

Meeting Notes

Mississippi River Conservation Initiative

Arkansas Meeting, May 15-16, 2003

The fourth in a series of meetings held jointly by the Lower Mississippi River Conservation Committee (LMRCC) and participating state members of the LMRCC was held in Brinkley, Arkansas at the Brinkley Convention Center on May 15-16, 2003. The Arkansas Department of Environmental Quality (ADEQ) and the Arkansas Game and Fish Commission (AGFC) served as the meeting's local host. Approximately 70 participants representing state, federal and private sources were present to participate in discussions to: 1.) identify potential habitat restoration sites along Arkansas' portion of the Lower Mississippi River (LMR) and 2.) to review federal, state, and private programs that might be relevant to habitat and environmental restoration along the LMR.

Participants were welcomed to the meeting by Mike Armstrong, Assistant Chief – Fisheries Division, Arkansas Game and Fish Commission. The meeting began with an introductory session comprised of presentations and discussions on issues related to conservation and habitat restoration of the aquatic resources of the Lower Mississippi River.

INTRODUCTORY SESSION

NOTE: The structure of each day's meeting was nearly identical, starting with an introductory session and finishing with a discussion of potential restoration opportunities. The first day focused on areas within the COE Memphis District (areas upriver of the confluence with the Arkansas River) and the second day focused on restoration opportunities in the COE Vicksburg District. Notes are provided for a single generic Introductory Session.

A summary of presentations and discussions are presented below. Printouts of the slideshows are provided in the appendices.

“Overview of Section 402 of the 2000 Water Resource Development Act”: John Rumancik (U.S. Army Corps of Engineers, Memphis District)

John Rumancik (Biologist - Memphis District Army Corps of Engineers) and Clarice Sundeen (Team Leader/Community Planner - Project Development Branch - Memphis District Army Corps of Engineers), gave an overview of the economic and environmental importance of the Mississippi River ecosystem on Days 1 and 2, respectively, of the meeting, described the Lower Mississippi River Resource Assessment (LMRRA) authorized in the Water Resources Development Act of 2000, and discussed initial planning associated with the LMRAA in the Memphis District.

“Natural Resource-Based Economic Development Potential in Arkansas”- Ron Nassar
(U.S. Fish and Wildlife Service, LMRCC)

Ron Nassar, Coordinator of the Lower Mississippi River Conservation Committee, discussed the linkages between water quality, a healthy river ecosystem and sustainable economic development in his presentation. Though not widely recognized, the Mississippi River and its floodplain provide significant economic benefits to local and regional economies through ecotourism and outdoor recreation. One of the underlying tenets of the LMRCC is that natural resource-based enterprise represents one of the most significant opportunities for economic development in the LMR states.

**“ Water Quality Benefits from Implementing the Lower Mississippi River
Aquatic Resource
Management Plan” – Jim Wise, (AR Department of Environmental Quality)**

Jim Wise, Ecologist with the ADEQ Water Division provided a survey of water quality issues related to the Mississippi River in Arkansas. These issues range from highly localized problems such as sediment and nutrient load in floodplain lakes and side channels to the Gulf Hypoxic Zone. Mr. Wise discussed some of the causes of water quality problems including loss of wetland forests, land use changes and river control structures. Lastly, a review of strategies and programs to improve water quality was provided.

**Group Discussion of Agency Roles in Restoring Wetland Habitat in the Lower
Mississippi River Leveed Floodplain in Arkansas**

Following the introductory presentations a general discussion ensued on strategies to approach aquatic habitat restoration and enhance water quality in the Mississippi River and the leveed floodplain.

A Lower Mississippi River Conservation Committee (LMRCC) representative pointed out the potential for increased economic development by restoring aquatic habitat in the batture lands and providing improved public access to Lower Mississippi River without jeopardizing flood control or navigation. Key issues included the potential strength provided to local economies by diversification into outdoor recreation/tourism and improved quality of life increases the possibility of attracting other sources of economic development. All presenters (LMRCC, Arkansas Department of Environmental Quality, Arkansas Game & Fish Commission [AGFC], U. S. Army Corps of Engineers [USACE], and U. S. Department of Agriculture Natural Resource Conservation Service [USDA NRCS]) recognized the priority use of the Mississippi River for Congressionally authorized navigation/flood control mandates and indicated that habitat restoration opportunities would be measured against these two priority river uses.

