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The habitat remediation proposed for the St. Clair River could begin in the summer of 2014. The work proposed for the Detroit River could occur over the next five years as funding becomes available.

## CONTACT

For additional information concerning this decision, contact:

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**FINDING OF NO SIGNIFICANT IMPACT AND DECISION RECORD**  
**REMEDIATING NATIVE FISH SPAWNING HABITAT IN THE ST. CLAIR -**  
**DETROIT RIVER SYSTEM**  
**U.S. GEOLOGICAL SURVEY**  
**ST. CLAIR AND DETROIT RIVERS, SOUTHEAST MICHIGAN**  
**GREAT LAKES SCIENCE CENTER, ANN ARBOR**  
**WASHTENAW COUNTY, MICHIGAN**

The significance of environmental impacts must be considered in terms of context and intensity. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human and national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. In the case of a site-specific action, significance usually depends upon the effects in the locale rather than in the world as a whole. Intensity refers to the severity or degree of impact. (40 CFR 1508.27)

## **CONTEXT**

The St. Clair-Detroit River System historically served as the spawning grounds for many native fish species that migrated from Lakes Huron and Erie into these rivers during spawning season. Beginning in 1874, the St. Clair-Detroit River System was systematically and extensively modified by the construction of deep water channels for commercial shipping. Large-scale blasting and dredging removed natural limestone bedrock reefs where millions of fish deposited their eggs. The construction of commercial shipping channels has greatly reduced the quantity and quality of fish, wildlife, their habitat and the life-history connections between remaining habitats (e.g., spawning and nursery grounds). These and other impacts, including overfishing, have dramatically reduced populations of native fishes, particularly lake sturgeon. In recent decades, non-spawning habitat stressors have been addressed, making spawning one of the last factors of concern in the St. Clair-Detroit River System.

The USGS Great Lakes Science Center (Ann Arbor, Michigan), in collaboration with a number of partners, is proposing to establish a series of native fish spawning reefs in the St. Clair and Detroit Rivers in southeast Michigan. The proposed spawning reefs are essentially beds of loose rock placed on the river bottom. The reefs are 1- 4 acres in size and are intended to re-create habitat destroyed during the construction of commercial shipping channels. This habitat remediation will benefit native fish in both rivers as well as the connected lakes, potentially benefiting a river system more than 90 miles long. Potential negative impacts of the Preferred Alternative are likely to be short-term, highly localized and relatively minor, such as the visual impact and inconvenience created by vessels placing rock on the river bottom when establishing the reef beds. The No Action Alternative would hinder the recovery of native fish populations in the rivers and connected lakes. The St. Clair and Detroit Rivers form an international boundary between highly developed regions of Michigan and Ontario. As such, the recovery of native fish has the potential to benefit a large and important fishing and outdoor recreation community.

## INTENSITY

The intensity of effects was considered in terms of the following:

1. **Impacts may be both beneficial and adverse. A significant effect may exist even if the Bureau believes that, on balance, the effect will be beneficial.** Consideration of the intensity of environmental effects is not biased by beneficial effects of the action.
2. **The degree to which the proposed action affects public health or safety.** There will be no significant effects on public health and safety because the spawning reef projects and rock placement methods have been developed to avoid impacts on recreational and commercial navigation as confirmed by state and federal permitting authorities. (See EA Section 3.3: Social Impacts)
3. **Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** There will be no significant effects on unique characteristics of the area, because the reefs are located on the river bottom below 25 to 45 feet of water where the river has been carefully surveyed and found to be hard-pan clay devoid of structures or cultural artifacts, with relatively little aquatic life (See EA Section 3.11: Tribal Consultation, and Section 3.12 Historic, Architecture, Archeology and Cultural Resources)
4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** The effects on the quality of the human environment are not likely to be highly controversial. There is no known credible scientific controversy over the impacts of the proposed action. (See EA Section 1.2: Purpose and Need)
5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The Bureau has experience with actions like the one proposed. The analysis shows the effects are not uncertain, and do not involve unique or unknown risk. (See EA Section 1.2.4 Research Strategies and Consensus Based Approach and Section 3.13 Indirect and Cumulative Impacts)
6. **The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.** The action is not likely to establish a precedent for future actions with significant effects, because the proposed projects are expensive and carefully scrutinized by a range of agencies and groups, including state and federal permitting agencies. (See EA Section 4: Coordination and Consultation)
7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** There are no cumulative impacts that are negative and significant. Any potential negative effects of action are short term and limited to the local area, and there are no other effects that would be additive to the effects of the proposed action. (See EA Section 3.13 Indirect and Cumulative Impacts)
8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed, or eligible for listing, in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, because there are none in the vicinity of the proposed reef sites on the

river bottom. The action will also not cause loss or destruction of significant scientific, cultural, or historical resources. The State Historic Preservation Office has reviewed all five project locations and not identified any potential impacts on cultural resources. (See EA Section 3.12: Historic, Architecture, Archeology, and Cultural Resources)

