

**Volume IV**

**APPENDIX G:**

**Response to Public Comments**

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FW DEQ WQ DRAFT EIS - LCA - Vol IV.txt  
From: Klein, William P Jr MVN [William.P.Klein.Jr@usace.army.mil]  
Sent: Thursday, July 08, 2010 2:41 PM  
To: Boudreaux, Michelle MVN-Contractor; Hicks, Billy J MVN; Jammie Favorite;  
Bartel, Jamie M.; John Burns  
Subject: FW: DEQ SOV: 100603/1025 USACE DRAFT EIS - LCA - Vol. IV

Please include below email from LDEQ as official comment on the LCA  
Convent/Blind River Diversion and include in the comment/response appendix.

Thank you,

William P. Klein, Jr., Ed.D.  
U.S. Army Corps of Engineers  
New Orleans District  
P.O. Box 60267  
New Orleans, LA 70118  
504-862-2540  
william.p.klein.jr@usace.army.mil

-----Original Message-----

From: Diane Hewitt [mailto:Diane.Hewitt@LA.GOV]  
Sent: Thursday, July 08, 2010 2:35 PM  
To: Klein, William P Jr MVN  
Subject: DEQ SOV: 100603/1025 USACE DRAFT EIS - LCA - Vol. IV

July 8, 2010

Joan M. Exnicios, Chief

USACE Environ.Planning Branch

P.O. Box 60267

New Orleans, LA 70160-0267

william.p.klein.jr@usace.army.mil <mailto:william.p.klein.jr@usace.army.mil>

RE:

100603/1025

USACE DRAFT EIS - LCA - Vol. IV

(on disk)

Small Diversion at Convent/Blind Riv.

St. James Parish

Dear Ms. Exnicios:

The Department of Environmental Quality (LDEQ), Offices of Environmental  
Services and Environmental Compliance have received your request for comments  
on the above referenced project. Please take any necessary steps to obtain  
and/or update all necessary approvals and environmental permits regarding this

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proposed project.

There were no objections based on the information in the document submitted to us. However, the following comments have been included below. Should you encounter a problem during the implementation of this project, please notify LDEQ's Single-Point-of-contact (SPOC) at (225) 219-3640.

The Office of Environmental Services/Permits Division recommends that you investigate the following requirements that may influence your proposed project:

- \* If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- \* If the project results in a discharge of wastewater to an existing wastewater treatment system, that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- \* LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permit Division at (225) 219-3181 to determine if your proposed improvements require one of these permits.
- \* All precautions should be observed to control nonpoint source pollution from construction activities.
- \* If any of the proposed work is located in wetlands or other areas subject to the jurisdiction of the U.S. Army Corps of Engineers, you should contact the Corps directly to inquire about the possible necessity for permits. If a Corps permit is required, part of the application process may involve a water quality certification from LDEQ.
- \* All precautions should be observed to protect the groundwater of the region.
- \* Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.
- \* Any renovation or remodeling must comply with LAC 33:III.Chapter 28. Lead-Based Paint Activities, LAC 33:III.Chapter 27. Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation), and LAC 33:III.5151.Emission Standard for Asbestos for any renovations or demolitions.
- \* If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact (SPOC) at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.

Acknowledged. All above requirements and considerations will be recognized and complied with during PED phase and into construction of the project.

Currently, St. James Parish is classified as an attainment parish with the National Ambient Air Quality Standards.

Please forward all future requests to Ms. Diane Hewitt, LDEQ/Performance Management/ P.O. Box 4301, Baton Rouge, LA 70821-4301, and your request will be processed as quickly as possible.

FW DEQ WQ DRAFT EIS - LCA - Vol IV.txt

If you have any questions, please feel free to contact me at (225) 219-4079 or by email at [diane.hewitt@la.gov](mailto:diane.hewitt@la.gov) <<mailto:diane.hewitt@la.gov>>. Permitting questions should be directed to the Office of Environmental Services at (225) 219-3181.

Sincerely,

Diane Hewitt  
Performance Management  
LDEQ/Community and Industry Relations  
Business and Community Outreach Division  
Office of the Secretary  
P.O. Box 4301 (602 N. 5th Street)  
Baton Rouge, LA 70821-4301  
Phone: 225-219-4079  
Fx: 225-325-8208  
E-mail: [diane.hewitt@la.gov](mailto:diane.hewitt@la.gov)

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LDEQ Comments regarding US ACOE Proposal to Establish a Small Diversion at Convent/Blind River  
07/05/2010

**Louisiana Department of Environmental Quality (LDEQ) comments  
regarding the Corps of Engineers' draft supplemental environmental  
impact statement for the LCA-Small Diversion at Convent/Blind River,  
LA, May 2010**

**General Comments:**

1. LDEQ supports the Corps' efforts to restore the wetland habitat of the Maurepas Swamp and its surrounding areas. Overall, the project will be beneficial to the area.
2. LDEQ is aware that the LCA is investigating other projects in the area. One of these projects, Amite River Diversion Canal Modification, is related to the Blind River project. The Amite River Diversion Canal flows into the Blind River. In addition, as part of LDEQ's Dissolved Oxygen TMDL for the Lower Amite River, LDEQ has recommended that the weir on the Amite River Diversion Canal be repaired to establish more flow down the Lower Amite River. This should result in improved water quality in the Lower Amite River. In addition, repairing the weir may provide a route to input nutrients along the northern rim of the Maurepas Swamp. The cumulative effects of the two projects proposed by the Corps and the repair of the weir should be evaluated. LDEQ may be able to provide assistance with the evaluation or projection of water quality produced as a result of these projects.

Acknowledged.





Bobby Jindal  
Governor

State of Louisiana  
Department of Wildlife & Fisheries

Robert J. Barham  
Secretary

July 14, 2010

Gregory J. Ducote, Administrator  
Louisiana Department of Natural Resources  
Coastal Management Division  
P.O. Box 44487  
Baton Rouge, LA 70804-4487

RE: *Consistency Number: C20100165*  
*Applicant: Corps of Engineers - New Orleans District*  
*Notice Date: June 7, 2010*

Dear Mr. Ducote:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the notice referenced above. The following recommendations have been provided by the appropriate biologist(s):

**Ecological Studies:**

This project is located in the vicinity of the Blind River, a Louisiana designated Natural and Scenic River. The applicant must obtain authorization from the Louisiana Department of Wildlife and Fisheries, Scenic Rivers Program prior to initiating any of the proposed activities within or adjacent to the banks of the Blind River. Scenic Rivers Coordinator Keith Cascio can be contacted at 318-343-4045.

Portions of the proposed activity are within Maurepas Swamp Wildlife Management Area. No activities shall occur on any LDWF Wildlife Management Area or Refuge without obtaining a Special Use Permit from LDWF. The applicant shall contact Vaughan McDonald at (504) 284-5267 for more information.

Ecological Studies and Office of Fisheries have been involved with several planning and development team meetings concerning this project and generally, we support its implementation. In regard to project specifics, we offer the following:

- Ecological Studies believes that operational flexibility should be incorporated into the operation plan and that the plan be modified as needed in response to monitoring and recommendations of regulatory and resource agencies.

