchors from the forward corners of the barge on the end of 1,000-to 2,000-foot-long cables. By selectively manipulating the length of each anchor cable, the dredge can be moved forward, backward, and from side to side during the dredging operation. From a single anchoring position, a dredge can operate in an area approximately 1,000 to 2,000 feet in length and approximately 400 to 500 feet in width before moving the anchors. Some dredges include piles (called “spuds”) that can be raised and lowered to the river bottom, to assist with maintaining the dredge position.

During dredging, the dredging head (with or without a cutter head) and a suction line are mounted on a boom (called a ladder) that is lowered to the river bed. Sediment is removed from the river bottom until the suction head comes into contact with hard materials (such as bedrock, large rock substrates, or consolidated sediment layers) at which time the suction head does not advance further into the river bottom, and the amount of bottom sediments sucked into the suction head is greatly reduced. The dredge boom is then raised, the dredge is relocated, and excavation recommences.

As allowed by the equipment capabilities and physical circumstances, discharges would be avoided in 1) chutes, cutoff channels and tributaries, 2) within 100 feet of the bank or any control structure, 3) within

500 feet upstream of any municipal water intake, 4) in wetlands, 5) within 2 feet below the elevation of normal navigation flow (design line) between sills and dike systems, or 6) in deep scour holes.

Table 2-1. 2020 navigation problem areas that may be candidates for emergency dredging.

River Mile (RM)	Concern Statement
RM 25.3	Areas within channel with less than 9-ft depth
RM 91 - 92	Areas within channel with less than 9-ft depth
RM 104.9 - 105.1	Areas within channel with less than 9-ft depth
RM 132.8 - 133.2	Areas within channel with less than 9-ft depth
RM 178 - 180	Areas within channel with less than 9-ft depth
RM 185.2	Areas within channel with less than 9-ft depth
RM 186.7	Areas within channel with less than 9-ft depth
RM 194	Areas within channel with less than 9-ft depth
RM 261.8	Areas within channel with less than 9-ft depth
RM 266.9	Areas within channel with less than 9-ft depth
RM 282	Areas within channel with less than 9-ft depth
RM 286	Areas within channel with less than 9-ft depth
RM 400.6	Areas within channel with less than 9-ft depth
RM 480	Areas within channel with less than 9-ft depth

USACE will notify the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), Missouri Department of Conservation (MDC), Missouri Department of Natural Resources (MoDNR), Kansas Department of Wildlife, Parks, and Tourism (KDWPT) and the Nebraska Game and Parks Commission (NGPC), and other agencies if requested, at least 36 hours in advance of the commencement of emergency dredging. If requested, a site inspection will be conducted with interested agencies to discuss the extent of dredging and disposal of spoils.

2.2. No Action Alternative

Under the No Action alternative, no emergency dredging activities would occur to maintain the authorized BSNP channel dimensions. USACE would not be able to select this alternative because the agency is Congressionally mandated to maintain the BSNP; however, it is included in the range of alternatives as a benchmark for comparison of impacts, consistent with the CEQ NEPA regulations.

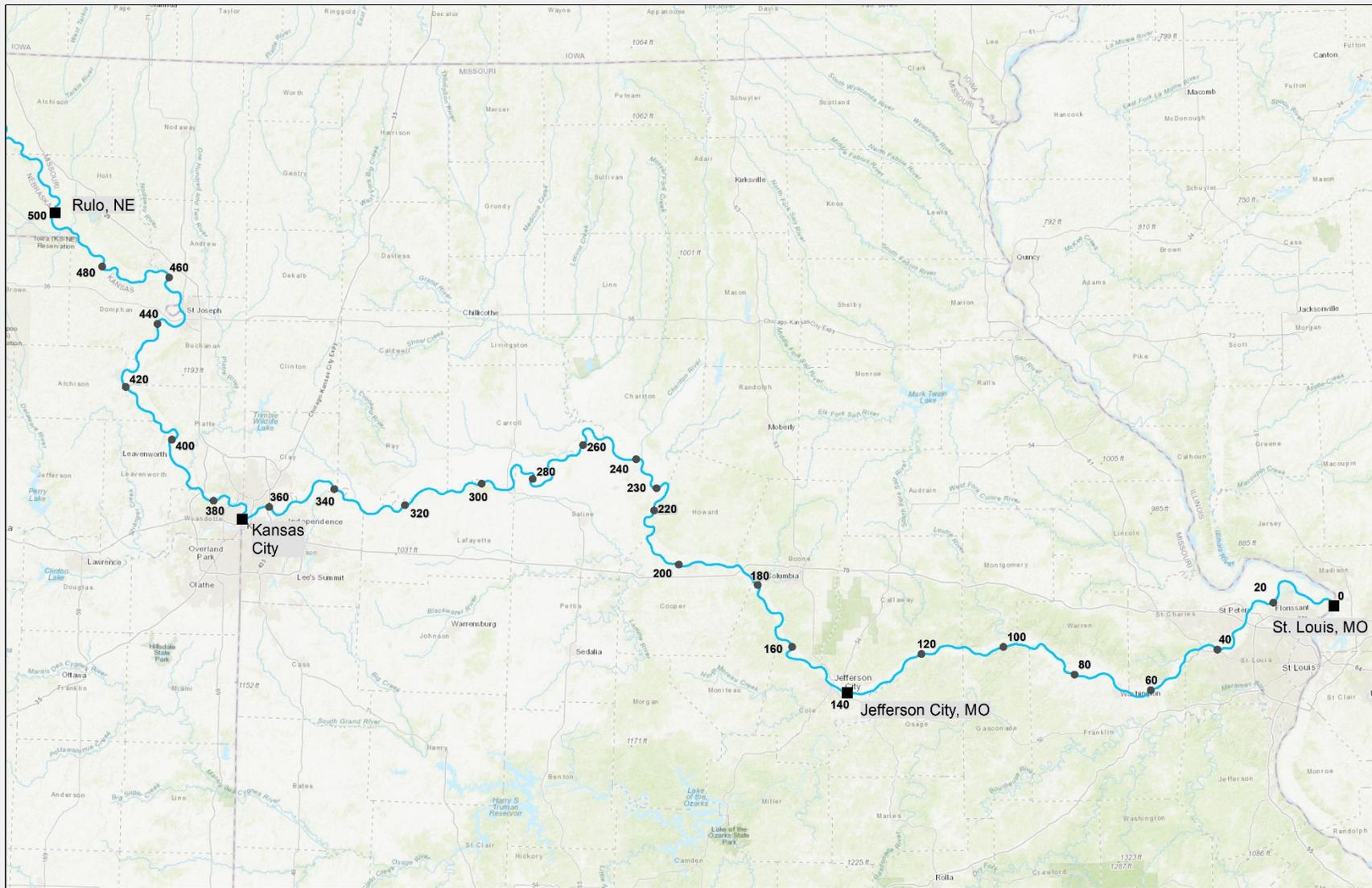


Figure 2-1. Geographic Scope of Potential Emergency Dredging Activities on the Lower Missouri River.



Figure 2-2. Gasconade River Harbor Potential Emergency Dredging Area.

3.0 Affected Environment and Environmental Consequences

This chapter discusses aspects of the environment that may potentially be impacted by the No Action alternative and Proposed Action. It presents both the affected environment and environmental consequences, as required by NEPA. This chapter is organized by resource topic with the status of the affected environment and the impacts of each alternative described within each resource section. The affected environment sections provide a description of different aspects of the human environment that may be affected by the Proposed Action. The environmental consequences sections provide a description of the anticipated impacts. Consistent with CEQ Regulation 1502.2 and CEQ 40 Questions 36A, this chapter focuses on the resource topics most relevant to the Proposed Action under evaluation. Resources that were considered but for which effects are either entirely beneficial or the adverse impacts are not as relevant to decision-making are described in Section 3.2.