Considerable discussion also focused on the desirability of using the LMRCC’s

Aquatic Resource Management Plan as the template for aquatic habitat restoration within the 2.8 million-acre Lower Mississippi River ecosystem, the potential role of various federal/state agencies, such as U. S. Department of Agriculture Natural Resource Conservation Service (USDA NRCS) and its programs (EQIP, WHIP, CRP, WRP, BMPs, etc), in such an effort, and the programmatic linkage of federal agencies (NRCS, U. S. Fish and Wildlife Service, USACE, and U. S. Geological Survey [USGS]) to landscape-scale environmental restoration initiatives.

Because off-river habitat is so critical to many life stages of aquatic species, responsible for much of the ecosystem's species/habitat diversity, and appears to be most threatened with decline, USGS representatives noted that it should be given a high level of attention in any habitat restoration planning effort. There are numerous habitat improvement techniques, which can be applied to off-channel habitat to maintain existing productivity and restore degraded/lost habitat. Recommendations were made to: 1. identify the various categories of off-channel habitat 2. choose representative areas to initiate habitat improvements, and 3. conduct pre- and post-construction monitoring of these restored areas to develop a database to guide future habitat improvement techniques. In many cases the USACE can implement aquatic habitat restoration projects in conjunction with its channel maintenance activities and, with appropriate funding, can utilize Continuing Authorities Programs such as Section 1135 or 206 to cost share off-channel aquatic habitat restoration projects.

There was an extensive discussion about: 1. opportunities for NRCS involvement in such a landscape-scale habitat restoration effort using conservation programs included in the most recent Farm Bill 2. how such a program could be most effectively delivered at the District Conservationist (county) and state levels, 3. the most appropriate timing of NRCS-sponsored landowner meetings 4. the need for workshops dedicated to specific conservation practices 5. the desirability of developing and distributing practice-specific fact sheets to private landowners, and 6. barriers to involvement in an effort of this nature.

Existing NRCS programs, including reestablish hardwoods and several other conservation practices, offer the most significant option for restoring privately owned aquatic habitat. Based on this discussion the group agreed that there is an urgent need to meet with willing private landowners so federal/state agencies involved in natural resource conservation can explain available assistance programs. The group discussed the potential role of the LMRCC in arranging meetings between landowners and appropriate state/federal agencies, the difficulty in targeting specific farmers/landowners, and the widely recognized advantages of conducting countywide meetings through the existing NRCS programmatic infrastructure. This still however does not address the need for one-on-one meetings with individual landowners. Ken Colbreth (Arkansas Soil & Water Conservation Commission) suggested that additional research should be completed on other programs and coordination between all agencies should be increased. David Covington (AGFC) suggested that because assistance programs available to landowners frequently change, it would be beneficial to develop one-page fact sheets listing the financial benefits and other pertinent program issues. Current fact sheets describing the various programs may be available from the Watershed Advisory Group and the USDA indicated that they could make fact sheets available through their District Offices and distribute them at planned Wetland Reserve

Program meetings. Maximum financial assistance to landowners under the Wetland Reserve Program is \$700 per acre + restoration costs. It was also noted that the USDA has been involved in selling carbon credits. David Covington also noted that, because the USDA process for enrolling private lands in conservation programs often differs by county, it is confusing to landowners and recommended that it be simplified.

It was the general consensus of the group that there are sufficient state/federal programs and habitat enhancement techniques available to reestablish productive wildlife and aquatic habitat on leveed floodplain lands. The group also agreed that benefits to Lower Mississippi River water quality could be realized if a combination of wetland restoration/conservation practices (especially Better Management Practices) could be applied on lands within the leveed floodplain and along the river's tributaries. These benefits include nutrient sequestration (longer duration of floodwaters on the leveed floodplain will increase nutrient cycling), sediment retention, increased dissolved oxygen levels (due to restored flow in isolated secondary channels), and decreased water temperature levels (due to riparian reforestation and deepening of water bodies).

Main Points from Group Discussion:

1. Available programs need to be assessed and simplified
2. DCT: meetings are held every other month; LMRCC needs representatives to attend these meetings; contact Willard Rowell (Team 13; Mississippi County to Chicot County)
3. Landowners should be contacted during the fall and late winter time frame
4. Word of mouth works extremely well

The following areas were identified as important: 1. education e.g., - the need to provide accurate, timely information to landowners, especially those who don't qualify for other programs 2. economic return e.g., landowners are interested in what dollars per acre a program will provide, and 3. legal issues - are lands within the leveed floodplain under flood easement agreements (it was noted at this point that lands in the LMR floodplain are not but lands within the St. Francis River floodplain have flood easements on them).