Both the feasibility level OMRR&R and monitoring and adaptive management plans will be revised in the preconstruction, engineering, and design (PED) phase. The monitoring and adaptive management plan revision will outline how each monitored variable can direct an adaptive management action. In addition, the monitoring and adaptive management plan revision will propose more concrete and formalized communication mechanisms for the exchange of information to inform operational decisions. Also, the flexibility in the operations and control plan allow for delivering the appropriate volumes of water necessary to restore the hydrologic cycles for a healthy swamp and will include a dry out period every 3-5 years.

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AN EQUAL OPPORTUNITY EMPLOYER

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Application Number: C20100165  
July 14, 2010

- The operation plan should allow for a drawdown or dry out period every 3-5 years to promote woody species regeneration. This period should coincide with naturally drier years and lower ambient water levels (as they are identified) to maximize the likelihood of a successful draw down.
- Office of Fisheries recommends that the control structures in the swamp be designed to allow for fish passage.
- Within current reports, we have not seen mention of the potential to introduce invasive aquatic species from the Mississippi River. This is less of an issue since the Bonnet Carre Spillway would also provide a way of introducing species, but the pathway should be noted.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact LDWF Permits Coordinator Dave Butler at 225-763-3595 should you need further assistance.

Sincerely,

Kyle F. Balkum  
Biologist Program Manager

mw/rb

- c: Matthew Weigel, Biologist  
Rob Bourgeois, Biologist  
Keith Cascio, Scenic Rivers Coordinator  
Vaughan McDonald, Biologist

Both the feasibility level OMRR&R and monitoring and adaptive management plans will be revised in the preconstruction, engineering, and design (PED) phase. The monitoring and adaptive management plan revision will outline how each monitored variable can direct an adaptive management action. In addition, the monitoring and adaptive management plan revision will propose more concrete and formalized communication mechanisms for the exchange of information to inform operational decisions. Also, the flexibility in the operations and control plan allow for delivering the appropriate volumes of water necessary to restore the hydrologic cycles for a healthy swamp and will include a dry out period every 3-5 years.

The fish passage will be included in the final design. The exact design of the control structures will be part of the value engineering process in both preliminary and final design. The function of the control structures is to limit short circuiting to the Blind River, but some direct flows will be allowed to keep the canals supplied with fresh water and to allow aquatic life to pass freely throughout the system as it currently exists.

The plan currently has a bar screen structure in the program to stop large debris and large fish and aquatic life from entering the diversion canal. There will be opportunity for smaller aquatic life to move from the Mississippi River into the Blind River Lake Maurepas area. Since there have been historic overflows from the Mississippi river to the project area the species in both fresh water areas should be similar. The most recent overflow of Mississippi river water was through the Nita Crevasse which apparently occurred in March 1890. The pathway will be noted in the report.





BOBBY JINDAL  
GOVERNOR

State of Louisiana  
DEPARTMENT OF WILDLIFE AND FISHERIES  
OFFICE OF WILDLIFE

ROBERT J. BARHAM  
SECRETARY  
JIMMY L. ANTHONY  
ASSISTANT SECRETARY

July 1, 2010

Attn: Dr. William Klein Jr.  
Planning, Programs, and Project Management Division  
Environmental Planning and Compliance Branch  
United States Army Corps of Engineers  
P. O. Box 60267  
New Orleans, LA 70160-0267

RE: *Application Number: draft EIS Convent/Blind River Diversion*  
*Applicant: U.S. Army Corps of Engineers-New Orleans Division*  
*Notice Date: May 21, 2010*

Dear Mr. Serio:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the above referenced notice. Based upon this review, the following has been determined:

LDWF supports the implementation of Alt 2 and we concur with the positions and recommendations outlined by the U.S. Fish and Wildlife Service in their April 30, 2010 draft report.

LDWF believes that operational flexibility should be incorporated into the operation plan and that the plan be modified as needed in response to monitoring and recommendations of regulatory and resource agencies.

The operation plan should allow for a drawdown or dry out period every 3-5 years to promote woody species regeneration. This period should coincide with naturally drier years and lower ambient water levels (as they are identified) to maximize the likelihood of a successful draw down

The control structures in the swamp should be designed to allow for fish passage.

Portions of the proposed activity are within Maurepas Swamp Wildlife Management Area. No activities shall occur on any LDWF Wildlife Management Area or Refuge without obtaining a Special Use Permit from LDWF. Please contact Chris Davis at (985) 543-4777 for more information.

Both the feasibility level OMRR&R and monitoring and adaptive management plans will be revised in the preconstruction, engineering, and design (PED) phase. The monitoring and adaptive management plan revision will outline how each monitored variable can direct an adaptive management action. In addition, the monitoring and adaptive management plan revision will propose more concrete and formalized communication mechanisms for the exchange of information to inform operational decisions. Also, the flexibility in the operations and control plan allow for delivering the appropriate volumes of water necessary to restore the hydrologic cycles for a healthy swamp and will include a dry out period every 3-5 years.

The fish passage will be included in the final design. The exact design of the control structures will be part of the value engineering process in both preliminary and final design. The function of the control structures is to limit short circuiting to the Blind River, but some direct flows will be allowed to keep the canals supplied with fresh water and to allow aquatic life to pass freely throughout the system as it currently exists.

Acknowledged. Prior to conducting any additional activities for the project and within the WMA, a Special Use Permit will be requested.

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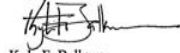
Page 2  
Application Number: draft EIS Convent/Blind River Diversion  
July 1, 2010

This project is located in the vicinity of the Blind River, a Louisiana designated Natural and Scenic River. The applicant must obtain authorization from the Louisiana Department of Wildlife and Fisheries, Scenic Rivers Program prior to initiating any of the proposed activities within or adjacent to the banks of the Blind River. Scenic Rivers Coordinator Keith Cascio can be contacted at 318-343-4045.

Acknowledged. Prior to conducting any additional activities for the project and within the WMA, authorization from the Scenic Rivers Program will be requested.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact Habitat Section biologist Matthew Weigel at 225-763-3587 should you need further assistance.

Sincerely,



Kyle F. Balkum  
Biologist Program Manager

mw

c: Matthew Weigel, Biologist  
Chris Davis, Biologist  
Keith Cascio, Scenic Rivers Coordinator  
EPA, Marine & Wetlands Section  
USFWS Ecological Services



July 6, 2010

Colonel Alvin Lee  
 Commander  
 New Orleans District U.S. Army Corps of Engineers  
 P.O. Box 60267  
 New Orleans, LA 70160  
 Re: LCA Draft Feasibility Reports and Draft Environmental Impact Statements

Dear Colonel Lee:

Thank you for the opportunity to review and comment on the LCA Draft Feasibility Reports and Draft Environmental Impact Statements. Section 7006(e)(3) of the 2007 WRDA identifies six near-term restoration projects that Congress has authorized for construction subject to, among other things, completion of feasibility studies and a Chief's Report before December 31, 2010. The draft Feasibility Report covers five of those six projects:

- ? Medium Diversion at White Ditch
- ? Convey Atchafalaya to Northern Terrebonne Marsh/Multipurpose Operation of the Houma Navigation Canal (HNC) Lock (two projects merged)
- ? Small Diversion at Convent/Blind River
- ? Amite River Diversion Canal (ARDC) Modification

Although we were disappointed that the initial deadline of December 31, 2008 was missed, we commend the U.S. Army Corps of Engineers and the State of Louisiana in working diligently to meet the December 31, 2010 as directed by WRDA. It is imperative that these projects are constructed as quickly as possible and our organizations are available to assist to ensure the urgency of these projects is understood in Washington, D.C. and in the State.