3.1. Impact Characterization

CEQ Regulations 1508.1 define effects or impacts as changes to the human environment from the Proposed Action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the Proposed Action or alternatives, including those effects that occur at the same time and place as the Proposed Action or alternatives and may include effects that are later in time or farther removed in distance from the Proposed Action and alternatives. The potential impacts of the alternatives are described in this EA using the following terms:

- **Beneficial:** A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse:** A change that moves the resource away from a desired condition or detracts from its appearance or condition.
- **Short-term:** impacts generally occur during construction or for a limited time thereafter, generally less than two years, by the end of which the resources recover their pre-construction conditions.
- **Long-term:** impacts last beyond the construction period, and the resources may not regain their preconstruction conditions for a longer period of time.

3.2. Resources Considered but Dismissed

Air Quality – Air quality at a given location is described by the concentrations of various pollutants in the atmosphere. The quality of the air is measured against National Ambient Air Quality Standards (NAAQS) set by the EPA. Temporary increases in emissions that may occur during emergency dredging activities would not have potential to exceed NAAQS based on experience. This resource topic was dismissed from further evaluation.

Commercial Sand and Gravel Dredging on the Lower Missouri River – Commercial sand and gravel dredging may benefit from the Proposed Action if commercial dredgers are used to perform the emergency dredging. The Proposed Action would not change any of the currently in place restrictions regarding commercial sand and gravel dredging on the Missouri River and would not impact quantities of sand and gravel permitted or available. As a result, only beneficial impacts to this resource topic are anticipated from the Proposed Action and it has been dismissed from further evaluation.

Environmental Justice – Environmental Justice promotes consideration of whether a Proposed Action would disproportionately affect low income and minority communities. Past NEPA reviews on operation and maintenance of the BSNP have not identified Environmental Justice issues. In addition, there are no

options to complete the Proposed Action in a location other than where the emergency dredging is required. As a result, there is no potential for a disproportionate adverse effect on minorities, low-income residents, or other environmental justice populations. This resource topic was dismissed from further evaluation.

Geology and Geomorphology – Dredging can contribute to bed degradation over time depending on the amount of material removed and the frequency of occurrence. Emergency dredging activities have occurred four times in the past 32 years. Emergency dredging is not anticipated to occur at a rate or frequency that would contribute to long-term bed degradation. Therefore, emergency dredging may be authorized in areas closed to commercial sand and gravel dredging due to bed degradation.

Invasive Species – Invasive species have the potential to displace native plants and animals. In accordance with Executive Order 13122, federal agencies may not authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species. Invasive aquatic species that have the potential to be introduced into new water bodies as a result of contaminated construction equipment include zebra mussels, quagga mussels, New Zealand mudsnails, purple loosestrife, and Eurasian watermilfoil. Common invasive fish species on the lower Missouri River include the common carp, goldfish, grass carp, silver carp, bighead carp, and western mosquitofish. Transport of invasive species by the river is common. Natural erosion and deposition of material along the river can result in conditions that are susceptible to becoming established with invasive plants. Construction contractors are required to implement best management practices (BMPs) to limit the potential to spread invasive species. This would not vary by alternative; therefore, this topic is not evaluated further.

Land Use – The Proposed Action would not result in any land use changes; therefore, this topic was dismissed from further evaluation.

Navigation – The purpose of the Proposed Action is to maintain a safe navigation channel that meets authorized channel dimensions. Therefore, all impacts to navigation from the Proposed Action would be considered beneficial. As a result, this resource topic was dismissed from further evaluation.

Noise – Emergency dredging activities under the Proposed Action would result in short-term increases of noise levels in the vicinity of dredging activities. However, dredging is an ongoing activity on the Missouri River and therefore is not out of character for the baseline acoustic environment. This topic was dismissed from further evaluation.

Prime and Unique Farmland – There is no potential to affect prime and unique farmland because the Proposed Action would primarily affect open water areas. No agricultural lands would be converted to other uses. This resource was dismissed from further evaluation.

Socioeconomics – Socioeconomic impacts of the Proposed Action would be entirely beneficial because efficient navigation would be facilitated leading to avoidance of economic losses. This topic was dismissed from further evaluation.

Wetlands – The Proposed Action would occur entirely within the Missouri River. The Proposed Action stipulates that disposal of dredged material should avoid wetlands. No wetland impacts are anticipated and therefore this topic was dismissed from further evaluation.

Terrestrial Resources – There is no potential to affect terrestrial resources because the Proposed Action would occur in the Missouri River. This resource was dismissed from further evaluation.

Visual and Aesthetic Resources – The Proposed Action would result in the short-term presence of dredges and associated equipment in the action area. Dredging is a common activity on the Missouri

River and therefore this would not be out of character with the existing visual and aesthetics of the area. This topic was dismissed from further evaluation.

3.3. Water Quality

3.3.1. Affected Environment

Past USACE water quality monitoring for the Missouri River has included long-term fixed station ambient monitoring at locations on the mainstem of the river, investigative monitoring, and special studies. Water quality parameters measured included total phosphorus, nitrate plus nitrite, ammonia, ortho-phosphorus, dissolved phosphorus, total Kjeldahl nitrogen, total suspended solids, suspended sediment concentration, total dissolved solids, total organic carbon, dissolved organic carbon, turbidity, chlorophyll A, total silica, and dissolved silica. Median concentrations of common water quality constituents are provided in Table 3-1. The Missouri River is listed on the Missouri 303(d) list of impaired waters for *Escherichia coli*.

3.3.2. Environmental Consequences

No impacts to water quality would result from the No Action alternative because no emergency dredging activities would be authorized.

Emergency dredging activities would result in minor short-term adverse impacts to water quality from increased suspended sediment and turbidity while dredging operations are ongoing. Turbidity increases generated from emergency dredging are likely to be well within the naturally high turbidity levels of the Missouri River.

Sediment disturbance could mobilize nutrients, organic material, anoxic sediments, and other pollutants including metals/metalloids associated with the sediment and would potentially increase loading of these pollutants into the river over the short-term. Any temporary elevation in contaminants would return quickly to background levels due to dilution.

The use of dredge equipment could result in negligible short-term adverse impacts to water quality from accidental leaks and spills of pollutants (e.g., oil, gas, lubricants). These impacts would be minimized or eliminated by compliance with the various provisions of the Clean Water Act (CWA) and by using BMPs. A CWA Section 404(b)(1) evaluation was completed for the Proposed Action (Appendix A). The project is not anticipated to result in any exceedance of state water quality standards or additional impairment to the Missouri River. USACE will request a 401 Water Quality Certification from the states of Kansas, Missouri, and Nebraska.

Table 3-2. Median concentrations of common water quality collected from the Missouri River between the years 2010 and 2014.

Sampling Location	Atchison, River Mile 423		Fort Osage, River Mile 340		Waverly, River Mile 294		Glasgow, River Mile 227		Marion, River Mile 160		Hermann, River Mile 98		Weldon Springs,* River Mile 50	
	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range	Median	Range
Median and Range Categories														
Total Phosphorus (mg/L)	0.33	0.05-2.4	0.37	0.12.3	0.35	0.09-2.1	0.38	0.091-2	0.385	0.111.8	0.34	0.111.4	0.3	0.121.9
Total Orthophosphate (mg/L)	0.087	0.024-0.24	0.12	0.053-0.21	0.115	0.052-0.21	0.1	0.059-0.24	0.099	0.056-0.49	0.087	0.050.2	0.09	0.0260.16
Ammonia (mg/L)	0.056	0.01-0.32	0.09	0.03-0.29	0.068	0.01-.24	0.05	0.02-0.92	0.04	0.03-0.28	0.35	0.02-0.65	0.033	0.020.52
Nitrate/Nitrite (mg/L)	1.4	0.15.0	1.4	0.21-4.4	1.45	.224.7	1.2	0.23.8	1.3	0.17-4	0.98	0.12-3	0.9	0.12.9
Total Kjeldahl Nitrogen (mg/L)	0.9	0.28.4	1.1	0.26.7	1	0.25-6.7	1	0.22-6.4	1	0.334.6	0.89	0.383.6	0.78	0.354.2
Total Suspended Solids (mg/L)	128	25-4710	123	22.4-4140	160	28-3070	176	44-2660	203	321700	144	31.3-1410	132	231520

*Note: Water quality data was not collected at Weldon Springs in 2010.