“Overview of Large River Habitat Restoration Techniques”- Gordon Farabee, (LMRCC)

Mr. Farabee discussed three primary methods currently being used to help restore river habitat. These methods include dike notching, side channel restoration and floodplain lake restoration. Examples were provided of each method and habitat benefits explained.

**“Corps of Engineers Role in Leveed Floodplain Habitat Restoration” - Steve Ellis,
(Mississippi Valley Division, U.S. Army Corps of Engineers)**

Steve Ellis, Channel Improvement Coordinator for Mississippi Valley Division outlined COE’s current involvement in aquatic habitat restoration along the Lower Mississippi River.

Continuing Authorities Programs (CAP)

Two authorities are primarily used for habitat restoration along the lower Mississippi River. They are Sections 1135 and 206. Section 1135 involves restoring habitat impacted from Corps projects. This program requires a cost-share by a non-federal partner of 30 percent. The Corps will pay the remaining 70 percent of the project’s cost. Section 206 funds habitat restoration. This program differs from the Section 1135 in that it provides funds for habitat restoration on areas that are not impacted by federal programs. This program requires a 35% non-federal cost-share.

The Corps is cooperating with the state of Tennessee to modify dikes at Plum Point along the river. The Corps has notched dikes for 20 years and 30% of dikes in the lower channel of the Mississippi River are notched.

Studies in Mississippi Valley Division

Dr. Don Williams, a Corps biologist, is conducting a comprehensive survey of lower river side channels. He’s found that between the 1960’s and 1990’s a number of side channels were lost due to various factors. In the 1960’s, between Cairo and Baton Rouge, there were 115 side channels. In the 1990’s only 23 side channels were left. These data are showing that side channels are getting narrower and deeper, thus when the river’s main channel lowers adjacent side channels and wetlands are lowering as well.

REVIEW OF HABITAT RESTORATION OPPORTUNITIES SESSION

Day 1 (May 15, 2003) Projects within Memphis District

This session was dedicated to reviewing opportunities to restore river and floodplain habitat identified by the Arkansas Game and Fish Commission.

Note: Areas discussed during the meeting are assigned a number corresponding to the number on the enclosed summary map, followed by an approximate river mile location, brief description and the number of the planning map on which it appears.

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| 1 | R.M.
821 | Notch dikes along Tamm Bend to restore flow through side channel improving depth and water quality conditions | Map 4 |
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Comments: Notching of this dike could provide benefits to nesting Least Tern by creating a channel between the island and accreted sand helping to prevent predator access to the site. The Corps stated the site would be notched in a few years. Jim Wise (ADEQ) commented he noted approximately 3,000 acres of bottomland hardwood forest on this specific project map.

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| 2 | R.M.
820-815 | Notch closing structure to increase flow into side channel Between Wright's Point and Tamm Bend Bar improving Water quality and depth conditions within side channel. | Map 4 |
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Comments: This site is a dredging problem, thus the Corps is reluctant to notch the structure at this time.

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| 3 | R.M.
805-801 | Notch dike to increase flow through Bend of Island 25 point bar increasing depth and water quality conditions | Map 4 |
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Comments: The Memphis Corps District has already scheduled this site to be notched during regular channel maintenance operations.

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| 4 | R.M.
800 | Rehabilitate habitat in chute behind Island 27 with dredging and construction of hard points | Map 4 |
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Comments: The project may also include adding woody debris in the side channel along with dredging and hard point construction. The project may benefit nesting Least Tern by

creating a secondary channel reducing predator access to the nesting site. The project will also benefit both juvenile and adult fish by increasing cover and improving water quality. As the proposed work is in an off channel area, this project may require a non-federal cost-share via the Corps' Section 1135 program.

- 5** R.M. **Notch dikes along Ashport Bar to increase flow through back channel creating plunge pools below each dike which provide deep water habitat diversity and improved water quality** Map 5
797- 793

Comments: This is the second most dredged site within the Memphis District, thus the district is reluctant to notch at this site. Tim Burnley (AGFC) stated that notching would isolate the long side channel in the area. Steve Filipek (AGFC) asked, whether the mile 794 dike remain. Sam Henry (AGFC) stated the Corps wants to make this area into a silt trap.