We understand the need for additional analysis and the increasing uncertainty of the Terrebonne Basin Barrier Shoreline Project considering the Deepwater Horizon oil spill. However, the Deepwater Horizon oil spill has also shown the urgent need to restore and maintain our barrier island chains to protect the interior marshes from multiple threats, including massive oil spills and hurricanes. We request the USACE to distribute an updated timeline for completion to the public and that timeline ensures that this feasibility report is completed at the earliest possible time with the understanding that some details may have to be modified during the engineering, design and construction phase. We request that the Chief's Report also address an extended deadline for the

Terrebonne Basin Barrier Shoreline project that will not be meeting the required WRDA deadline due to these extraordinary circumstances.

We also applaud the USACE and the State of Louisiana for incorporating Monitoring and Adaptive Management Plans at the feasibility stage of project planning. We support the use of project funding to conduct monitoring and expand research and development on these restoration projects to provide lessons learned and flexibility in operations and management. We offer our assistance as the Monitoring and Adaptive Management Plans continue to develop.

Two of the four projects (ARDC Modifications and Atchafalaya to Terrebonne/HNC Lock) were restricted from providing large scale benefits due to the cost constraints authorized in WRDA 2007. The USACE and State of Louisiana boldly expanded the Medium Diversion at White Ditch beyond its cost authorization to adequately address the sustainability of the study area. We commend the USACE and State for this action. We would have liked to see the same initiative to address the concerns of the Maurepas and Terrebonne Basins. Many large-scale restoration measures were considered in these studies, but dismissed due to costs. The ARDC Modification Project only addressed one of the four identified degraded hydrologic units and the Atchafalaya to Terrebonne/HNC Lock Project only reduces the land loss rate by 10 percent over the 50 year period. Much larger scale restoration in these basins is needed. In these instances, the project did not truly meet the objectives of the project in the entire study area. A phased approach to project implementation should be provided that evaluates all needed restoration measures to meet the full objectives of the study without any cost constraints, identifies the critical first steps, and identifies phased project implementation based on available funding.

It is imperative that the USACE complete the Feasibility Reports and the Chief's Report for these LCA projects before the end of the year. Specific comments on each project are enclosed. We believe these comments could be addressed during the engineering, design, construction or adaptive management phases of the projects and will not delay the process.

The undersigned groups welcome the opportunity to discuss our recommendations at any time.

Sincerely,

**Coalition to Restore Coastal Louisiana**

Steven Peyronnin    Natalie Snider  
Executive Director    Science Director

**Lake Pontchartrain Basin Foundation**

John Lopez, Ph.D.  
Director of Coastal Sustainability

**Environmental Defense**

Jim Tripp    Angelina Freeman, Ph.D.  
General Counsel    Coastal Scientist

**National Audubon Society**

G. Paul Kemp, Ph.D.  
Vice President, Gulf Coast Initiative

**National Wildlife Federation**

Karla Raettig  
National Campaign Director

cc:    Garret Graves, Coastal Protection and Restoration Authority  
      Steve Mathies, Louisiana Office of Coastal Protection and Restoration  
      Timothy Axtman, U.S. Army Corps of Engineers

**Medium Diversion at White Ditch  
LCA Draft Feasibility Report**

A key component to restoration of Louisiana's coastal landscape is to reconnect the Mississippi River to the wetlands by mimicking natural processes that use the power of the Mississippi River to build land and maintain ecological integrity including habitats, communities, and storm buffering capacity. We strongly support the Medium Diversion at White Ditch and its objectives to provide freshwater, nutrients and sediments designed to restore degraded habitat and sustain a larger coastal ecosystem to support and protect the environment, economy, and culture of southern Louisiana.

Much has been learned recently about the design and operation of diversions in the Lower Mississippi River for coastal restoration, including the advantages of using pulsing as an operational strategy to maximize sediment capture (Allison and Meselhe, 2010). With rising sea levels and predictions for increased storm frequency/intensity, it is imperative that restoration projects are designed to maximize potential for offsetting projected land loss. Therefore, we commend and support the Tentatively Selected Plan (TSP) incorporating pulsing at 35,000 cfs (cubic feet per second) at high river flows to maximize sediment capture in the planning and operation of the diversion. The minimal amount of shoaling in the river expected from operation of the diversion in a pulsed fashion (1,000 cfs diversion that is pulsed at 35,000 cfs at the beginning of spring flood when suspended sediment concentrations are significantly elevated) is an additional advantage to this operational regime. Designing flexibility into this diversion project by providing pulsing capacity allows adaptation to unforeseen circumstances, as demonstrated by the Deepwater Horizon oil spill where river diversions were used to keep oil at bay. We applaud the Corps for evaluating a pulsed diversion in the analysis, and agree that the pulsed operation of the TSP maintains the medium diversion category authorization.

The sediment concentrations in the Mississippi River can vary significantly according to location, and a thorough analysis of site specific data and modeling would improve prediction of sediment efficiency and land building potential relative to diversion locations. Extensive sediment data collection and modeling is being undertaken in the White Ditch reach of the river in support of the Myrtle Grove Land Building Diversion. Using this type of data and modeling results in the benefits and drawbacks of location selection would provide a more robust analysis. We suggest incorporation of this additional data in Planning, Engineering, and Design.

The conveyance channel for the TSP accounts for almost half the total cost for the project. We agree that amending language from House/Senate subcommittees that

adjusts the project as authorized in WRDA 2007 for the increase in construction cost is warranted. However, we recommend reevaluating the conveyance channel and whether natural channel formation can be effectively utilized allowing the engineering to be scaled back (thereby reducing cost) to be investigated in Planning, Engineering, and Design. Natural channel formation could be incorporated into the Monitoring and Adaptive Management Plan and funding for channel modifications could be acquired on an as needed basis as a part of Operations and Maintenance.

References

Allison, M.A. and Meselhe, E.A., 2010. The use of large water and sediment diversions in the lower Mississippi River (Louisiana) for coastal restoration. *Journal of Hydrology* 387, 346-360.



**Convey Atchafalaya to Northern Terrebonne Marsh/  
Multipurpose Operation of the Houma Navigation Canal (HNC) Lock  
LCA Draft Feasibility Report**

In contrast to the robustness of the Medium Diversion at White Ditch project, the narrowing of ambition in the design of the Convey Atchafalaya to Northern Terrebonne Marsh/Multipurpose Operation of the Houma Navigation Canal (HNC) Lock is striking.