3.4. Aquatic Resources

3.4.1. Affected Environment

Typical fishes of the Missouri River system included:

- Big river main channel fishes (Pflieger 1971, Pflieger 1989, Galat et al. 2005): sturgeons, Macrhybopsis and Platygobio chubs, buffaloes, carpsuckers, blue sucker, catfishes, burbot and freshwater drum. Native big river fish species include those adapted to the swift, highly turbid currents, and unstable sand and silt bottom of the main channel (Pflieger 1971). Many of these big river fish species are benthic (bottom-dwelling). They have adapted to the swift current and highly turbid waters of the Missouri River by developing enlarged (often sickle-shaped) fins, streamlined bodies, flattened heads, mouths on the underside of the head, and well-developed chemosensory organs (Galat et al. 2005).
- Main channel border fishes (Galat et al. 2005): bullhead catfishes, and sunfishes. These species are adapted to slow to no current and clearer water found in main channel border areas.

Rich communities of benthic macroinvertebrates occur in the Missouri River, but their abundance is greater in the upper reaches (Galat et al. 2005, Poulton et al. 2003). Poulton (2004) identified benthic macroinvertebrate communities in the channelized reach of the lower Missouri River. Nearly one third of these taxa collected belonged to the sensitive insect orders (Ephemeroptera, Plecoptera, Odonata, and Trichoptera). In addition, Poulton et al. (2003) and Poulton (2004) found that artificial rock (material placed for bank and channel stability or for dike structures) contained a diverse macroinvertebrate community.

3.4.2. Environmental Consequences

No impacts to aquatic resources would occur under the No Action alternative because no emergency dredging activities would be authorized.

The magnitude and duration of impacts on aquatic habitat at dredge sites would be determined by the time required for recovery and repopulation of the benthic areas. Typically, the more naturally variable an aquatic habitat, the less the effect of dredging on that habitat. Aquatic organisms common to these naturally variable areas are adapted to unstable sediment conditions and can better withstand the stresses imposed by dredging. Thus, due to the high level of variability in the benthic habitats in the lower Missouri River, aquatic species present in these habitats are likely to be better able to withstand and recover from the localized alteration of benthic habitat due to dredging. Many areas of coarse aggregate sediments (e.g., cobble and bedrock) that substrate-spawning species (e.g., sturgeon and sauger) are known to use are found on outside bends that are constantly flushed free of fine sediment.

Benthic organisms (fish and macro-invertebrates) living near the river bottom or in the substrate in the main channel areas could be subject to entrainment from dredging. The extent of mortality would be a function of the amount of tow traffic on a given river system, towboat speed, and traffic volumes during the period when larvae are most susceptible to shear stress. Studies show that entrainment from dredging would not likely be a substantial problem for many fish or shellfish species in water bodies experiencing periodic dredging.

It is expected that noise from the operation of dredges may result in avoidance of the dredging area by fish species sensitive to noise over the duration of the activity.

3.5. Threatened and Endangered Species

3.5.1. Affected Environment

USACE obtained official species lists for the study area from the Kansas, Missouri, and Nebraska Ecological Services Field Offices of the USFWS via the Information for Planning and Consultation (IPaC) online system (Appendix B). After reviewing the official species lists, USACE determined that of the eight species identified only pallid sturgeon (*Scaphirhynchus albus*) required further evaluation because the other species are either terrestrial species, which would not be impacted by the Proposed Action, or do not occur in the action area.

Pallid sturgeon are large, long-lived benthic (i.e. bottom dwelling) fish that inhabit rivers of the Missouri and Mississippi River basins. They have physical features adapted to life in turbid fast-flowing rivers such as a flattened shovel-shaped snout; a long, slender, and completely armored body; fleshy barbels; and a protrusible mouth (i.e. capable of being extended and withdrawn from its natural position) that supplement their small eyes in detecting and capturing food. The pallid sturgeon was listed as endangered under the ESA on September 6, 1990 (55 Federal Regulation 36641–36647). Winders and Steffensen (2014) developed population estimates for a reach of the Missouri River downstream of Kansas City, Missouri. The annual population estimates of pallid sturgeon varied from 6.1 to 11.1 fish/river kilometer (rkm), of which known hatchery-origin pallid sturgeon (5.5 to 10.2 fish/rkm) were much more abundant than those of wild origin (0.6 to 0.9 fish/rkm) (Winders and Steffensen 2014).

Pallid sturgeon are long-lived, with females reaching sexual maturity later than males (Keenlyne and Jenkins 1993). However, the age at first reproduction can vary between hatchery-reared and wild fish, depending on local conditions (USFWS 2014). The estimated age at first reproduction of wild fish is about 15 to 20 years for females and approximately 5 to 7 years for males (Keenlyne and Jenkins 1993). Minimum age-at-sexual maturity for known-aged hatchery-reared fish was age-9 for females and age-7 for males (Steffensen et al. 2012). Pallid sturgeon generally spawn from late April through May in the lower Missouri River (DeLonay et al. 2016). Reproductively ready pallid sturgeon indicate consistent patterns of upstream migration before spawning. Migration patterns can differ between males and females; where male patterns are less regular. Migrating pallid sturgeon in Missouri selected shallow places in the channel, and velocities on the low end of the distribution, which indicates selection of migration pathways that optimize energy expenditure (DeLonay et al. 2016).

Fertilization to hatching, the embryo life stage, lasts 5-8 days depending on water temperature (DeLonay et al. 2016). Most of what is known about habitat requirements for embryos is extrapolated from laboratory studies. Naturally spawned pallid sturgeon eggs become adhesive 1 to 3 minutes after fertilization (Dettlaff et al. 1993) and presumably fall through the water column to affix to solid substrate such as rock (DeLonay et al. 2016). The relative importance of turbidity for the deposition, fertilization, and hatch of pallid sturgeon embryos is unknown (DeLonay et al. 2016). It is also unknown if predation is a threat to pallid sturgeon embryos (DeLonay et al. 2016).

A free embryo is a developing fish that no longer resides within the egg membrane. This life stage lasts 8 to 12 days post-hatch and covers the period from hatch until the larval fish begins feeding (DeLonay et al. 2016). Studies to date indicate: (1) pallid sturgeon free embryos drift and disperse downstream at a rate slightly less than mean water column velocity; (2) downstream drift and dispersal occur during day and night; (3) duration of the free embryo drift period depends on water temperature and rate of development; and (4) free embryos will drift and disperse several hundred kilometers during development into exogenously (i.e. external) feeding larvae, with total drift distance a function of water temperature, development rate, and velocity conditions in the river channel. Drifting free embryos use up their yolk sac

and develop swimming ability, after which they “settle” into environments conducive to feeding, growth, and survival. The larval life stage is a developing fish without a yolk, feeding exogenously (i.e., it has consumed its yolk sac and must now feed externally). The period of transition from endogenous (growing or produced by growth from deep tissue) to exogenous feeding is considered critical because the larvae must find sufficient food or it will starve. Larval pallid sturgeon have been reported to consume the larvae and pupae of Dipterans (mainly from the family Chironomidae (i.e., midges) and Ephemeroptera nymphs (i.e., mayflies); DeLonay et al. 2016).

The juvenile life stage consists of sexually immature fish and lasts until the fish enter their first reproductive cycle. Diet composition plays a large role in the growth of juvenile pallid sturgeon to adult (Grohs et al. 2009), with chironomids (Order: Diptera) and mayflies (Order: Ephemeroptera) serving as important components of the early juvenile diet (Sechler 2010; Sechler et al. 2013). Pallid sturgeon diets shift from macroinvertebrates to fish as they grow. Of the food eaten by juvenile pallid sturgeon between 350 and 500 mm fork length, 57 percent was fish, whereas fish made up 90 percent of the diets of juvenile pallid sturgeons longer than 500 mm fork length (Gerrity et al. 2006; Grohs et al. 2009). Isotope analyses of pectoral spines support gut analyses and indicate that the diet shift of juvenile pallid sturgeon from invertebrates to fish likely occurs at or before 500 mm fork length—well before pallid sturgeon reach reproductive maturity (French 2010). Limited prey sources increase mortality and may suppress growth in surviving juveniles (Deng et al. 2003; DeLonay et al. 2009). No clear relationship has been documented between abiotic factors (e.g., water temperature) and pallid sturgeon recruitment, but early diet and growth are hypothesized to affect recruitment into adult spawning populations (DeLonay et al. 2009; Sechler 2010).

