

# **Implementation of the Biological Opinion**

## **Annual Progress Report Fiscal Year 2005**

**U.S. Army Corps of Engineers  
Mississippi Valley Division  
St. Louis District**

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**Background**

In April 1998, Region 3 of the U.S. Fish and Wildlife Service (FWS) and Mississippi Valley Division (MVD) of the U.S. Army Corps of Engineers entered into formal Section 7 consultation under the Endangered Species Act (ESA). The consultation covered the continuation of operation and maintenance activities on the Upper Mississippi River Nine Foot Navigation Channel. Specifically addressed within the consultation were operation and maintenance direct effects, navigation traffic indirect effects, recreation indirect effects, and cumulative effects. The direct effects of operation and maintenance included navigation channel dredging, dike and revetment maintenance, water level management, and management of Corps lands. A 1998 baseline was established for the effects and a fifty-year evaluation period (to 2048) was used.

Formal consultation was concluded in August 2000, when the MVD Commander sent a letter to the Director of Region 3 FWS setting forth an implementation plan for the Corps project that would accommodate the findings of the FWS's Biological Opinion. The species of concern covered in the biological opinion that are germane to the St. Louis District include:

Decurrent False Aster – Likely to be adversely affected, but not jeopardized  
Bald Eagle – Impacts negligible or offset by management actions; No incidental take  
Indiana Bat – Impacts negligible or offset by management actions; No incidental take  
Interior Least Tern – Incidental take with Reasonable and Prudent Measures (RPM)  
Pallid Sturgeon – Jeopardy with Reasonable and Prudent Alternatives (RPA), incidental take, and RPMs.

**FY05 Activities**

The following is an outline of St. Louis District activities for fiscal year 2005. This was the fifth year of implementation activities under the Biological Opinion. For the immediate future, funding and manpower requirements will continue to be addressed on a year by year basis. Our partners, in particular the states, have voiced similar concerns with regard to funding and manpower constraints. With this in mind, we will continue to closely monitor the burden placed on their agencies as a result of meetings and planning efforts required under this Biological Opinion and will work with them to minimize impacts where possible.

- 1. River Resources Action Team (RRAT) - Executive Team. (RPA 2 & 4, Term and condition 4, Pallid Sturgeon; Term and Condition 4, Least Tern).** The River Resources Action Team met in a scheduled formal Executive Session two times during the fiscal year, in November 04 and June 06. The November 2004 meeting was held at the Rivers Project Office. Topics for the formal session included a quick review of FY04 Corps activities,

Regulating Works Project, Avoid & Minimize Program, Dike & Revetment Program, Dredging Program, Biological Opinion Program, Environmental Management Program, and the Continuing Authority Program projects. An update of agency status (organization, initiatives, budget, etc.) was given by the U.S. Army Corps of Engineers, FWS, Missouri Department of Conservation, and Illinois Department of Natural Resources. The Team performed a self evaluation to see if and where improvements could be made. A brief overview of the current status of the Integrated Feasibility Report and Programmatic Environmental Impact Statement for the UMR-IWW System Navigation Feasibility Study (currently referred to as NESP - which stands for Navigation and Ecosystem Sustainability Program) was given. The Navigation and Ecosystem Sustainability Program is a long-term program of navigation improvements and ecological restoration for the Upper Mississippi River System (UMRS) over a 50-year period that will be implemented in increments through integrated, adaptive management. The team discussed what potential impacts the study could have on the RRAT process. The June 2005 meeting was held aboard the M/V Benyaurd and Vicksburg District inspection barge at the Cape Girardeau Riverfront. The team reviewed the format of the first two days of the annual RRAT coordination boat trip. The newly formed NESP Science Panel briefed the team about their structure and function. The Science Panel will primarily serve an advisory role to project delivery teams for the NESP. The team and Science panel discussed the roles of each and how they see each working with the other. The next RRAT Executive Team meeting will be held in November 2005.