- 6** R.M. **Restore flow in chute behind Kate Aubrey Towhead to improve water quality and habitat diversity (e.g., deep water areas), etc.** Map 5
793- 784

Comments: It was decided to delete this project, as Lake Neark is a sediment trap protecting the port of Osceola

- 7** R.M. **Notch Island 30 dikes to create depth diversity** Map 5
787

Comments: The Memphis District is hesitant to notch dikes on an outside bend, as notching these dikes would negatively impact the area's navigation channel. The Corps did say it would be acceptable to notch dikes on the inside point bar. Steve Ellis said hard points (stone barbs) on the bank need to have strong current directed against them in order for these structures to function properly.

- 8** R.M. **Notch closing structures in Lookout Towhead side of channel to improve water quality and depth diversity. Evaluate dredging to create over wintering habitat, and hard point construction to create depth diversity** Map 5
772- 770

Comments: The Corps noted that this is an area requires frequent dredging and they are reluctant to notch at this time. There are three low elevation dikes and two of these dikes are already notched. They want to wait a few years for the dredging problem to stabilize before they consider any further notching at this site

- 9** R.M. **Dredge backwaters at Dean Island Landing to create depth diversity and improve water quality conditions** Map 6
756.5

Comments: This is a potential Section 1135 project, as the Corps doesn't have the authority

to dredge backwaters under current channel maintenance authority. Steve Filipek asked how long is the sandbar to the left of River Mile 760 is. The Corps answered the length varies depending on water elevation.

- 10** R.M. **Installation of weir at lower end of Corona Lake to** Map 6
755 **maintain water level during dry weather periods**

Comments: Gordon Farabee (private contractor) stated we should to assess the need for a weir at this site. It was mentioned that Brandywine Chute is filling in. The Corps has this site marked for notching and will notch one to three dikes. This site should be observed for a few years.

- 11** R.M. **Restore habitat in Brandywine Chute by considering**
755-748 **dredging, hard point, woody debris to provide over** Map 6
wintering habitat, improved water quality and
increased habitat diversity

Comments: This proposal would qualify as a Section 1135 project. The question was asked whether it would be advisable to open up on both the lower and upper ends of the chute. It was decided to notch the dike at the upper end and see what happened. As dredging is expensive, possibly taking a tow during high water in the chute's lower end would tend to move sediment from that area. The thought here is that the tow's prop wash would dislodge bottom sediments, which the current would remove from the chute. Steve Ellis responded that this suggestion had merit. John Rumancik (Memphis District Corps) inquired about using Bob Leonard's (AGFC) backhoe in this area, as it would be cheaper than a Section 1135 project.

- 12** R.M. **Notch dikes at Redman Point Bar to increase depth** Map 6
743 **diversity and water quality**

Comments: The Corps is currently micro-modeling this site, as this is a chronic dredging location. The Corps recommended that notching at this site be postponed for a few years. They did however recommend side channel enhancement in the area and the need to be involved with the Arkansas Game and Fish Commission if work is carried out.

- 13** R.M. **Notch dikes and closing structure at Loosahatchie**
740-737 **Bar to create depth diversity and improved water** Map 6
quality within dike field

Comments: The Corps agreed to do this project, as they saw no negative effects to navigation resulting from the proposed dike notching.

- 14 R.M. 737** **Restore aquatic habitat in Hopewell Chute, Mosquito Lake and Mound City Chute by evaluating various management techniques such as dredging to increase depth diversity/water quality, weir construction to maintain increased water elevations during dry conditions, and placement of hard points to increase local scour resulting in increased depth diversity** Map 6

Comments: This project was not approved at this time, as the recommended work at these sites would need to be done with funding from the Corps' Section 1135 program.

- 15 R.M. 734** **Notch dikes at Engineer's Bar to create water depth diversity and improved water quality** Map 6

Comments: The existing site provides recreational use, thus it was decided to not notch dikes as recommended.

- 16 R.M. 711-706** **Notch Dikes and closing structure above and below Cat Island to restore backwater habitat i.e., increased water depth below notched dikes, potentially increased fish access into backwaters, etc.** Map 7

Comments: The proposed project will increase area diversity and benefit Least Tern. The Corps recommended delaying the project for a period of time. They will however, keep the project on their list of sites to notch.

- 17 R.M. 703-702** **Notch Porter Lake dikes to increase habitat diversity in backwaters** Map 7

Comments: This area is on the Corps priority list for notching. Dike #6 below River Mile 698 will be notched.

- 18 R.M. 699-695** **Notch Basket Bar dikes to increase habitat diversity i.e., water quality and depth diversity below notched dike** Map 8

Comments: The Corps will notch dike #6 this year. Steve Filipek inquired if Dike #6 is notched will an isolated pool be formed below the notch. Steve Ellis stated there would be a pool. A comment was made that if the dikes are covered with sand then dynamite might be used to make the necessary notches.