Although no longer listed under the Endangered Species Act, the bald eagle is protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle is commonly found as both a resident population and in higher concentrations as winter migrants along the lower Missouri River. Bald eagles commonly nest along the Missouri River. Bald eagles use large trees along the Missouri River for nesting, roosting, and foraging perches. Bald eagles primarily feed on fish and migratory waterfowl.

3.5.2. Environmental Consequences

Under the No Action alternative, there would be no potential for impacts to pallid sturgeon or bald eagles because no emergency dredging activities would be authorized.

Most studies and the life history of pallid sturgeon suggest that larval and early juveniles would be most susceptible to entrainment (Peters and Parham 2008) by dredging activities. This is because they have less swimming ability and swimming endurance, and because they drift somewhat passively over long distances as they develop and increase their swimming ability (Hoover et al. 2005). In 2015, USACE completed a biological assessment for commercial sand and gravel dredging on the lower Missouri River (USACE 2015). The risk of entrainment to juvenile pallid sturgeon within the lower Missouri River was analyzed and USACE concluded “...the proposed action's potential to adversely affect the pallid sturgeon during the larval drift period is improbably low, thus minor and discountable.” Concurrence from the USFWS was provided in a letter dated November 20, 2015 that stated “The USACE Biological Assessment focuses much of the analyses on potential effects to the pallid sturgeon. The document included updated information on larval sturgeon, based on those analyses, the Service concurs with the USACE determination that the proposed permits, including the conservation measures incorporated as special conditions, may affect, but are not likely to adversely affect the pallid sturgeon.” For more information regarding the analyses contained within the Biological Assessment and Letter of Concurrence from USFWS see <http://www.nwk.usace.army.mil/Missions/Regulatory-Branch/Missouri-River->

[Commercial-Dredging/](#). Emergency dredging activities would occur much less frequently than commercial sand and gravel dredging based on past agency experience; therefore, the potential for impacts to pallid sturgeon from emergency dredging would be even less than that documented for commercial sand and gravel dredging.

Short-term and localized turbidity increases generated from dredging activities is likely to be well within the naturally high turbidity levels of the Missouri River which pallid sturgeon are adapted. Noise attenuates through water and dissipates when it encounters land. Thus, in a meandering river, the distance that noise would travel is limited to the first bend upstream and downstream of the construction area. Impacts associated with short term disturbance, noise, and turbidity would be considered negligible.

USACE has determined that the Proposed Action “may affect, but are not likely to adversely affect” pallid sturgeon for purposes of Endangered Species Act consultation. Should emergency dredging be necessary in areas that were identified as pallid sturgeon habitat features in the commercial sand and gravel dredging permits or in interception rearing complexes constructed as part of the USACE Missouri River Recovery Program, USACE would engage USFWS in advance of emergency dredging activities to confirm that the specific emergency dredging activity and disposal sites are consistent with this determination.

The potential to affect bald eagles would occur primarily if nesting activity was occurring in the immediate vicinity of dredging operations. However, increases in the ambient noise levels associated with emergency dredging activities is anticipated to be negligible. Disturbance to bald eagles on the Missouri River is not anticipated as a result of the Proposed Action. If bald eagle nesting activity is observed in the area of emergency dredging, USACE would contact the USFWS to determine if any measures are necessary at a location to avoid disturbance.

3.6. Cultural Resources

3.6.1. Affected Environment

An archeological background review of the project area of potential effect (APE), the Missouri River navigational channel, was conducted for the states of Kansas, Missouri, and Nebraska using information from the Kansas State Historical Society’s Archeological Inventory (online); the Missouri Department of Natural Resources Archeological Viewer (on-line); GIS data from the Nebraska State Historical Society; National Register of Historic Places on-line (NRHP); the Corps’ Abandoned Shipwrecks on Missouri River Channel Maps of 1879 and 1954; and other pertinent cultural resource documents on file at the USACE NWK office. A number of Missouri River boat wrecks are mapped within the present channel. However, it is unlikely that any wrecks are within the navigation channel. First, the mapped locations are estimates of where a ship sank and while there are two different locations for every wreck, neither are considered accurate. Second, wrecks were removed from the navigation channel for safety reasons. Third, any remains would have been destroyed by past dredging or the self-scouring nature of the river. No other cultural resource types are mapped or believed present within the navigation channel.

3.6.2. Environmental Consequences

The No Action alternative would have no effect on any cultural resource in or adjacent to the project area.

USACE has made a determination that no historic properties will be affected by the authorized emergency dredging because dredging will be limited to areas of recent accretion within the navigation channel. Given that the navigation channel is maintained to be hazard free, has been subject to repeated past dredging activity, and was designed to be self-scouring, it is unlikely that any remains of shipwrecks are present within the APE. No other cultural resource is mapped within the APE. USACE NWK

previously consulted with Missouri SHPO on the general authorization for emergency dredging that was in place from 2004 to 2014. Missouri SHPO stated that adequate documentation had been provided and that there would be no historic properties affected (Appendix C). If in the unlikely event that archeological materials are discovered during project construction, work in the area of discovery will cease and the discovery investigated by a qualified archeologist. The findings on the discovery would be coordinated with the appropriate SHPO and federally recognized Native American Tribes.

3.7. Recreation

3.7.1. Affected Environment

The Missouri River is used recreationally for fishing, boating, canoe/kayaking, and camping.

3.7.2. Environmental Consequences

The No Action alternative would have no impacts on recreation because no emergency dredging activities would be authorized.

The Proposed Action would have minor temporary adverse impacts on recreation from physical and noise disturbances during emergency dredging operations. There would be no long-term adverse impacts to the recreational experience due to changes in aesthetics.

3.8. Flood Risk

3.8.1. Affected Environment

There is an extensive flood risk management system (i.e., levees and dams) along the Missouri River. According to Executive Order 11988, each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. USACE has a responsibility to evaluate the potential effects of any actions it may take in a floodplain, and to consider flood hazards in project planning.

3.8.2. Environmental Consequences

The No Action alternative would have no change to existing flood risk because no emergency dredging activities would be authorized.

Floods are instances of rare high-flow events that are of concern. Increases in high-flow water surface elevations can increase flood stages and the likelihood of breaching levees that would result in flood-related damage. Higher flood stages also increase the potential for bed scour and

degradation from a flood event, which would reduce the river bed elevation and the low-flow water surface elevation. Conversely, high-flow water surface elevations may be reduced in the short term in areas where rapid channel degradation occurs. If the channel bed degrades more quickly than vegetation can become established and trap sediment in the channel, a deeper channel cross section is created, and the high flow water surface elevation may decline temporarily. If vegetation becomes established due to lower low-flow stages, that vegetation can trap sediment and ultimately reduce channel capacity resulting in increased high flow elevations over the long term. Emergency dredging is not a regularly occurring action at any given location and therefore the effects of a temporary reduction in bed elevation resulting from this activity would not be expected to induce vegetation growth that may affect high flow water elevations. As a result, it is anticipated that emergency dredging would have negligible short-term effects to high flow water surface elevations.

3.9. Compliance with Environmental Laws

Table 3-1 summarizes the status of environmental compliance for the Proposed Action to date. Several activities are ongoing, and some may continue beyond the signing of a NEPA decision document.

Table 3-3. Compliance with Environmental Quality Statutes.