2. **River Resources Action Team (RRAT) – Technical Team (RPA 2 & 4, Term and Condition 4, Pallid Sturgeon; Term and Condition 4, Least Tern).** The Technical Team met two times during the fiscal year, in April and June. The April 2005 meeting was held at the Great Rivers Museum, Distance Learning Classroom. The topics included NESP Navigation Activity update, NESP Environmental Activity update, NESP Institutional Arrangements, NESP Science Panel, Hydropower at L&D 24 and 25, Environmental Management Program, Regulating Works Project, Dredging Program, Avoid and Minimize Program, Dike and Revetment Program, and Biological Opinion Program. There were agency updates from the FWS and MDOC. There was no agency update from IDNR. The June 2005 meeting was held aboard the M/V Benyaurd and Vicksburg District inspection barge as they traveled from the Corps Service Base (St. Louis, MO) down to Cairo, IL, over three days. Topics included the Middle Mississippi River and the St. Louis Harbor, new Mississippi River Bridge, chevrons and dike extension in the St. Louis Harbor, business at Lange-Stegman, a St. Louis Harbor Facility, fish passage at the Chain of Rocks Low Water Dam, Chain of Rocks and sturgeon study, Illinois sturgeon issues, marine safety and Homeland Security of Inland Waterway System, the Landscape Architect and the Greenways of the Missouri and Mississippi Rivers, Jefferson Barracks Side Channel and island creation, woody structures, NESP - Herculaneum Side Channel and Island Creation, Missouri River flow forecast and effects on the Mississippi River, NESP - Harlow Study, Bolters Bar and Iowa Island success story, American Land Conservancy update, the outlook for the National Corn Growers, Middle Mississippi River Partnership, Fort Chartres- D&R revised design, Fisheries Study of dike reaches, a new fish friendly hydropower technology for locks and dams, Kaskaskia River potential NESP project, destruction of Bass population on the Kaskaskia River by the Asian Carp, opportunities for successful commercial

fisheries, first open river Chevron at UMR mile 103, UMR mile 100 Chevrons and Red Rock Landing D&R work, Mile 100 Islands - Wilkinson Island initiative, NESP program outlook, the Science Panel, Grand Tower D&R work, RRAT reporting requirements for FY05, wildlife refuge and land acquisition, geomorphology of the Middle Mississippi River and a blueprint for future restoration , Biological Opinion Program, EMP Projects, Institutional Arrangements, Schenimann Chute project status, Schenimann Chute and fisheries monitoring, Pool Plans, Carroll Island proposed D&R work, Iowa to Squaw Island, Hydraulic Sediment Response (HSR) models, Dike and Revetment Program, Regulating Works Project, Sante Fe Chute - recent engineering and environmental trends, NESP - Forest Management, Least Tern sites, NESP - Buffalo Chute, Dry Bayou floodplain restoration, dredging issues on the Middle Mississippi River and planning for future flow reductions, and Sister Chute environmental dredging project.

3. **Pallid Sturgeon Habitat, Life History, and Population Demographics study (RPA 1, Pallid Sturgeon).** This study is being conducted to determine the current status, habitat preferences, life history, and demographics of the pallid sturgeon. Field work was completed by the Missouri Department of Conservation, Southern Illinois University at Carbondale, and the Corps Engineer Research and Development Center. A draft report will be developed in FY06 and will be used in the development of the pallid sturgeon conservation and restoration plan.
4. **Pallid Sturgeon Conservation and Restoration Plan (RPA 2, Pallid Sturgeon).** The development of this plan continued in FY05 to the extent possible exclusive of the results of ongoing studies.
5. **Pallid Sturgeon conference (RPA 1, & 2, Pallid Sturgeon).** Dr. Thomas M. Keevin, St. Louis District Corps, organized and hosted the range-wide *Scaphirhynchus* Conference in January, 2005. This conference was held in St. Louis, MO. Presentations included information on diet, age and growth, abundance, movement patterns, habitat preference, genetics, morpho-meristics/identification, and harvest issues. The proceedings of the conference will be used to advance the Pallid Sturgeon Conservation and Restoration Plan.
6. **Jefferson Barracks, UMR River Miles (RM) 171.5-168.5 (RPA 4, RPM 1, Pallid Sturgeon).** This reach of the river has been experiencing a dredging problem for many years. An HSR model was completed in 2001 for RM 176.0 -166.0. An alternative was selected that uses non-traditional structures that reduce dredging requirements, improve navigation, and intend to enhance aquatic habitat and diversity. One of the four existing dikes (RM 169.45 [L]) along this reach was notched and partially raised this year according to the accepted alternative. The remaining three existing dikes are scheduled to be modified in FY06.
7. **Fort Chartres/Establishment Island new chevrons and rootless dike between RM 132.5-129.5 R (RPA 2 & 4, Term and Condition 2, Pallid Sturgeon).** This reach of the river has been experiencing a dredging problem for many years. After coordination with stakeholders it was decided to construct three chevrons, two spur dikes, and one rootless dike. The current plan is to award a contract for construction in FY06. Because there was