As stated in the Draft Feasibility Report:

*The purpose of the project is to reverse the current trend of marsh degradation in the project area resulting from subsidence, erosion, saltwater intrusion, and lack of sediment and nutrient deposition. The project proposes to accomplish this by utilizing fresh water, sediments, and nutrients from the Atchafalaya River and the Gulf Intracoastal Waterway (GIWW).*

The report goes further to define the objectives of the project to include:

- ? Prevent, reduce, and/or reverse future wetland loss
- ? Achieve and maintain characteristics of sustainable marsh hydrology
- ? Reduce salinity levels in project area
- ? Increase sediment and nutrient load to surrounding wetlands
- ? Increase residence time of fresh water
- ? Sustain productive fish and wildlife habitat

We do not feel that the alternatives developed for this project meet the objectives of the project. Alternative 2 was selected as the Tentatively Selected Plan. However, the TSP will reduce land loss rates by a mere 10 percent over the 50-year project period and this benefit will be lost with intermediate or high relative sea level rise. The Draft Feasibility Report states that modeling of Alternative 3 under intermediate RSLR would reduce the effectiveness of the project by 87 percent and effectiveness of the other alternatives, including the TSP, would be similar. None of the alternatives would prevent marsh collapse at the high RSLR rate.

Although none of the alternatives meet the full objectives of the project, there are benefits to be realized from the project. Based on the description of the eight alternatives available, we feel that Alternative 3 has additional benefits over Alternative 2 and should be selected as the Tentatively Selected Plan (TSP). Alternative 3 includes all the measures in Alternative 2 plus two additional measures in the West – Bayou Penchant Area. To increase flows from the Atchafalaya River, water will be moved from Bayou Shaffer to the Avoca Island Cutoff/Bayou Chene. This will be accomplished by creating an opening through the Avoca Island levee and installing a large gated diversion structure



(WS4) in the opening. The remaining measure (WO2) would place stone along the shore of Bayou Chene and Avoca Island Cutoff to protect from increased flows. Alternative 3 would prevent 10,308 acres of emergent marsh soils from being converted to open water over the 50-year period of analysis and would generate 3,325 AAHUs.

Alternative 2, the TSP, does not make any change to the Avoca Island Levee, one of the root causes for problems in this area that this project is designed to address. The northern and central Terrebonne Basin is in dire need to additional freshwater and sediment inputs. While even Alternatives 3 would provide only modest amounts of water and sediment into this deteriorating basin, they would represent a net addition of water and sediment above current levels. We would therefore urge further consideration of a gate diversion structure in a new Avoca Island levee opening, a structure that would return the hydrology of this part of the coast more to the distribution of flows that existing prior to construction of the levee.



**Small Diversion at Convent/Blind River  
LCA Draft Feasibility Report**

A key component to restoration of Louisiana’s coastal landscape is to reconnect the Mississippi River to the wetlands by mimicking natural processing that use the power of the Mississippi River to build land and maintain ecological integrity including habitats, communities, and storm buffering capacity. We strongly support the Small Diversion at Convent/Blind River and its objectives to provide freshwater, nutrients and sediments designed to restore and sustain degraded forest ecosystem to support and protect the environment, economy, and culture of southern Louisiana.

We support the selection of Alternative 2, a 3,000-cfs gated culvert diversion structure at Romeville, Louisiana, as the TSP for the Small Diversion at Convent/Blind River. Alternative 2 is also the NER Plan. Although we typically support larger flow rates, we understand the constraints of the receiving area and the need to provide both wet and dry periods for natural regeneration of the forest. We also support the robust monitoring plan to be utilized to adaptively manage the structure operations including optimal pulsing periods and various flow rate impacts.

We are concerned about the requirements for Operations, Maintenance, Repair, Rehabilitation and Replacement (OMRR&R). The Feasibility Report estimates that the total annual cost will be \$2,754,000. Over the 50 year lifetime of the project, that equates to \$137,700,000 in OMRR&R. Most of this cost is associated with dredging in the Transmission Canal (\$2,200,000 per year). There was no discussion of alternatives to dredging, such as modification to the canal to limit sedimentation. Although the material will be used beneficially and “discharged into the swamp in a controlled manner to supplement land-building”, there is no detailed discussion on how this will be accomplished.

In addition, the deposition of 150,000 cubic yards of material annually appears to be an estimate based on multiple assumptions. With the uncertainty involved, the Monitoring and Adaptive Management Plan should monitor impacts to the Transmission Canal and recommend dredging on an as needed basis. The adaptive management plan should also evaluate structure operation and pulsing that maximizes impacts and minimizes dredging requirements.

Lastly, Appendix L: Engineering Appendix states that material dredged during the construction of the Transmission Canal can be sold as excess spoil by the contractor or used to widen/raise the adjacent berm. There appears to be no discussion of alternatives to use the material beneficially.

Estimates for OMRR&R were based on the preliminary design for a feasibility-level study. Additional considerations will be given in the PED phase for the reduction of OMRR&R associated costs. Adaptive management measures over the life of the project also are expected to contribute to cost-reducing practices to minimize these costs.

Concur. Language below on flexibility was added to section 7.2 of Monitoring and Adaptive Management Plan: “Some potential adaptive management actions for this project may include modifying the operation of the diversion structure or modifying operations of outfall management features and to allow operational flexibility, such as pulsing, based on monitoring results. The monitoring and assessment teams should continue to evaluate operations to maximize benefits and minimize dredging requirements.

Use of the dredged material will be a function of its suitability for various purposes, such as berm building, or distribution in the swamp and it is intended that all dredged material will be considered for beneficial use first, prior to other considerations and in accordance with Coastal Zone Consistency Determination; however, in the event the dredged material is not suitable for beneficial use in the immediate area of the project study area, it may be sold by the contractor.



### **Amite River Diversion Canal Modifications LCA Draft Feasibility Report**

The study area for the Amite River Diversion Canal Modifications Project is within one of the largest remaining tracts of coastal freshwater swamps in Louisiana. Some of the study area is degrading to marsh or open water. The continued degradation of these areas will lead to loss of ecological function, storm surge protection values, and a unique habitat. We strongly support the Amite River Diversion Canal Modifications and its objectives to provide freshwater, nutrients and sediments into these degraded forest ecosystems to support and protect the environment, economy, and culture of southern Louisiana.

#### **Alternatives**

The Amite River Diversion Canal Modification is the only project included in the Draft Feasibility Reports where the National Ecosystem Restoration (NER) Plan, Alternative 39, was not selected as the Tentatively Selected Plan (TSP). Alternative 33 was ranked as the 4<sup>th</sup> best performing plan but was selected as the TSP due to cost constraints under the current WRDA 2007 authorization. However, the acreage of benefits for Alternative 39 provides double the benefits of the TSP over the 50 year study period and impacts all of the critical, degrading hydrologic units identified within the study.