Federal Policy	Compliance
Archeological Resources Protection Act, 16 U.S.C. 470, et seq.	Full Compliance
Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. 668-668d, et seq.	Full Compliance
Clean Air Act, as amended, 42 U.S. C. 7401-7671g, et seq.	Full Compliance
CWA (Federal Water Pollution Control Act), 33 U.S.C. 1251, et seq.	On-going
Coastal Zone Management Act, 16 U.S.C. 1451, et seq.	Not Applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	On-going
Environmental Justice (Executive Order 12898)	Full Compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not Applicable
Farmland Protection Policy Act, 7 U.S.C. 4201, et seq.	Full Compliance
Federal Water Project Recreation Act, 16 U.S.C. 4601-12, et seq.	Full Compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	On-going
Floodplain Management (Executive Order 11988)	Full Compliance
Invasive Species (Executive Order 13122)	Full Compliance
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4, et seq.	Not Applicable
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not Applicable
Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712	Full Compliance
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	On-going
National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470a, et seq.	Full Compliance
Protection & Enhancement of the Cultural Environment (Executive Order 11593)	Full Compliance
Protection of Wetlands (Executive Order 11990)	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Full Compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Full Compliance
Wild and Scenic River Act, 16 U.S.C. 1271, et seq.	Not Applicable

Notes: Not applicable – No requirements for the statute are required

Ongoing – Activities to comply with the regulation are in process

Full Compliance – The project has met all anticipated requirements of the statute

Noncompliance – Violation of a requirement of the statute

4.0 Agencies and Persons Consulted

CEQ Regulations §1501.5 states that an EA should include a listing of agencies and persons consulted. In preparation of this EA and through the NEPA process, USACE consulted with the following agencies and persons:

- Delaware Nation
- Delaware Tribe of Oklahoma
- Ho-Chunk Nation
- Iowa Tribe of Kansas and Nebraska
- Kansas Department of Health and Environment
- Kansas Department of Wildlife, Parks, and Tourism
- Kansas State Historic Preservation Office
- Kaw Nation
- Kickapoo Tribe of Kansas
- Miami Tribe of Oklahoma
- Missouri Department of Conservation
- Missouri Department of Natural Resources
- Missouri Federal Assistance Clearinghouse
- Missouri State Historic Preservation Office
- Nebraska Department of Environmental Quality
- Nebraska Department of Fish and Game
- Nebraska State Historic Preservation Office
- Omaha Tribe
- Osage Nation
- Otoe-Missouria Tribe
- Pawnee Nation of Oklahoma
- Ponca Tribe of Nebraska
- Ponca Tribe of Oklahoma
- Prairie Band Potawatomie Nation
- Sac and Fox Nation of Missouri
- U.S. Environmental Protection Agency, Region 7
- U.S. Fish and Wildlife Service, Kansas Ecological Services Field Office
- U.S. Fish and Wildlife Service, Missouri Ecological Services Field Office

- U.S. Fish and Wildlife Service, Nebraska Ecological Services Field Office

USACE has prepared this draft EA in accordance with NEPA. A public notice will be issued by USACE announcing the availability of this draft EA and draft Section 404(b)(1) Evaluation for a 15-day public comment period and public interest review. The public notice will be distributed as appropriate to notify the affected public of the availability of the draft EA. During the public comment period, the Public Notice and draft documents are available on the NWK Public Notice website at:

<http://www.nwk.usace.army.mil/Media/PublicNotices/PlanningPublicNotices.aspx>. All public and agency comments received during the public comment period and USACE responses will be included in the final EA. The NEPA process will conclude with either signing of a FONSI, the draft of which is found at the beginning of this document, or with a determination that an environmental impact statement is required.

5.0 List of Preparers

Name	Education	Years of Experience/ Area of Expertise	Responsibilities
Michael Snyder	B.A. Biology M.S. Biological Sciences	20 years/NEPA compliance and natural resources planning	Primary author of EA, compilation of main report, and 404(b)(1) evaluation.
Timothy Meade	M.A. Archeology	30 years/North American Archaeology	Cultural Resources lead responsible for Section 106 compliance.

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Appendix A
Section 404(b)(1) Evaluation

Emergency Dredging General Authorization Renewal Missouri River and Gasconade River Harbor

Section 404(b)(1) Evaluation

1. Introduction

This Section 404(b)(1) evaluation is for the renewal of the emergency dredging general authorization for the Missouri River within USACE Kansas City District's area of responsibility and for the Gasconade River harbor. The USACE proposed action is to perform emergency dredging to maintain authorized navigation channel dimensions to provide for safe navigation. Additional background information regarding the proposed action can be found in Chapter 1 of the Environmental Assessment. This evaluation meets the requirements found in 40 CFR 230, Section 404(b)(1): Guidelines for Specification of Disposal Sites for Dredged and Fill Material.

2. Project Description

- a. **Location:** Dredge locations would be random and dictated by navigation channel obstructions along the Missouri River (river miles 498.4 to 0.0) and the Gasconade River harbor (Gasconade river miles 0.0 to 0.4).
- b. **General Description:** A detailed description of the proposed action, including illustrations, is described in Chapter 2 of the Environmental Assessment. The USACE Proposed Action is to approve a general authorization for emergency dredging within the USACE area of responsibility from river mile (RM) 498.4 at Rulo, Nebraska to RM 0.0 at the mouth near St. Louis, Missouri. The scope of the Proposed Action also includes dredging the Gasconade Harbor, Gasconade RM 0.0 to 0.4. The authorization would be in effect from the date of renewal through December 31, 2030. The authorization would be reviewed by USACE after 5 years to determine if any updates are warranted.

Emergency dredging operations would occur during the navigation season, generally during low flow periods. Dredge locations would be random and dictated by navigation channel obstructions; however, USACE has identified 14 areas on the Missouri River that are currently experiencing navigation problems and may require emergency dredging. Emergency dredging may also be necessary to provide access for repair of an existing BSNP structure. Whenever possible, USACE would contract with commercial sand dredges to remove the sand for commercial use, with discharges limited to fines and oversized materials. The material dredged would be primarily sand, with discharge into the river as close as practicable to the extraction site unless a commercial sand dredger is

contracted to remove the material. In cases where commercial sand dredgers are performing the work, material extracted for commercial use would count towards the permitted annual allowable dredging amounts specified in that contractor's permit(s) in place at the time of the emergency dredging activity.

- c. **Authority:** USACE was authorized to construct and maintain the BSNP under the authorities of the Rivers and Harbors Acts of 1912, 1925, 1927, 1935, and 1945. The proposed dredging operations would be authorized pursuant to Section 404 of the Clean Water Act (33 USC 1344) and comply with regulations found at 33 CFR parts 335 through 338.

3. Review of Compliance (§ 230.10 a-d)

- a. No practicable alternative to the Proposed Action would have a less adverse impact on the aquatic ecosystem while meeting the project objectives. Information on the impacts of the Proposed Action to waters of the U.S. can be found in Chapter 3 of the Environmental Assessment.
- b. The Proposed Action would not violate any applicable state water quality standards, or applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act. USACE has determined that the Proposed Action would result in a determination of "may affect, but not likely to adversely affect" for the pallid sturgeon. The proposed action is not anticipated to jeopardize the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or result in the destruction or adverse modification of critical habitat. Furthermore, the Proposed Action would not violate the requirements of any federally designated marine sanctuary.
- c. The Proposed Action would not cause or contribute to significant degradation of waters of the United States. This includes any adverse effects on human health, life stages of organisms' dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values.
- d. Appropriate and practical steps have been taken to minimize potential adverse impacts on the aquatic ecosystem.

4. Technical Evaluation Factors (Subparts C-F)

a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

- 1) **Suspended particulates/turbidity:** While dredging would result in elevated suspended sediment concentrations along the suspended sediment plume during periods of low background suspended

sediment levels, the levels of suspended sediments from dredging would not likely exceed levels that occur naturally during high runoff events. The proposed action would not violate any general criteria of the Missouri Water Quality Standards, 10 CSR 20-7.037(3) (A)-(H).