concern from partner agencies that fish species important to the ecology of the MMR, as well as obligate main channel fishes that rely on inside bends and channel crossovers, would be adversely affected (reduced locally in number because of habitat modification) by the addition and modification of channel training structures in the Establishment Island complex, pre-construction monitoring (biological & physical) for the years 2002-2004 was conducted by MDOC and a report is due in FY06.

8. **Mile 100(R) Islands study (RPM 1, Pallid Sturgeon).** Teri Allen (St. Louis District Corps biologist) continued the study of fish assemblages at the mile 100 dike field located near Chester, Illinois between RM 100.1 and 98.9. The area consists of six notched dikes and five islands. The dikes were built in the early 1970's for the expressed purpose of sediment management and channel improvement. Notches were designed in the dikes at the time of construction with the intent of creating a scour pattern that would eventually form a secondary channel and associated islands. The study is designed to compare the fish assemblages at the island sites to nearby "non-notched" or "control" dikes (5 sites between RM 100.4 and 107.4(R)). Teri will be looking at spatial and temporal differences in such parameters as fish species diversity and composition, habitat variation, and water quality. The study is intended to examine the benefits of notched dikes and island creation to fish communities.
9. **Red Rock/Tower Rock project RM 93.0-86.0 (RPA 2 & 4, Term and Condition 2, Pallid Sturgeon; RPM 1, Term and Condition 2 Least Tern).** The St. Louis District prepared the Tier II Biological Assessment and accomplished the necessary coordination for the Red Rock – Tower Rock project scheduled for construction in FY06 per agreement with FWS Region 3 and MVD as first stage implementation of the Pallid Sturgeon Conservation and Restoration Plan. The HSR modeling effort for the Red Rock to Tower Rock reach (RM 93.0 – 86.0) was completed in 2002. In 2005 a new chevron was constructed at RM 90.4(R). The study reach lies within an area that was identified in the Corps Stone Dike Alterations Project Report (2002) as an area lacking habitat diversity. This reach was chosen for enhancement due to the large number of un-notched dikes, the very minimal dredging that occurs, and the location of the right descending bank firmly against the rock bluff line, which would minimize impacts to the bankline. The Pallid Sturgeon Conservation and Restoration Planning team was involved in the study from the outset and has chosen an alternative which is targeted at improving Pallid Sturgeon habitat for this reach of the river.
10. **Environmental dredging at Sister Chute RM 12.0 R (RPA 4, Term and Condition 4, Pallid Sturgeon; Term and Condition 4, Least Tern).** After initial coordination and evaluation with state and federal stakeholders, it was decided to dredge the lower end of Sister Chute with the primary purpose of creating overwintering fish habitat. The project is also being conducted to specifically benefit the Pallid Sturgeon by providing backwater habitat that is anticipated to provide an improved food base. Also, the mouths of chutes appear to be important habitat for larval sturgeon in general. In FY05, the Corps prepared an EA and Tier II BA for this effort and secured the necessary section 401 and 404 permits (Clean Water Act). The dredge cut will create a channel to connect the open river area at the lower end of the chute to the deep scour hole for better connectivity during low water

throughout critical over wintering timeframes. The additional water volume, improved habitat conditions, and connectivity during the summer months in these deepened chutes should also improve their nursery function. This type of backwater habitat is in limited supply in the middle Mississippi River and will serve an important improved nursery function. The dredge cut will also provide other aquatic species with greater potential use of the side channel for resting, spawning and feeding opportunities. Restoration of side-channels is one of the seven types of habitat restoration suggested by the FWS in the Biological Opinion. In addition, side channel restoration has been a priority of the natural resource agencies in Illinois and Missouri. Implementation of this environmental dredging project maintains the St. Louis District's commitment to comply with the endangered species act. The project is scheduled for completion in FY06.