Although the TSP, Alternative 33, meets the objectives of the study, it only meets those objectives in the most critical hydrologic unit, NE-2. The other three degraded hydrologic units (NE-1, SE-1 and SE-2) are also in critical need for hydrologic restoration and the TSP does not meet the project objectives in these units of the study area. We must keep in mind that these areas will continue to degrade, increasing the difficulty and cost of restoring these areas in the future. The maximum cost allowance in WRDA 2007 is \$10,760,000 and the NER Plan total cost is estimated at \$13,600,000. The difference of \$2,840,000 is a small cost difference in order to double the acres benefited from this project and restore hydrologic function to all four critical hydrologic units.

The Chiefs Report should acknowledge that the environmentally-preferred and cost-effective alternative was not selected due to authorization constraints. Additional authorization should be sought to authorize the NER Plan for completion under the same Feasibility Study and Environmental Impact Statement.

We fully support the State of Louisiana's position on this project:

CPRA supports the NER plan (Alternative 39) since this plan includes all of the most critical areas within the Maurepas Swamp basin, establishes the greatest amount of hydrologic connectivity of all of the alternatives, is cost-effective while providing the most benefits, and is a best-buy plan. However, due to authorized cost limitations in WRDA 2007, CPRA supports Alternative 33 as the TSP. CPRA believes the project warrants additional Congressional authorization to increase funding and allow the implementation of the NER plan (Alternative 39) to fully address the Maurepas Swamp's ecosystem needs identified in this report.

#### Monitoring and Adaptive Management Plan

We certainly understand the need to incorporate adaptive management into the LCA projects. However, the Feasibility Report states that there are minimal active adaptive management opportunities for the Amite River Diversion Canal project and that the lessons learned would not likely apply to other coastal Louisiana restoration projects. The Monitoring and Adaptive Management Plan states that the Amite River Diversion Canal project will not be adaptively managed.

The Feasibility Study analyzed the need for restoration throughout the study area and identified four hydrologic units in a degraded state. Hydrologic restoration will only occur in the NE-2, however it is still imperative to understand the impacts of this decision on the other degrading hydrologic units. Although the Monitoring and Adaptive Management Plan, includes the monitoring objectives for the entire study area, which includes the four most critical hydrologic units, the monitoring procedures are described for within the project area, which only includes one of the critical units, NE-2. Thus, it is unclear if the Monitoring and Adaptive Management Plan intends to monitor ecological variables in the entire study area or just the project area.

It is our recommendation that the Monitoring and Adaptive Management Plan collect monitoring data on the entire study area, or at least the four degraded hydrologic units, to not only understand the outcomes of the project construction but to also understand the outcomes of project decision-making.

We are also concerned with the cost estimates associated with Alternative 33, specifically the costs to monitor the project outcomes (\$2,971,200). This cost is nearly 40 percent of the total project cost and we assume will only cover monitoring within the project construction area. For the NER Plan, Alternative 39, monitoring is only 26.9 percent of the total project cost.

Although monitoring and research is one of the most important aspects of project performance and future planning, and those costs should be incorporated into the total project costs, we should be very aware of the need to balance monitoring and the overall project costs. In addition, these monitoring costs would be more reasonable if monitoring was being conducted on the entire study area instead of just one of the hydrologic units.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13th Avenue, South  
St. Petersburg, Florida 33701

June 18, 2010 F/SER46/RH:jk  
225/389-0508

Ms. Joan Exnicios, Chief  
Environmental Planning and Compliance Branch  
New Orleans District, U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the four public notices dated May 21, 2010, pertaining to the Louisiana Coastal Area – Ecosystem Restoration Projects. Those public notices are variously titled:

1. Amite River Diversion Canal Modification Project, Livingston and Ascension Parishes, Louisiana.
2. Small Diversion at Convent/Blind River, St. James Parish, Louisiana.
3. Medium Diversion at White Ditch, Plaquemines Parish, Louisiana.
4. Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock

NMFS is presently reviewing Supplemental Environmental Impact Statements for each of the above identified projects. While we have significant recommendations pertaining to needed revisions to those documents, we do not expect to object to authorization or implementation of any of the above identified projects. As such, NMFS has no comments to provide on the public notices for any of the projects identified above.

We appreciate the opportunity to review and comment on these projects

Sincerely,

*Miles M. Croom*

for MILES M. CROOM  
Assistant Regional Administrator  
Habitat Conservation Division

c:  
FWS, Lafayette, Walther  
EPA, Dallas, Mick  
LA DNR, Consistency, Ducote  
F/SER46,-Swafford  
Files



Acknowledge this letter as NMFS is preparing comments

SEMINOLE TRIBE OF FLORIDA  
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC  
PRESERVATION OFFICE  
SEMINOLE TRIBE OF FLORIDA  
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MICHAEL D. TIGER

Dr. William Klein Jr.  
U.S. Army Corps of Engineers  
Planning, Programs, and Project Management Division  
Environmental Planning and Compliance Branch  
CEMWN-PM-RS  
P.O. Box 60267  
New Orleans, LA 70160-0267

No response required other than to acknowledge letter and send them a copy of the report (USACE doing this)

THPO#: 006201

June 22, 2010

**Subject:** LCA Convent Blind River Diversion, Louisiana

Dear Mr. Klein,

The Seminole Tribe of Florida Tribal Historic Preservation Office (STOF-THPO) has received the **New Orleans District Corps of Engineers'** project notification for the aforementioned project. Due to the fact that the project area is within the geographic area considered by the Seminole Tribe of Florida to be ancestral, aboriginal, or ceded (NHPA 1966, Section b1, and 36 CFR, Section 800.2), the STOF-THPO would like to request a copy of the Environmental Impact Statement for review prior to making any further comment. We thank you for the notification of this proposed project. Please reference **THPO-006201** in any future documentation about this project.

Sincerely,

*Direct routine inquiries to:*

Willard Steele,  
Tribal Historic Preservation Officer  
Seminole Tribe of Florida

Anne Mullins  
Compliance Review Supervisor  
annemullins@semtribe.com

Ah-Tah-Thi-Ki Museum, HC-61, Box 21-A, Clewiston, Florida 33440  
Phone (863) 902-1113 • Fax (863) 902-1117



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701

July 1, 2010 F/SER46/KC:jk  
225/389-0508

Ms. Joan M. Exnicios, Chief  
Environmental Planning and Compliance Branch  
Planning, Programs, and Management Division  
New Orleans District, U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Draft Integrated Feasibility Study and Supplemental Environmental Impact Statement for the Louisiana Coastal Area Small Diversion at Convent/Blind River, in St. James Parish, Louisiana. The document was transmitted for our review by your letter dated May 21, 2010. Your letter indicates that submittal of the document to NMFS initiates essential fish habitat consultation as required by provisions of the Magnuson-Stevens Fishery Conservation and Management Act. It should be noted that NMFS has agreed to serve as a cooperating agency on this project under provisions of the National Environmental Policy Act.