- 2) **Water:** The project would not result in any long-term adverse impacts to water quality.
 - a) **Salinity:** Not applicable
 - b) **Water Chemistry:** Minor, short-term, and localized effects to water chemistry (see below) would primarily include an increase in turbidity due to dredging.
 - c) **Clarity:** A minor short-term increase in turbidity would occur during dredging activities. Even at the increased level the clarity would be within baseline conditions of the Missouri River and therefore not expected to adversely impact native species.
 - d) **Color:** A minor short-term change in color is possible due to the potential increased turbidity. Similar to Clarity above, any color change would be greatest during dredging and would quickly become unnoticeable within a short distance downstream. Any changes in color would be expected to be within the range that is typically found where natural erosion occurs along the river or out of tributaries during high flow events and therefore not expected to adversely impact native species or result in adverse aesthetic impacts.
 - e) **Odor:** No impacts are anticipated
 - f) **Taste:** Not applicable
 - g) **Dissolved Gas Levels:** No changes to dissolved gas levels are anticipated.
 - h) **Nutrients:** Any alluvial sediments and associated nutrients that may be mobilized under the Proposed Action are materials deposited from river transport that are in temporary storage in the floodplain. Under natural conditions, the river would flood, rework, remove, and deposit these materials in a dynamic fashion. Any sediment and nutrients being remobilized are not a net

addition to the system. This material, or its equivalent, would have been transported through the system by natural geomorphic processes in an unaltered river. This activity will not adversely affect life forms in the immediate project areas or in areas downstream.

i) **Eutrophication:** The Proposed Action would not result in any eutrophication to the Missouri River or other water bodies downstream.

3) **Current patterns and water circulation:** It is not anticipated that emergency dredging would occur at a frequency or rate that would noticeably affect bed degradation or water surface elevations on the lower Missouri River. Neither dredging nor the discharge of dredged material would cause permanent changes in circulation patterns or shoaling areas.

4) **Normal water fluctuations:** There are no anticipated changes to normal water fluctuations that would result from the Proposed Action. There would not be any significant change to existing water elevation on the Missouri River within the vicinity of emergency dredging.

5) **Salinity Gradients:** The Proposed Action would not impact any salinity gradients. The Missouri River is a freshwater system and this would not change as a result of the project.

b. Potential Impacts to the Biological Characteristics of the Aquatic Ecosystem (Subpart D)

1) **Threatened and endangered species:** This project “may affect but is not likely to adversely affect” pallid sturgeon. See the discussion in Chapter 3 of the Environmental Assessment and consultation documents included in Appendix B for further information.

2) **Fish, crustaceans, mollusks, and other aquatic organisms in the food web:** The magnitude and duration of impacts on aquatic habitat at dredge sites would be determined by the time required for recovery and repopulation of the benthic areas. Typically, the more naturally variable an aquatic habitat, the less the effect of dredging on that habitat. Aquatic organisms common to these naturally variable areas are adapted to unstable sediment conditions and can better withstand the stresses imposed by dredging. Thus, due to the high level of variability in the benthic habitats in the lower Missouri River, aquatic species present in these habitats are likely to be

better able to withstand and recover from the localized alteration of benthic habitat due to dredging. Many areas of coarse aggregate sediments (e.g., cobble and bedrock) that substrate-spawning species (e.g., sturgeon and sauger) are known to use are found on outside bends that are constantly flushed free of fine sediment.

Benthic organisms (fish and macro-invertebrates) living near the river bottom or in the substrate in the main channel areas could be subject to entrainment from dredging. The extent of mortality would be a function of the amount of tow traffic on a given river system, towboat speed, and traffic volumes during the period when larvae are most susceptible to shear stress. Studies show that entrainment from dredging would not likely be a substantial problem for many fish or shellfish species in water bodies experiencing periodic dredging.

It is expected that noise from the operation of dredges may result in avoidance of the dredging area by fish species sensitive to noise over the duration of the activity.

- 3) **Other wildlife:** Impacts to other terrestrial wildlife are not anticipated.

c. Potential Impacts on Special Aquatic Sites (Subpart E)

- 1) **Sanctuaries and Refuges:** The Big Muddy National Fish and Wildlife Refuge managed by the U.S. Fish and Wildlife Service has several units located along the lower Missouri River. Emergency dredging would not occur within the refuge units themselves and if spoil would occur in or near a Refuge unit, coordination with USFWS would occur.
- 2) **Wetlands:** The Proposed Action would not result in any direct impacts to wetlands. The dredging activities would occur in the Missouri River and spoil of material would avoid wetlands.
- 3) **Mud flats:** No mud flats would be impacted by the Proposed Action.
- 4) **Vegetated shallows:** No vegetated shallows would be impacted by the Proposed Action. Because of the velocity in the Missouri River, little to no rooted aquatic vegetation is located within the area.
- 5) **Coral reefs:** No coral reefs are found in the Missouri River.

- 6) **Riffle and pool complexes:** Because of the low gradient and sandy/silty nature of the Missouri River, stable riffle and pool complexes do not typically exist.

d. Potential Effects on Human Use Characteristics (Subpart F):

- 1) **Municipal and private water supplies:** The project would not impact any municipal or private water supplies. Disposal of dredged material would be restricted and would not occur within 500 feet upstream of any municipal water intake.
- 2) **Recreational and commercial fisheries:** The project would not affect the suitability of any recreational or commercial fisheries.
- 3) **Water-related recreation:** The project would not impair or destroy any resources which support recreation activities. There may be minor, short-term impacts to recreation during dredging operations due to restricted access.
- 4) **Aesthetics:** The Proposed Action would result in the short-term presence of dredges and associated equipment in the action area. Dredging is a common activity on the Missouri River and therefore this would not be out of character with the existing visual and aesthetics of the area. This topic was dismissed from further evaluation.
- 5) **Parks, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves:** No impacts are anticipated to these resources.

5. EVALUATION OF DREDGED OR FILL MATERIAL (Subpart G)

- a. General evaluation of dredged or fill material:** The material dredged would be primarily sand with discharge with discharge into the river as close as practicable to the extraction site, unless a commercial sand dredger is contracted to remove the material.

7. ACTIONS TO MINIMIZE ADVERSE EFFECTS (SUBPART H)

Steps to minimize impacts would include non-structural BMPs such as keeping heavy construction equipment out of the waterway whenever possible, protecting construction materials from precipitation/flooding, having spill containment plans for construction equipment, and using materials that are free from contaminants.

8. FACTUAL DETERMINATIONS (§230.11)

A review of the information in items 4 thru 7 of this report indicates that there is minimal potential for long-term adverse environmental effects of the proposed fill. Additionally, there is not expected to be any adverse cumulative or long-term, secondary impacts as a result of the project.

9. FINDINGS (§230.12)

The proposed emergency dredging general authorization renewal has been evaluated and determined to be in compliance with Clean Water Act Section 404(b)(1) guidelines, with the inclusion of appropriate and practical conditions to minimize pollution and adverse effects on the aquatic ecosystem.

Prepared by: _____
Michael Snyder
Environmental Resources Specialist
Environmental Resources Section

_____ Date

Reviewed by: _____
Mr. Jason Farmer
Chief, Environmental Resources Section
Planning Branch

_____ Date

Approved by: _____
William C. Hannan, Jr.
Colonel, Corps of Engineers
District Commander

_____ Date

Appendix B
U.S. Fish and Wildlife Service Coordination



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, KS 66502-2801
Phone: (785) 539-3474 Fax: (785) 539-8567

In Reply Refer To:
Consultation Code: 06E21000-2020-SLI-1236
Event Code: 06E21000-2020-E-03222
Project Name: USACE Emergency Dredging

September 24, 2020

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

To Whom It May Concern:

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

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the 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.