- 19 R.M. 694** **Notch Commerce dikes to increase water depth diversity below dikes** Map 8

Comments: The Corps will notch three dikes by River Mile 695. There is a Least Tern colony in the area. Steve Filipek asked why not put rock clusters down? The Corps agreed with this proposal, although they want the AGFC to assess the biological response if they were to be built.

- 21** R.M. **Rehabilitate degraded slough near confluence of the** Map 8
680 **St. Francis River**

*Comments :*A landowner wants to know what can be done to get and retain more water in a degraded slough on his property and what assistance programs might be available. The Corps agreed to issue a permit for constructing a weir at this site. It was recommended to notch all three dikes. There are a number of NRCS programs that may provide landowner assistance.

- 22** R.M. **Notch St. Francis dikes to increase water depth** Map 8
671-670 **diversity and improved water quality**

Comments: The Corps agreed to notch these structures in the future, and will begin by notching one structure at River Mile 671.

- 23** R.M. **Notch dikes at Prairie Point to increase flow through** Map 8
669-664 **secondary channel improving depth diversity and**
water quality

Comments: Gordon Farabee asked if it would be possible to remove rock from the lateral dikes to create notches. The Corps responded it wouldn't be practical as they are concerned that this action might negatively effect the current navigation channel in the area. In response to the proposed project at Prairie Point, the Corps mentioned they require a 6-foot rock elevation below a newly constructed weir. They are however agreeable to placing one notch per dike at this site. Steve Filipek suggested two notches.

- 24** R.M. **Notch dikes at Montezuma Towhead to increase** Map 9
655 **habitat diversity e.g., increased depth in created**
plunge pools below notches, improved water quality

Comments: Steve Ellis stated there is a lot of dredging in this area and the bank line is getting closer to the main line levee. Steve Filipek asked about notching the other five dikes close to the land? The Corps declined to consider notching at this site, as it is a current dredging problem.

- 25** R.M. **Notch Kangaroo Point dikes to create plunge pools** Map 9
649 **(depth diversity), and potentially a secondary**
channel between dikes

Comments: The Corps agreed to all proposed notching.

- 26** R.M. 649 **Assess need for habitat restoration in Horseshoe Lake by considering available management techniques: weir construction for better water level control, constructing series of deep holes to improve over wintering conditions and water quality, woody debris placement to provide increased hard cover within lake, etc** Map 9

Comments: Steve Ellis stated this project would be more beneficial to Mississippi and at present the Corps isn't interested in constructing this project.

- 28** R.M. 640-636 **Notch dikes along Island 62 to increase flow through side channel** Map 9

Comments: A natural notch occurs in the dike at River Mile 640, and dikes located below this natural notch are a possibility for notching.

- 27** R.M. 640-637 **Notch closing structures at head of Island 63 Bar and in Bend of Island 63 Chute to increase flow through side channel** Map 9

Comments: This project was not approved as the dikes and any future notch would be too close to the main levee.

- 29** R.M. 630 **Notch dikes along Island 64 to create plunge pool habitat(improved depth diversity) and consider habitat restoration within chute including deep hole construction and placement of woody debris to increase hard cover** Map10

Comments: The Corps said this project is a lower priority, but they will keep the project on their list. Because of riverbed shoaling in this area, the Corps wants to proceed slowly with any proposed project.

- 30** R.M. 627-626 **Notch Sunflower dikes to improve depth diversity below each dike and improved water quality** Map10

Comments: Dikes at this site are shorter than shown on the project map, and although the Corps has no objection to notching these dikes, they first want a survey of the area to determine the practicality of notching.

- 32** R.M. 626 **Consider improving habit within Sherman Chute by dredging/mechanically digging deep holes, placing woody structures (hard cover), weir construction for improved water level control, and assessing environmental merits of reopening channel connecting to river** Map10

Comments: It was agreed this would be a beneficial project and would need to be a cooperative Section 1135 involving an agreement between the Corps, Arkansas and Mississippi.

- 31** R.M. 626 **Restore habitat in Mellwood Lake through construction of a weir and deepening channel between river and lake** Map10

Comments: It was stated that easements for work were required. Mellwood Lake is an AGFC owned lake with private property access, and easements with the private landowners would needed before work at this site could proceed.