The overall study area is located in the vicinity of Romeville, Louisiana. The tentatively selected plan (Alternative 2) calls for construction of a water diversion system, near Romeville, with the capacity to divert 3,000 cubic feet per second of Mississippi River water into Maurepas Swamp to facilitate maintenance and rebuilding of the swamp's ecosystem. Specific components of the project include a gated culvert system and transfer canal, restoration and improvement of 160 existing berm cuts, addition of 30 new 500-foot-wide berm cuts, construction of up to six water control structures at strategic locations in the swamp, and addition of three new culverts under U.S. Highway 61. The tentatively selected plan is estimated to improve and protect 21,369 acres of bald cypress-tupelo swamp projected to be lost over the 50-year period of analysis, including: 1) 3,300 acres of bald cypress-tupelo swamp that would convert to marsh in 20 to 30 years; 2) 7,900 acres of bald cypress-tupelo swamp that would convert to marsh in 30 to 50 years; and 3) 10,140 acres of bald cypress-tupelo swamp that would convert to marsh in more than 50 years. The project would negatively impact 53 acres of forested wetland and is estimated to have a net value of 6,421 Average Annual Habitat Units over the 50-year period of analysis.



The enclosed comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and 600.920 of the Magnuson-Stevens Fishery Conservation and Management Act.

Related correspondence should be directed to the attention of Mr. Richard Hartman at the NMFS Southeast Region, Habitat Conservation Division office at: c/o LSU, Baton Rouge, Louisiana 70803-7535. He may be contacted by telephone at (225) 389-0508, ext. 203 or by e-mail at [richard.hartman@noaa.gov](mailto:richard.hartman@noaa.gov). The NMFS Protected Resources Division is responsible for issues pertaining to threatened and endangered species and marine mammals. The contact person for that Division is Mr. David Bernhart. He may be contacted at the letterhead address, by telephone at (727) 824-5312, or by e-mail at [david.bernhart@noaa.gov](mailto:david.bernhart@noaa.gov).

Sincerely,



Miles M. Croom  
Assistant Regional Administrator  
Habitat Conservation Division

Enclosure

cc:  
FWS, Lafayette, Walther  
EPA, Dallas, Ettinger  
LA DNR, Consistency, Ducote  
F/SER46, Swafford  
F/SER4, Dale  
NOAA PPI, Reid  
Files



**NOAA's National Marine Fisheries Service (NMFS) Comments on the Draft  
Supplemental Environmental Impact Statement (SEIS) for the Louisiana Coastal  
Area (LCA)  
Small Diversion at Convent/Blind River, St. James Parish, Louisiana  
Authorized under the 2007 Water Resources Development Act**

**Essential Fish Habitat (EFH) Consultation**

Based on our review of the SEIS, NMFS has determined the document and related coordination with the NMFS fulfills consultation requirements contained in section 600.920 of the essential fish habitat (EFH) rules and regulations of the Magnuson-Stevens Fishery Conservation and Management Act.

According to the SEIS, Lake Maurepas, which adjoins the project area, is designated EFH for red drum (*Sciaenops ocellatus*) and white shrimp (*Litopenaeus setiferus*). Although Lake Maurepas is technically located outside of the study area, the SEIS notes that some shift and possible decrease in "optimal habitat" for red drum and white shrimp is possible with the tentatively selected plan. The SEIS indicates the level of change and adverse impact, if any, to EFH would be minor; while considerable benefit to EFH is possible since ongoing conversion of wetlands to open water would be reduced. Best management practices, environmental monitoring, and adaptive management would be implemented with the preferred plan.

Based on the preceding, NMFS has no EFH conservation recommendations to offer at this time. Provided that the project is completed and operated as proposed, no further consultation is required.

**General comments**

The SEIS for the proposed action is generally well written and sufficiently describes the affected environment and environmental impacts. The information presented supports the determination that the selected plan is environmentally acceptable and would promote the long-term recovery and health of one of Louisiana's largest tracts of freshwater swamp and a major ecological component of the Lake Pontchartrain Basin.

**Specific comments**

SECTION 1.0 STUDY INFORMATION  
1.5 Prior Reports and Existing Projects  
1.5.3 Existing Water Projects  
1.5.3.3 Coastal Restoration Projects

Page 1-15, lines 37-42 According to this section, the LCA Small Diversion at Hope Canal consists of diverting approximately 1,500 cubic feet per second from the

This information is available, but similar to the Blind River project the exact diversion flow rates for the Hope Canal project are open to adaptive management and the flow will vary depending on natural conditions. The most current report has a flow rate that varies from 1500 to 2000 cubic feet per second. Language from the Hope Canal report on diversion strategy, if available, will be included in this report.

Mississippi River into the Hope Canal at Garyville, Louisiana. Information is needed concerning the duration and seasonal timing of the diversion period.

SECTION 3.0 ALTERNATIVES

3.3 Preliminary Alternatives Plans

3.3.1 Development of Preliminary Alternative Plans

CB-6 Obtain Total Maximum Daily Load (TMDL) waiver for diversion into Blind River

Page 3-27, lines 26-30 According to this section, the overall project has an extensive monitoring plan and includes costs for adaptive management "to assure that the overall water quality in the Blind River is not degraded." Also, as noted in section 3.7.7 (page 3-104, line 28) water quality impairment is a potential risk endpoint of the project. NMFS recommends that both the final SEIS and the Monitoring and Adaptive Management Plan (MAMP) (Appendix I) clearly state that water quality in Blind River and Lake Maurepas will be monitored and that management measures will be implemented when needed to remedy project-related water quality degradation.

Also according to this section: "The State agencies will work together to monitor the diversion operation to assist with the overall environmental improvement of the Blind River." This section should be modified to note that federal resource agencies, including the NMFS and U.S. Fish and Wildlife Service (FWS), would be consulted with regard to environmental monitoring and adaptive management measures needed to protect and restore fish and wildlife resources and habitat, including EFH in Lake Maurepas.

3.7 Plan Selection – Tentatively Selected Plan

3.7.3 Components

Page 3-95, lines 12-17 NMFS recommends the description for the control structures in the selected plan include a map of the project area illustrating the expected locations of the various features including the control structures. NMFS recommends the map be accompanied by a diagram depicting the design plans and specifications of the control structures, as well as a detailed operational scheme.

3.7.6 Operations and Maintenance Considerations

Page 3-99, lines 35-38 NMFS understands the need to provide access to the maintenance canal; however, the final SEIS should address the possibility that mowing be limited to one side of the canal and shrubs and trees be allowed to grow on the unmowed bank. Establishment of trees along one side of the canal would reduce maintenance and disturbance, lessen water temperature increases in summer, and provide cover for wildlife.

Page 3-100, lines 24-25 The diversion flow period (six to nine months per year) should be identified and discussed, as appropriate, throughout the final SEIS. Currently, the diversion flow period is not mentioned elsewhere in the document.

The Monitoring and Adaptive Management Plan does clearly state that stage, velocity, turbidity, dissolved oxygen, salinity, nutrients, and TSS measurements will be conducted at 5 locations on Blind River. During PED the Adaptive management and monitoring plan will be revised based on the final project designs. At this time the water quality elements will be revisited and revised as necessary in coordination with agencies to ensure that the appropriate level and location of monitoring and adaptive management actions are in place.