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species act of 1973. (See EA Section 3.7 Federal Threatened and Endangered Species, and Section 3.8 State Threatened and Endangered Species)
10. **Whether the action threatens to violate Federal, State, or local law or requirements imposed for the protection of the environment.** The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA and all permits will be secured before establishing any reef habitat structures. (see EA Section 4: Coordination and Consultation). The action is consistent with the St. Clair and Detroit River Area of Concern Stage II Remediation Action Plans. (See EA Section 1.2.3: Remediation of Areas of Concern)

After considering the effects of the actions analyzed, in terms of context and intensity, I have determined that these actions will not have a significant effect on the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

## DECISION

Based upon my review of the Remediating Fish Spawning Habitat in the St. Clair – Detroit River System Environmental Assessment (EA), I have decided to implement the Preferred Alternative, which involves establishing native fish spawning reefs using quarried limestone at five locations on the bottomlands of the St. Clair and Detroit Rivers.

## DECISION RATIONALE

The need for the proposed project is based on the loss of riverine ecological function and resilience caused by historic alterations to the hydrology and riverbed for navigational infrastructure. The U.S. Geological Survey (USGS) Great Lakes Science Center (Ann Arbor, Michigan), in collaboration with partners, proposes river habitat remediation to benefit a group of native fish with similar spawning habitat requirements, including: lake sturgeon, lake whitefish, and walleye. This guild of native fishes seeks out rocky areas in fast-flowing waters to deposit and fertilize their eggs. Spawning habitat created by the proposed projects is designed to possess adequate interstitial spaces to incubate and protect fish eggs from being dislodged by water currents or consumed by predators that eat fish eggs.

The EA, *Remediating Native Fish Spawning Habitat in the St. Clair-Detroit River System*, studies one action alternative (the Preferred Alternative) and the No Action alternative. The No Action Alternative would result in the continued impairment of the St. Clair Detroit River System's native fish community. The Preferred Alternative proposes to establish a series of native fish spawning reefs in the two large rivers (the St. Clair and Detroit Rivers) that connect Lake Huron and Lake Erie in southeast Michigan. The proposed spawning reefs would consist of

beds of loose rock, which are intended to recreate habitat destroyed during the historic construction of commercial shipping channels. The project design and location are based on three pilot rock reef projects established in the river system over the past ten years.

Specifically, the Preferred Alternative proposes installation of fish spawning reefs in five locations; two spawning reefs are proposed on St. Clair River bottomland and three spawning reefs on Detroit River bottomland. The St. Clair River projects are already funded and have received aquatic resource permits. In the Detroit River, three general spawning reef locations have been selected, but refinement and design is still in process; these three locations are proposed for installation over a period of five years as funding becomes available.

Both the St. Clair and Detroit Rivers have been identified as Areas of Concern (AOCs) under the U.S.-Canada Great Lakes Water Quality Agreement (Annex 2 of the 1987 Protocol and the 2012 Amendment) because they experienced severe environmental degradation resulting in a number of Beneficial Use Impairments (BUIs). The remediation plans for both AOCs have numerous aspects, including mitigation activities to eliminate the BUIs for: 1) Loss of fish and wildlife habitat; and 2) Degradation of fish and wildlife populations. As such, the Preferred Alternative would become part of a larger overall remediation effort of the rivers and for this reason the St. Clair River projects have already received funding through the Federal Great Lakes Restoration Initiative.

The proposed habitat remediation will benefit native fish in both rivers as well as the connected lakes, potentially benefiting a river system more than 90 miles long. Potential negative impacts of the Preferred Alternative are likely to be short-term, highly localized and relatively minor, such as the visual impact and inconvenience created by vessels placing rock on the river bottom when establishing the reef beds. The No Action Alternative would hinder the recovery of native fish populations in the rivers and connected lakes.

The EA, *Remediating Native Fish Spawning Habitat in the St. Clair-Detroit River System*, documents the environmental analysis and conclusions upon which this decision is based.

## **PUBLIC INVOLVEMENT**

The proposed action has been in the planning stages for several years and plans have been modified based on feedback received. People were invited to review and comment on the proposed actions through direct conversations with key stakeholders, including home visits and phone calls with owners of property adjacent to the proposed reefs, direct consultation with shipping industry representatives and permitting agencies, and a wide range of presentations to fishing and environmental groups and other scientists. In addition the USACE solicited public comments as part of their permitting process and received comments from other stakeholders and agencies, including the US Coast Guard. The EA describes in detail how agencies and people were consulted in Section 3.3: Social Impacts and Section 4: Coordination and Consultation.

## **FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS**

This decision is consistent with the mission and research agenda of the USGS Great Lakes Science Center. The project was designed in conformance with the St. Clair and Detroit River Area of Concern Remediation Plans. In addition to the consultation conducted in conjunction with the EA (e.g., SHPO, threatened and endangered species), permits and approvals will be

secured from the Michigan Department of Natural Resources, the US Army Corp of Engineers, and US Department of State before remediating of any individual project sites.

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## **IMPLEMENTATION DATE**

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