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## Conservation Plan for the Interior Least Tern, Pallid Sturgeon, and Fat Pocketbook Mussel in the Lower Mississippi River (Endangered Species Act, Section 7(a)(1))

### Mississippi River Geomorphology and Potamology Report No. 4

Section 7(a)(1) of the Endangered Species Act (ESA) requires all federal agencies to use their authority as appropriate to carry out programs for the conservation (i.e., recovery) of endangered and threatened species. Since the early 2000s, the U.S. Army Corps of Engineers (USACE), Mississippi Valley Division (MVD), has worked with the U.S. Fish and Wildlife Service (USFWS), the Lower Mississippi Conservation Committee, and state conservation agencies to identify and resolve endangered species and ecosystem management issues. The goal was to protect listed species without impacting the USACE civil works missions of managing flood risks and facilitating navigation in the Lower Mississippi River (LMR). The Conservation Plan was prepared collaboratively by USACE and the USFWS, submitted to USFWS as USACE's Biological Opinion, and followed by issuance of a non-jeopardy Biological Opinion by USFWS. The Plan provided the programmatic mechanisms by which the Channel Improvement Program (CIP) of the Mississippi River and Tributaries (MR&T) project was being utilized to implement conservation measures without major impacts on USACE's primary mission. These measures will maintain and improve habitat values within the LMR for recovery of endangered and other sensitive species inhabiting the river channel.

### Endangered Species in the LMR

There are three species in the LMR listed as "Endangered" under the Endangered Species Act: the Interior Least Tern (Least Tern or ILT), the Pallid Sturgeon, and the Fat Pocketbook Mussel. Least Terns are fish-eating birds that nest on open sandbars in the LMR. Annual nesting season tern counts documented a persistent increase in the number of ILT known to utilize the LMR, from approximately 300 birds in 1985, to over 12,000 in 2011. Pallid Sturgeon occupy the bottom of the LMR — usually in deep, fast-flowing water — and can live more than 25 years in their southern range. Historical records of Pallid Sturgeon in the 20<sup>th</sup> century are extremely rare, and the USFWS was able to document only 28 records of the fish from the LMR prior to its listing in 1990; none were documented in the Atchafalaya River. Today, more than 500 subadults and adults have been documented in the LMR and more than 600 in the Atchafalaya River. The Fat Pocketbook Mussel is a freshwater pearly mussel native to the Ohio River system and Mississippi River drainage. This species is relatively large, with adults sometimes reaching over five inches in length; it is aptly named for its valve morphology, which is highly inflated and obovate. The Fat Pocketbook Mussel was never considered abundant in the LMR channel, but it does occupy depositional areas in oxbow lakes, sloughs, secondary channels, and dike fields.

### Components of the Conservation Plan

As part of the MR&T, the CIP provides low-water navigation in the main channel using river training structures. Over the years, there has been a gradual loss of off-channel habitat that threatened populations of the endangered species. It became apparent that the very programs significantly affecting the river are potentially the most important and cost-effective tools to maintain and enhance its ecological functions. This was accomplished by preparing a Conservation Plan that incorporates ecological engineering opportunities during the design phase of channel improvement and channel maintenance projects under the authority of Section 7(a)(1) of the ESA. There are six primary components of the Plan: environmental setting, authorized project description, endangered species accounts, LMR environmental baseline, effects analysis, and management and conservation measures in the LMR.

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### Conservation Measures

The Mississippi Valley Division and Districts in the LMR identified strategies and actions — also referred to as conservation measures — to avoid and minimize adverse effects of the CIP and to continue diversifying habitat:

- Avoid adverse impacts directly associated with CIP engineering practices, including compliance with seasonal restrictions for construction and dredging; avoid closure of secondary channels; and avoid impacts of dikes on gravel bars.
- Develop and implement channel construction and maintenance operational guidelines to diversify habitat. This strategy has been ongoing and includes notching dikes, reestablishing connectivity of secondary channels, and using innovative river training structures such as chevrons and hardpoints as conservation tools.
- Develop cost-effective monitoring programs, as funding allows, to document habitat preferences and population trends of the listed species in response to channel operations and maintenance.
- Share restoration, research, and monitoring responsibilities and costs by maintaining strong partnerships with other federal and state agencies and NGOs.

### Future

The Conservation Plan ensured that all future channel operations and maintenance activities would be in compliance with the Endangered Species Act. The Plan also demonstrated that a collaborative, cost-effective approach to using Section 7(a)(1) of the Act can successfully protect endangered species; additionally, the Plan can serve as a model for future ESA actions undertaken by USACE.

### For More Information

To access the full version of *Conservation Plan for the Interior Least Tern, Pallid Sturgeon, and Fat Pocketbook Mussel in the Lower Mississippi River (Endangered Species Act, Section 7(a)(1))*, click the following link:

<http://acwc.sdp.sirsi.net/client/search/asset/1040663>.

Additional MRG&P reports, historic reports, and MRG&P information can be accessed from the MVD Publications and Technology Transfer website:

[http://www.mvd.usace.army.mil/mrgp\\_pubs](http://www.mvd.usace.army.mil/mrgp_pubs).

### Points of Contact

Dr. Jack Killgore

[Jack.Killgore@usace.army.mil](mailto:Jack.Killgore@usace.army.mil)

Dr. Barb Kleiss

[Barbara.A.Kleiss@usace.army.mil](mailto:Barbara.A.Kleiss@usace.army.mil)

### Summary of Significant Findings

- Section 7(a)(1) of the Endangered Species Act can be used to collaboratively define needs and measures to protect listed species, and reach full compliance with the Act.
- A concerted effort lasting over a decade was necessary by USACE and partners to determine status and trends of the listed species and to develop final conservation measures.
- USACE can use their own authority and expertise to avoid and minimize impacts of channel construction and maintenance in the LMR — including application of innovative river engineering techniques.
- Collaboration with other federal and state agencies early in the planning process resulted in cost-effective, discretionary conservation measures agreeable to all parties.
- Conservation Plans offer greater predictability and efficiency in ESA compliance and streamline the Biological Opinion process under 7(a)(2) of the Act.