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*)(<https://www.fws.gov/birds/management/managed-species/eagle-management.php>), and wind projects affecting these species may require development of an eagle conservation plan (<https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>). Additionally, wind energy projects should follow the wind energy guidelines (<https://www.fws.gov/ecological-services/energy-development/wind.html>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php>

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

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

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

This species list is provided by:

Kansas Ecological Services Field Office

2609 Anderson Avenue
Manhattan, KS 66502-2801
(785) 539-3474

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following offices, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Missouri Ecological Services Field Office

101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Nebraska Ecological Services Field Office

9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
(308) 382-6468

Southern Illinois Sub-Office

Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 997-3344

Project Summary

Consultation Code: 06E21000-2020-SLI-1236

Event Code: 06E21000-2020-E-03222

Project Name: USACE Emergency Dredging

Project Type: DREDGE / EXCAVATION

Project Description: USACE proposes to complete emergency dredging activities within the Lower Missouri River from Rulo, NE to the mouth near St. Louis, MO. The purpose of the proposed action to the ensure a safe navigation channel that meets authorizes channel dimensions.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.304095994144674N93.34088448116023W>



Counties: Madison, IL | Atchison, KS | Doniphan, KS | Leavenworth, KS | Wyandotte, KS | Andrew, MO | Boone, MO | Buchanan, MO | Callaway, MO | Carroll, MO | Chariton, MO | Clay, MO | Cole, MO | Cooper, MO | Franklin, MO | Gasconade, MO | Holt, MO | Howard, MO | Jackson, MO | Lafayette, MO | Moniteau, MO | Montgomery, MO | Osage, MO | Platte, MO | Ray, MO | Saline, MO | St. Charles, MO | St. Louis, MO | Warren, MO | Richardson, NE

Endangered Species Act Species

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

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

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

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

-
1. [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
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Pallid Sturgeon <i>Scaphirhynchus albus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

Flowering Plants

NAME	STATUS
Mead's Milkweed <i>Asclepias meadii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8204	Threatened
Western Prairie Fringed Orchid <i>Platanthera praeclara</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

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.

Migratory Birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

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

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

NAME	BREEDING SEASON
<p>American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626</p>	Breeds Oct 15 to Aug 31

NAME	BREEDING SEASON
<p>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399</p>	Breeds May 15 to Oct 10
<p>Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Jul 31
<p>Buff-breasted Sandpiper <i>Calidris subruficollis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9488</p>	Breeds elsewhere
<p>Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974</p>	Breeds Apr 21 to Jul 20
<p>Dunlin <i>Calidris alpina arctica</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 1 to Aug 20
<p>Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941</p>	Breeds May 1 to Aug 31
<p>Hudsonian Godwit <i>Limosa haemastica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 20 to Aug 20
<p>Least Bittern <i>Ixobrychus exilis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6175</p>	Breeds Aug 16 to Oct 31

NAME	BREEDING SEASON
<p>Lesser Yellowlegs <i>Tringa flavipes</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Prothonotary Warbler <i>Protonotaria citrea</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 1 to Jul 31
<p>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Sep 10
<p>Ruddy Turnstone <i>Arenaria interpres morinella</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Rusty Blackbird <i>Euphagus carolinus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Semipalmated Sandpiper <i>Calidris pusilla</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Short-billed Dowitcher <i>Limnodromus griseus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9480</p>	Breeds elsewhere
<p>Smith's Longspur <i>Calcarius pictus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Wood Thrush <i>Hylocichla mustelina</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Aug 31

Probability Of Presence Summary

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

Probability of Presence (■)

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

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

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

Breeding Season (■)

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

Survey Effort (|)

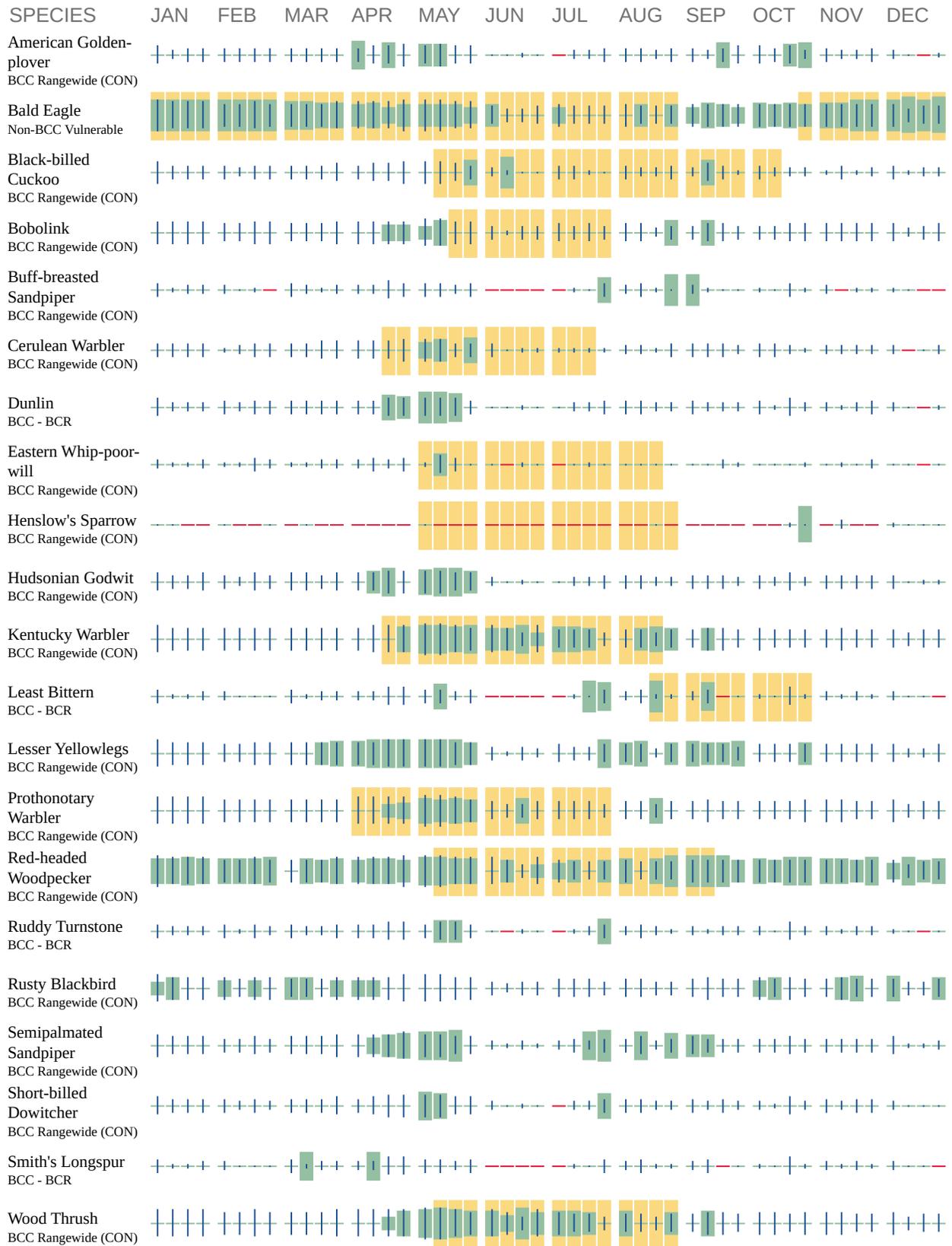
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

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

Survey Timeframe

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



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

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

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

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

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

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [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.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.