Section 1.3 of Appendix I states the intention of the USACE to engage NOAA/NMFS and other federal resource agencies as participants in the adaptive management program for this project. "As part of the LCA Program communication structure for implementation of adaptive management (Figure 3), an LCA Adaptive Management Planning Team will be established. This team will be led jointly by a Senior Planner from the USACE and a counterpart from the OCPR. Other team members include USACE and State support staff and representatives from USFWS, NOAA, Natural Resources Conservation Service (NRCS), and Louisiana Department of Wildlife and Fisheries (LDWF). These members will be selected on the basis of their knowledge of ecosystem restoration, coastal Louisiana ecosystems and adaptive management. Other resources and expertise will be brought in as needed. This team will be responsible for recommending project and program adaptive management actions to the LCA Management Team."

A map to illustrate location of the TSP plan features will be included in Section 3.0 "TSP Features" of the report. The preliminary plans and specs for the control structures, as presented in the feasibility phase are included in Appendix L, Annex L-4 to L-6. A detailed operational scheme for these structures will be developed in the PED phase of this project.

The addition of tree and shrub growth along the maintenance canal is a good consideration and will be further explored in the PED phase of the project.

As additional modeling will be completed during the PED phase of the project, the diversion flow period will be refined.

Page 3-101, lines 6-10 NMFS recommends this section be modified to note that planned maintenance excavation within the transmission canal will be coordinated with state and Federal resource agencies. Coordination should address beneficial use of excavated material, excavation and disposal methodologies, timing, and other considerations as needed to protect fish and wildlife.

3.7.7 Monitoring Plan and Adaptive Management

Pages 3-101 through 3-104 The MAMP is an essential component of the project. Environmental monitoring is needed to assess project related impacts and establish operational changes needed to protect and restore EFH and other habitat and resources. By letter dated April 7, 2010, the FWS, in consultation with NMFS, provided detailed comments concerning needed changes in the project's MAMP. NMFS recommends the MAMP be modified in accordance with FWS and NMFS recommendations. Also, as noted below (see "APPENDIX I"), the MAMP should be modified to include performance measures that call for water quality monitoring and adaptive management to remedy water quality problems in Blind River if they should occur.

The MAMP also should include water quality monitoring and adaptive management as needed to remedy potential water quality problems in Lake Maurepas if such problems occur. Depending on the amount and rate of nutrient assimilation by wetlands after repeated or long term nutrient loading, NMFS is concerned the proposed diversion of river water could create algal blooms in and eutrophication of waterways in the project area. The MAMP should identify sampling locations, frequency, and duration for measuring dissolved oxygen levels in Lake Maurepas, which is designated as EFH for red drum and white shrimp, with particular emphasis on collecting data during the summer months. Potential adverse impacts to EFH in Lake Maurepas also include displacement of these designated fishery species from the area due to extreme turbidity and salinity changes, as well as colder water temperatures. These water quality parameters should be included in the MAMP for the lake.

Page 3-101, line 27 The feasibility level MAMP is provided in Appendix I, not Appendix J, as stated.

3.8 Risk and Uncertainty  
3.8.2 Environmental Uncertainties

Page 3-113, lines 9-21 This section should be expanded to note that uncertainty exists regarding salinity change and nutrient input into Blind River and other downstream waters and that this uncertainty will be addressed through project monitoring and adaptive management.

Page 3-114, lines 19-24 NMFS supports plans to conduct salinity monitoring. As noted in comments below (APPENDIX I), the final SEIS should acknowledge that salinity

Acknowledged. Text will be added on coordination with other state and Federal resource agencies.

AM plan was revised based on April 7, 2010 USFWS comments. Responses to the specific the USFWS comments are included in this appendix on page 55. The Monitoring and Adaptive Management Plan does recommend stage, velocity, turbidity, dissolved oxygen, salinity, nutrients, and TSS measurements to be conducted at 5 locations on Blind River. During PED the Adaptive management and monitoring plan will be revised based on the final project designs. At this time the water quality elements will be revisited and revised as necessary in coordination with agencies to ensure that the appropriate level of monitoring and adaptive management actions are in place to identify any water quality issues and remedy them if they should occur. Assessment of water quality monitoring data will indicate if any operational changes in the diversion or outfall management features are needed to address water quality impairment. Water quality impairment in Blind River is identified in the adaptive management and monitoring plan and will be measured as a risk end point and not specifically as a performance measure since improving water quality is not a stated objective of the Blind River project. The developed Risk endpoint is incorporated in the Adaptive management plan to measure and identify potential undesirable outcomes of the project and will be a trigger for adaptive management.

The Risk Endpoint under Objective 4 has been changed to include Lake Maurepas in addition to Blind River.

Concur. This correction was made in the report.

Language was added in Appendix I, section 7.2 regarding flexibility of operations. The AM Framework Team does not interpret project operations as an "uncertainty". We believe the relevant uncertainty is amount, duration, and timing of water flow and the ecological response to the changed hydrology.

monitoring will be conducted in the lower reaches of Blind River and, if warranted, the southeastern portion of Lake Maurepas.

This section also should be expanded to note that uncertainty exists regarding the need for increases in frequency and duration of operational closures of the project area water control structures and that this uncertainty will be addressed through project monitoring and adaptive management.

SECTION 4.0 AFFECTED ENVIRONMENT  
4.2 Significant Resources  
4.2.10 Essential Fish Habitat (EFH)

Page 4-82, lines 12-13 According to this section, the February 20, 2009, letter from NMFS states that no EFH exists in the project area. However, NMFS did state that Lake Maurepas is designated as EFH for red drum and white shrimp. NMFS recommended water quality impacts be modeled to evaluate the potential for the proposed freshwater diversion to influence changes in salinity, water temperature, and dissolved oxygen levels in the lake. Those potential impacts should be addressed in the document and included in the monitoring and adaptive management plan.

SECTION 5.0 ENVIRONMENTAL CONSEQUENCES  
5.3 Water Quality and Salinity  
5.3.4 Salinity

Page 5-71, lines 21-27 This section provides summary statistics regarding the expected project impacts on salinity in Lake Maurepas. For example, the SEIS indicates a 2,500 cfs diversion would reduce salinities in Lake Maurepas by 30% and a larger diversion would likely reduce salinities more than that. Section 4.2.3.3 of the SEIS provides data on historical salinity levels at various locations relevant to the project. Given the discussion in other sections of the document pertaining to marine fishery species and EFH, this section should be revised to indicate what the expected future salinities will be at various locations with project implementation. NMFS suggests a table be provided in the final SEIS identifying mean and maximum historic salinities at various locations in the project area and what the modeled salinities would be at those locations with project implementation.

5.10 Essential Fish Habitat (EFH)

Page 5-110, lines 11-30 The first sentence in this section (lines 12-14) is confusing and should be rewritten to clarify where and to what extent salinity might decrease and how this might affect "optimal habitat" for red drum and white shrimp. NMFS recommends the final SEIS indicate that any reduction in salinity in Lake Maurepas would represent movement in the direction of historical conditions that existed prior to anthropogenic alteration (disruption) of water flow into the Maurepas Swamp.