- 11. Special issue of the Journal of applied Ichthyology (RPA 1 & 2, Pallid Sturgeon).** Dr. Tom Keevin is co-editing a special issue of the *Journal of Applied Ichthyology* on the life history of the sturgeon genus *Scaphirhynchus*. These papers are a result of the *Scaphirhynchus* 2005 Conference hosted by the St. Louis District. This special issue synthesizes a number of research disciplines working on sturgeon conservation and provides resource biologists with new information regarding many attributes of sturgeon life history.
- 12. Interior Least Tern (Term and Condition 3, Least Tern).** Continued coordination with the Interior Least Tern Working Group (ILTWG) and investigated expanding the nesting and usage survey effort. Participated in the annual ILTWG survey between Cape Girardeau, MO, and Baton Rouge, LA. Completed maintenance on Least Tern Habitat Island (RM 201.6[R]) that included herbicide to remove and control perennial vegetation and light disking/harrowing. Continued random monitoring for Least Tern within the Riverlands Migratory Bird Sanctuary through partnership with St. Louis Audubon Society.
- 13. *Boltonia decurrens* (Decurrent False Aster) -** Coordination with FWS Recovery Team and Team Leader continued in FY05.
- 14. Emergency Dredging Biological Assessment (Term and Condition 5, Pallid Sturgeon).** In FY00, the Corps received a Biological Opinion which contains an Incidental Take statement with Reasonable and Prudent Measures and Terms and Conditions to be implemented should dredging become necessary during the 12 April through 30 June timeframe. No emergency dredging was required during FY05.

### **Projected FY06 Activities**

Based on current projection of FY06 funding in the St. Louis District, we anticipate proceeding with the following work. However, these are projections only, and may require adjustment in the event adequate funding cannot be maintained. Not all of these items will be completed in the next FY as some of them are multi-year continuing efforts and others may require extensive outside coordination.

1. Continue coordination with the **RRAT Technical Team** and **RRAT Executive Team**. Continue work on refining coordination efforts through the RRAT framework.
2. Continue **Pallid Sturgeon** work with Corps' Engineer Research and Development Center and Southern Illinois University at Carbondale. Work will focus on telemetry and reproduction.
3. Final report – **Pallid Sturgeon Habitat, Life History, and Population Demographics study**. A draft of this report is expected in FY06.
4. The **Pallid Sturgeon Conservation and Restoration Plan** effort will continue in cooperation with the states and the FWS.
5. **St. Louis Harbor chevron construction RM 183.0-182.4(R)**. An HSR study was performed in 2003 for RMs 184-173 and an alternative was selected that reduced dredging requirements, improved navigation, and added environmental features through the harbor. Preconstruction monitoring of fish and water quality are scheduled to begin in summer FY06.
6. **Jefferson Barracks dike field, RM 172-168(L)**. Pursue continued construction and modifications to existing dikes from the Jefferson Barracks HSR model that was completed in 2001. Three more existing dikes are scheduled to be modified in FY06.
7. **Fort Chartres/Establishment Island new chevrons and rootless dike between RM 132.5-129.5(R)**. Plan to award contract for construction in FY06. Pre-construction monitoring (biological & physical) for the years 2002-2004 has been completed by MDOC and a report is due in FY06.
8. **Mile 100(R) Islands study**. Continue the study of fish assemblages and water quality at the Mile 100 dike field.
9. **Red Rock/Tower Rock project RM 89.55-89.0(L)**. Pursue further construction in the Red Rock to Tower Rock reach of the UMR, RM 93-86.
10. **Environmental dredging at Sister Chute RM 12.0(R)**. Project is scheduled for completion in FY06.
11. **Perform Hydraulic Sediment Response studies for Jones Chute RM 98.4 – 95.0 and Kimmswick Reach RM 168-156**. These reaches were selected using the Stone Dike Alteration Plan.
12. Continue coordination and work on effort to address *Boltonia decurrens* listing question and associated future management strategies with the FWS Recovery Team and Team Leader.
13. Continue coordination with the ILTWG and investigate expanding the nesting and usage survey effort for the **Least Tern**.