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:
Consultation Code: 03E14000-2020-SLI-3629
Event Code: 03E14000-2020-E-09029
Project Name: USACE Emergency Dredging

September 24, 2020

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

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 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

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following offices, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Kansas Ecological Services Field Office

2609 Anderson Avenue
Manhattan, KS 66502-2801
(785) 539-3474

Nebraska Ecological Services Field Office

9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
(308) 382-6468

Southern Illinois Sub-Office

Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 997-3344

Project Summary

Consultation Code: 03E14000-2020-SLI-3629

Event Code: 03E14000-2020-E-09029

Project Name: USACE Emergency Dredging

Project Type: DREDGE / EXCAVATION

Project Description: USACE proposes to complete emergency dredging activities within the Lower Missouri River from Rulo, NE to the mouth near St. Louis, MO. The purpose of the proposed action to the ensure a safe navigation channel that meets authorizes channel dimensions.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.304095994144674N93.34088448116023W>



Counties: Madison, IL | Atchison, KS | Doniphan, KS | Leavenworth, KS | Wyandotte, KS | Andrew, MO | Boone, MO | Buchanan, MO | Callaway, MO | Carroll, MO | Chariton, MO | Clay, MO | Cole, MO | Cooper, MO | Franklin, MO | Gasconade, MO | Holt, MO | Howard, MO | Jackson, MO | Lafayette, MO | Moniteau, MO | Montgomery, MO | Osage, MO | Platte, MO | Ray, MO | Saline, MO | St. Charles, MO | St. Louis, MO | Warren, MO | Richardson, NE

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

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

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

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

-
1. [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 <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Pallid Sturgeon <i>Scaphirhynchus albus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered
Topeka Shiner <i>Notropis topeka</i> (=tristis) Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4122	Endangered

Flowering Plants

NAME	STATUS
Decurrent False Aster <i>Boltonia decurrens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7705	Threatened
Western Prairie Fringed Orchid <i>Platanthera praeclara</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> https://ecos.fws.gov/ecp/species/5949#crithab	Final

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.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Nebraska Ecological Services Field Office
9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
Phone: (308) 382-6468 Fax: (308) 384-8835
<http://www.fws.gov//nebraskaes>

In Reply Refer To:
Consultation Code: 06E22000-2020-SLI-0528
Event Code: 06E22000-2020-E-00898
Project Name: USACE Emergency Dredging

September 24, 2020

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

To Whom It May Concern:

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

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the 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.

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

Attachment(s):

- Official Species List
 - Migratory Birds
 - Wetlands
-

Official Species List

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

This species list is provided by:

Nebraska Ecological Services Field Office

9325 B South Alda Rd., Ste B
Wood River, NE 68883-9565
(308) 382-6468

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following offices, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Kansas Ecological Services Field Office

2609 Anderson Avenue
Manhattan, KS 66502-2801
(785) 539-3474

Missouri Ecological Services Field Office

101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Southern Illinois Sub-Office

Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 997-3344

Project Summary

Consultation Code: 06E22000-2020-SLI-0528

Event Code: 06E22000-2020-E-00898

Project Name: USACE Emergency Dredging

Project Type: DREDGE / EXCAVATION

Project Description: USACE proposes to complete emergency dredging activities within the Lower Missouri River from Rulo, NE to the mouth near St. Louis, MO. The purpose of the proposed action to the ensure a safe navigation channel that meets authorizes channel dimensions.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.304095994144674N93.34088448116023W>



Counties: Madison, IL | Atchison, KS | Doniphan, KS | Leavenworth, KS | Wyandotte, KS | Andrew, MO | Boone, MO | Buchanan, MO | Callaway, MO | Carroll, MO | Chariton, MO | Clay, MO | Cole, MO | Cooper, MO | Franklin, MO | Gasconade, MO | Holt, MO | Howard, MO | Jackson, MO | Lafayette, MO | Moniteau, MO | Montgomery, MO | Osage, MO | Platte, MO | Ray, MO | Saline, MO | St. Charles, MO | St. Louis, MO | Warren, MO | Richardson, NE

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

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

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

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

-
1. [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
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Pallid Sturgeon <i>Scaphirhynchus albus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

Flowering Plants

NAME	STATUS
Western Prairie Fringed Orchid <i>Platanthera praeclara</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

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

Migratory Birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

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

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

NAME	BREEDING SEASON
American Bittern <i>Botaurus lentiginosus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6582	Breeds Apr 1 to Aug 31
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

NAME	BREEDING SEASON
<p>Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626</p>	Breeds Oct 15 to Aug 31
<p>Dunlin <i>Calidris alpina arctica</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680</p>	Breeds elsewhere
<p>Hudsonian Godwit <i>Limosa haemastica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 20 to Aug 20
<p>Least Bittern <i>Ixobrychus exilis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6175</p>	Breeds Aug 16 to Oct 31
<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 1 to Jul 31
<p>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Sep 10
<p>Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere

NAME	BREEDING SEASON
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere

Probability Of Presence Summary

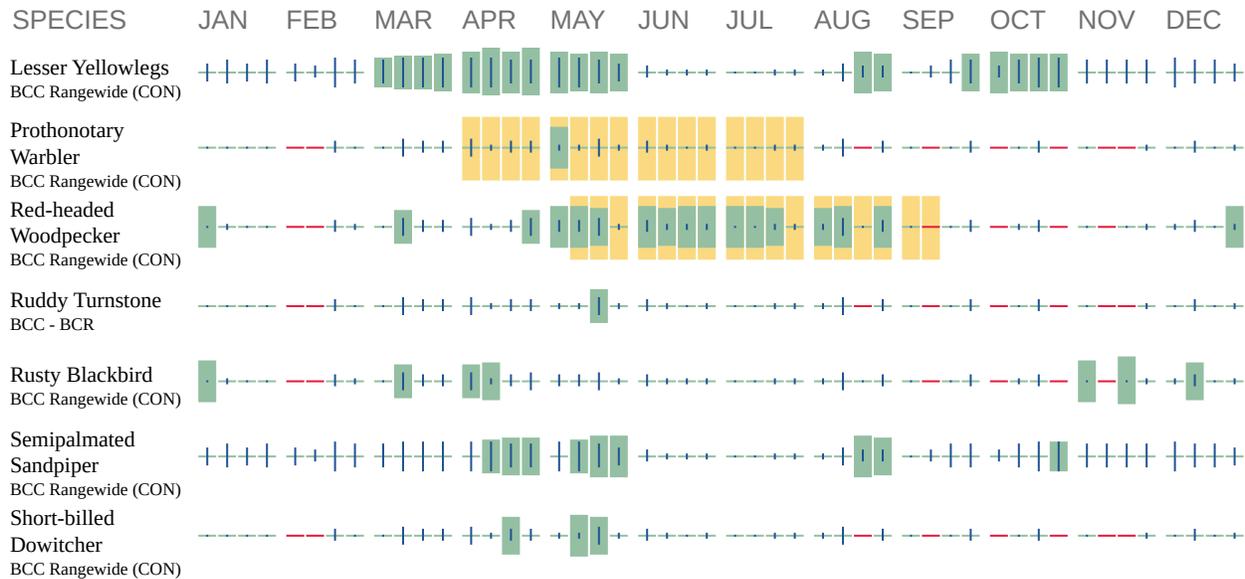
The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation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

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

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

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

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

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

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [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.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

Appendix C

Cultural Resources

**CULTURAL RESOURCE ASSESSMENT
Section 106 Review**

CONTACT PERSON/ADDRESS

C:

Richard A. Skinker
Environmental Resources Section
Corps of Engineers, Kansas City District
601 East 12th Street, Room 843
Kansas City, Missouri 64106

Niama Chestnut, EPA

PROJECT:

Kansas City District Application No. 200400628

FEDERAL AGENCY

COE

COUNTY:

MULTI

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

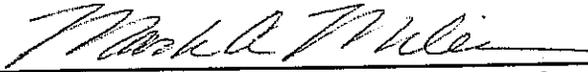
After review of initial submission, the project area has a low potential for the occurrence of cultural resources. A cultural resource survey, therefore, is not warranted.

Adequate documentation has been provided (36 CFR Section 800.11). There will be "no historic properties affected" by the current project.

An adequate cultural resource survey of the project area has been previously conducted. It has been determined that for the proposed undertaking there will be "no historic properties affected".

For the above checked reason, the State Historic Preservation Office has no objection to the initiation of project activities. PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK ARE CHANGED, A BORROW AREA IS INCLUDED IN THE PROJECT, 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 compliance with Section 106 of the National Historic Preservation Act, as amended.

By:



Mark A. Miles, Deputy State Historic Preservation Officer

February 18, 2004

Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102

For additional information, please contact Judith Deel, (573) 751-7862. Please be sure to refer to the project number:
C829

Enclosure 12