- 33** R.M. 624 **Restore habitat in DeSoto lake including installation of weir for improved water level control, dredging or mechanically digging a series of deep holes for thermal refuge during summer and winter months, and placing woody debris (tree trunks, limbs, etc.) to provide improved hard cover** Map10

Comments: This project was not approved at this time for construction as it would require a Section 1135 cooperative agreement before construction could be started. *Note: there has been some local interest in the past in pursuing an 1135 project to restore DeSoto Lake.*

- 34 & 35** R.M. 624-620 **Notch Ludlow dikes and increase flow through Chute of Island68 to increase depth diversity and water quality** Map10

Comments: The Corps stated they had no objections with the project proposal, but this area is considered to be low priority. The Corps asked if anyone had any suggestions about construction at this site. It was suggested that a bucket and crane be used to remove sand and rock for a notch. This practice would be cost effective.

- 36** R.M. 616-615 **Notch dikes at head of Island 69 to increase flow through chute. Consider habitat restoration measures in chute including woody debris placement, hard point construction, dredging/mechanically digging deep holes, etc.** Map10

Comments: The Corps stated there was a “blow out” near River Mile 616, which they are repairing and intend to monitor. The bottom two dikes in the dike field are already notched.

- 37 R.M. 614-612 **Notch dikes along Island 69 to improve habitat diversity through sandbar creating a series of deep plunge pools below each dike resulting in thermal habitat for fish and improved water quality.** Map10

Comments: The Corps reported that the lower two dikes in the series are already notched. It was the general consensus that the Corps should assess the site for further notching.

- 38 R.M. 603-602 **Notch Henrico dikes to increase habitat diversity by improved depth diversity below each dike and improved water quality** Map11

Comments: The Corps agreed to notch dikes in between River Mile 602 and 603, as well as notch a dike in between River Mile 603 and 604. In total four dikes will be notched.

Day 2 (May 16, 2003) Projects within Vicksburg District

- 39 R.M. 596-595 **Notch Victoria Bend dikes to increase water depth diversity within dike field, improved water quality and potentially creating a secondary channel below and connecting each dike within the field** Map11

Comments: Steve Ellis stated there's a large high bar in this area and the Corps could possibly conduct notching to address this problem. The site is somewhat of a navigational problem and specific project details will have to be examined before construction is started. John Rumancik recommends notching dikes 2 and 3. If conditions warrant the notching of dikes, 2 and 3 will be done when the Corps is working in the area performing other maintenance. It was recommended that water flow only through Montgomery Chute during high flow. This could be an AGFC Section 206 study located in the old White River side channel. The proposed project would have to be coordinated with the Vicksburg District. The use of hard-points might be possible to achieve needed results within the chute.

- 40 R.M.592 **Notch dikes along Montgomery Towhead to increase habitat diversity e.g., a series of deep water plunge pools within dike field, improved water quality** Map11

Comments: The Corps noted that these dikes were built in 1965 and are now covered with sand, which will make them extremely difficult to notch. They believe the lower dike in this dike field is notched. The Corps mentioned the possibility of lowering the outlet at the lower

end of the adjacent side channel, and if this is done it would need to be a Section 206 project.

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| 41 | R.M.
585 | Rehabilitate Rosedale Bend Chute and Lake Beulah by considering and evaluating management techniques such as woody debris placement to create improved hard cover for fish, hard point construction to concentrate local scour resulting in a series of deep holes below each hard point, and dredging/digging a series of deep water holes providing improved thermal refuge, etc. | Map
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Comments: Lake Beulah presently has a weir to help maintain water elevation in the lake. The interior of Lake Beulah is owned by Arkansas and Mississippi owns the land surrounding the lake, thus it may be a cooperative project involving these two states.

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| 42 | R.M.
576 | Habitat rehabilitation in Swan Lake, Deep Lake and Ozark lake such as installation of weirs and construction of deep holes. Also consider other management techniques such as the placement of woody debris to improve hard cover for fish, etc. | Map11 |
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Comments: The proposed projects are located on private land so it would be a problem initiating a federally funded project at these sites, as federal funds for river restoration must be spent on public lands. Mike Staten suggested installing weirs with flap gates as one solution to achieving water level stability in the lakes.

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| 44 | R.M.
565-558 | Notch dikes along Chicot Landing to increase habitat diversity water depth diversity below each notch and improve water quality | Map12 |
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Comments: Chicot Landing – A Section 1135 project is proposed at Lake Whittington involving constructing a 12-foot weir. To date, the weir has not been installed. The area where dikes are located belongs to the AGFC, so this agency is interested in seeing the dikes notched. Dike #3 has a natural notch caused by a blowout of rock at this site. The last remaining dikes are hard points built to keep the bank at this site from eroding. There is a good flow in the chute, which created the need for the Corps to construct hard points to protect the bank from eroding. Jerry Smith (AGFC) asked if the Corps would notch the upper dike in the series and the Corps replied they would look at determining an appropriate elevation to place the notch if they eventually do notch the dike. The area has stabilized and dredging is minimal. There is a potential to build chevrons to benefit Least Tern nesting in this area.

- 45 R.M. 549.5 **Assess potential for habitat restoration at mouth of Old River** Map12

Comments: Jerry Smith wants additional flow to go down the Old River at River Mile 549. The Corps replied that this would be difficult to do. The Corps doesn't recommend doing any work at the mouth as we need to look at systematic restoration throughout the chute. As this site is off the river's main channel the proposed work would need to be done via one of the existing CAP programs. Jerry Smith asked about conducting habitat restoration in Lake Paradise as there is no flow other than high water events in the lake. Ron Nassar asked if a weir would work to pull water in? Jerry Smith suggested possibly an earthen dam might work. The question was posed "What if you find an elevation of 0 in the channel"? The COE responded by stating they would want to start at the downstream end and open it up. The Corps suggests removing logjams as a means for obtaining flow into the lake. The Corps stated the advantage of starting work on the downstream end is that sediment would not collect, whereas if work were to begin on the area's upper end sediments would deposit and collect in the chute's lower areas. The Corps and Billy Justus (Corps) stated that weirs may be good for 10 – 20 years, and that pre-project hydraulic analysis is needed. Gordon Farabee suggested building kicker/pile dikes, which would pull flow through the channel. John Rumancik suggested extending the revetment higher like a small dike, to 20 – 30 ft. parallel to shore and make it up to a + 20 contour. The Corps stated there is a dike planned for this area. Lake Chicot is located on public land, and during high water elevations pumps are used to maintain water levels in the lake. Water from the pumping helps maintain water elevations in the lower portion of the adjacent chute.

- 46 R.M. 548-546 **Modify closing structures to permit access into backwater areas around Point Comfort** Map12

Comments: This project was not supported by COE.

- 47 R.M. 548 **Deepen or reopen channel between Lake Paradise and river to improve water quality and increase fish passage. Consider installation of weir to manage water level** Map12

Comments: This project was not approved.

- 48 R.M. 541-538 **Notch Tarpley Cutoff dikes to create a series of deep water plunge pools below each dike resulting in improved water quality and depth diversity** Map12

Comments: The dike at River Mile 541 will help to get water into the backwater area due to a very deep notch already existing in the dike. Jerry Smith asked if there was a notch on the dike located at River Mile 542 (behind the island). The Corps replied that there is not a dike in that location. However, there is a dike at River Mile 539. Jerry Smith asked about potential work along the right side of River Mile 541 to help get water flowing behind it. The Corps stated they would look at the possibility of doing this. The Corps explained that when the cut-off was constructed, the channel at this site was straightened. As there is a navigation issue in this area, the Corps want to maintain a high bank for the water to push against, which will let the river meander. From the bridge to Walnut Point, there are navigational problems and the Corps need to survey this area during high water events. Steve Filipek asked whether the dike at River Mile 539 could be notched. The Corps responded that they would look into the feasibility of notching this dike.

- 49 R.M. 540-537 **Assess potential for habitat restoration within the Point Chicot and Bachelor Bend areas. Multiple notches in several of the long dikes/closing structures would create increased water depth profile** Map12

Comments: This project was not approved.

- 50 R.M. 536 **Notch Leland Bar dikes to improve water quality and water depth profile** Map12

Comments: Jerry Smith asked if it would be possible to get a flow established in Leland Chute? The Corps said for this to be accomplished that work would need to begin at the bottom by River Mile 537. Smith also asked if the Corps would notch dikes located at this site. The Corps responded that they first need to see if the present dikes are reducing dredging, and until dredging is reduced they would not recommend notching any of the dikes.

- 51 R.M. 537-533 **Restore habitat in Leland and Whiskey Chutes. Consider restoration techniques including woody debris, dredging/mechanical digging of deep holes, and hard point construction** Map 12

Comments: This project was not approved.

- 52 R.M. 534-532 **Restore habitat in several floodplain lakes including Beaver Lake** Map13

Comments: Jerry Smith asked whether it would be possible to establish flow behind the right side of the old bridge. John Rumancik asked about notching dikes at River Miles 534 and 533. He also inquired about notching the dike at River Mile 533.5 to maintain current velocity at this site. Steve Ellis said the Corps will be working in the future at this site and will seek advice from state biologists on what features to include in this project. He further stated the Corps would coordinate this project with the LMRCC and the NRCS.

- 53** R.M. 529-525 **Assess need for habitat restoration in Lake Lee. Consider constructing a series of deep holes improving thermal refuge, placing woody debris at locations throughout lake to improve hard cover, and weir construction to improve water quality and elevation during periods of drought or reduced river flow** Map13

Comments: Jerry Smith asked whether the flow down the Lake Port side (on the left) can be increased. Steve Filipek asked about adding woody debris in the side channel. The Corps responded that this is a floodplain lake and if the federal agencies were to become involved, it would be a Section 206 study. An additional comment from one of the meeting's attendees said there is a notch in a dike immediately above River Mile 527. The Corps stated they would check on this.

- 54** R.M. 529-528 **Notch closing structure at head of Lake Port Towhead to increase flow through side channel** Map13

Comments: Ron Nassar asked if it wouldn't be prudent to delay starting work at this site until after bridge construction is complete. The Corps agreed with this statement. Jerry Smith asked the Corps to comment if restoration work could be accomplished on the project map's bottom left area. The Corps replied it wouldn't be practical.

- 55** R.M. 527 **Reconnect Lake Port with main channel to improve fish and recreational access** Map13

Comments: The Corps stated that any environmental restoration in the area should be delayed until after bridge construction. If this project is implemented, it would be done through the Corps' Section 206 program.

- 56** R.M. 525-524 **Notch dikes along Walnut Point to improve depth diversity within dike field** Map13

Comments: The COE stated this is a troublesome reach requiring frequent dredging. They want to fix the dredging problem before notching area dikes. If they are able to

reduce dredging at this site they would then look into notching dikes.

- 57** R.M. 524-521 **Notch Oakes dikes and assess potential for habitat rehabilitation in side channel such as dredging or mechanically digging a series of deep holes providing improved thermal refuge for fish and placing piles of woody debris within side channel to improve/increase hard cover for fish and invertebrates** Map13

Comments: The COE stated they would look into notching dikes at this site.

- 58** R.M. 520-513 **Increase fish and boater access into side channel at Mathews Bend by dredging or mechanically digging access channel** Map13

Comments: The state resources agencies need to work with the Corps to establish a Section 206 project at this site. Someone added that the long dike at River Mile 518 was already notched.

- 60** R.M. 519 **Notch closing structure across Kentucky Bend Bar to increase access within backwaters for fish and recreational use, improve water quality and water depth diversity within the area** Map13

Comments: The Corps stated this is a floodplain lake situation and would require a non-federal cost-share involving a Section 206 program. John Rumancik asked if there is a dike around River Mile 520. The COE stated there is a dike there and it is not notched

- 61** R.M. 515-508 **Notch Leota dikes to restore connectivity to Carolina Chute improving water quality, fish access, areas of deep water, etc.** Map13

Comments: The Corps stated the dikes at the top of this area are not notched and they would look into notching them to establish flow into Carolina Chute.

- 62** R.M. 513 **Deepen mouth of channel behind Island 88 to increase fish and boater access** Map13

Comments: Jerry Smith asked about working on the mouth of the oxbow at River Mile 513. It was agreed that the mouth needs to be deepened and that the area should be surveyed

before beginning any work. Mike Staten stated that if the oxbow's mouth is deepened water from the remainder of the lake might drain into the project site resulting in less water in the lake. It was asked if it would be possible to involve the USGS and or the NRCS to look into this potential problem.

- 63** R.M. 510 **Notch Lower Cracraft dikes to create local areas of deep water and improved water quality within the dike field** Map13

Comments: As there is no navigation problem at this site, the Corps agreed to look into implementing this project.

- 64** R.M. 510-506 **Increase flow into chute behind Island 89 and assess potential for habitat improvement in chute and in Gassoway Lake. Consider the need for improved water management with Gassoway Lake (weir construction); consider dredging or mechanically digging deep holes, assess the need for additional hard cover in the form of placing woody debris or constructing under water boulder piles attracting fish and invertebrates, etc.** Map 13

Comment: Jerry Smith asked if it would be possible to restore flow above Gassoway Lake? The Corps stated if this project were to go forward it would need to be a Section 206 project. Craig Uyeda (AGFC) reinforced the idea that we need to talk to private landowners about the projects on the river and on the Choctaw Island Wildlife Management Area.