Previous studies have noted that Lake Maurepas is a freshwater lake (<1.5 parts per thousand salinity). Only during extreme drought periods does the Lake become slightly brackish (2 to 4 parts per thousand salinity). Modeling of Lake Maurepas involves input from several sources other than Blind River. As discussed in the report section 5.3.4

The Blind River project will improve the water quality of the Blind River throughout its course which will discharge to Lake Maurepas. During PED hydrology and water quality will be further modeled for the project at the necessary locations to address any remaining uncertainties in Lake Maurepas. The additional project modeling in addition to the future efforts such as the LCA Hope Canal project would further provide the necessary information to determine if there would be any potential impacts to EFH.

Studies of Lake Maurepas indicate the lake is a freshwater lake. Normal salinity levels are less than 2 parts per thousand, as indicated in several reports on the Lake. Then the 30% reduction will result in salinities less than 1.4. In either case the Lake remains a freshwater lake. There are times during extreme drought (last was 1999) when the salinity was near 4 parts per thousand which made the lake temporarily brackish. The Blind River and Hope Canal diversions will keep the lake fresher during drought periods and in those cases should exceed the 30% reduction and keep the lake fresh with salinities less than 2 parts per thousand. It should always be noted that during tropical storm surge events the salinity will exceed the level for freshwater. The diversions will be able to flush the Lake and swamp areas around the lake to preserve the freshwater vegetative and aquatic species by shortening the duration of the saline inundation. Any salinity reduction in the Lake Maurepas due to the operation of the project will not cause environmental impacts since the lake is already a freshwater lake. However, while some uncertainty of change in water quality exists, water quality monitoring stations installed within the swamp and along Blind River as part of the feasibility phase will result in more substantial water quality and salinity data that will be used to refine water quality modeling during the PED phase. Additionally, as data and further analysis on other projects in the Maurepas Swamp area, such as Hope Canal, are available, the cumulative effects of all projects on water quality will be examined more fully.

Any salinity reduction in the Lake Maurepas due to the operation of the project will not cause environmental impacts since the lake is already a freshwater lake. However, while some uncertainty of change in water quality exists, water quality monitoring stations installed within the swamp and along Blind River as part of the feasibility phase will result in more substantial water quality and salinity data that will be used to refine water quality modeling during the PED phase. Additionally, as data and further analysis on other projects in the Maurepas Swamp area, such as Hope Canal, are available, the cumulative effects of all projects on water quality will be examined more fully.

Salinity monitoring as called for in section 3.8.2.1 (page 3-114; line 19) is vital to a determination of the level of habitat alteration in Lake Maurepas. As such, NMFS recommends this section be modified to note that while the consequences of salinity modification are expected to be negligible, salinity and water quality monitoring are planned, as well as the implementation of adaptive management, as needed, to preclude significant adverse impacts to EFH.

**APPENDIX I**

Page 10: Objective 4: Improve fish and wildlife habitat in the swamp and in Blind River

According to the Alternatives Analysis (page 3-27; lines 26-30) "The overall project has an extensive monitoring plan and includes costs for adaptive management to assure that the overall water quality in the Blind River is not degraded." Despite this statement, the MAMP performance measures contain no parameters associated with water quality monitoring for nutrient input or modification of dissolved oxygen and salinity. NMFS recommends this be addressed in the SEIS and that the MAMP be modified to specifically state that water quality monitoring for nutrients, salinity, and dissolved oxygen will be undertaken and adaptive management will be implemented, if needed, to remedy water quality problems in the Blind River. As noted in preceding comments concerning page 3-27; lines 26-30, NMFS further recommends the SEIS and MAMP be modified to state that federal resource agencies, including NMFS and FWS, will be consulted with regard to environmental monitoring and adaptive measures needed to protect and restore fish and wildlife resources and habitat in the study area, including EFH in Lake Maurepas.

Improving water quality is not a stated objective of the Blind River project; therefore, there is no performance measure, only a risk endpoint, for water quality. As a risk endpoint, it is proposed to be monitoring at 5 stations in the Blind River. Additional monitoring may occur if LDEQ TMDL threshold is exceeded. Section 1.3 of Appendix I states the intention of the USACE to engage NOAA/NMFS and other federal resource agencies as participants in the adaptive management program for this project.



United States Department of Agriculture



Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

(318) 473-7751  
Fax: (318) 473-7626

June 21, 2010

Ms. Joan M. Exnicios  
Chief, Environmental Planning & Compliance Branch  
Department of the Army, New Orleans District, COE  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

RE: Pre-Decisional Draft, Integrated Feasibility Study and Supplemental Environmental Impact Statement for the Louisiana Coastal Area (LCA) Small Diversion at Convent/Blind River, St. James Parish, Louisiana

Dear Ms. Exnicios:

As requested in your public notice correspondence of May 21, 2010, referenced above, the Natural Resources Conservation Service (NRCS) has reviewed the information and offers the following comments:

NRCS supports the tentatively selected plan (TSP), Alternative 2, a 3000 cfs diversion at Romeville to aid in reversing the trend of deterioration in the southeast part of the Maurepas Swamp. NRCS agrees with providing the operational flexibility to establish a hydroperiod and manage hydroperiod fluctuations to improve seedling germination and survival. NRCS agrees that the TSP will reverse the deterioration of both the swamp and Blind River by utilizing the natural swamp building and assimilation processes.

NRCS appreciates the opportunity to offer comments. If you have questions or need additional information, please call Mike Nichols at (318) 473-7690.

Respectfully,

Kevin D. Norton  
State Conservationist

cc: W. Britt Paul, ASTC/WR, SO, NRCS, Alexandria, LA  
Mike Nichols, WB, SO, NRCS, Alexandria, LA

No response required other than to acknowledge receipt of their letter and agreement with the TSP

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## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

JUL 01 2010

Colonel Alvin B. Lee  
New Orleans District  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160-0267

Dear Colonel Lee:

In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) Region 6 has reviewed the Corps of Engineers (Corps) May 2010, draft Supplemental Environmental Impact Statements (DSEISs) for the following four Louisiana Coastal Area (LCA) projects: Small Diversion at Convent/Blind River; Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock; Medium Diversion at White Ditch; and Amite River Diversion Canal Modification. With this letter and enclosed Detailed Comments, EPA offers integrated ratings, comments, and recommendations on these DSEISs.

EPA greatly appreciates the Corps' ongoing interagency collaboration on the LCA program. Such teamwork is essential for leveraging and maximizing the resources available to address the pressing coastal issues facing Louisiana. EPA fully recognizes that the Congressionally-mandated timelines for the subject LCA studies, combined with the many other priority projects the Corps is engaged in place pressure on personnel and resources available for data gathering and analysis. While these factors have affected the rigor of analysis for the LCA studies, such shortcomings are to some extent mitigated by the fact that the subject projects tier from planning and analysis in the LCA programmatic EIS (2004) and in related coastal restoration efforts such as the Coastal Wetlands Planning, Protection, and Restoration Act.

EPA's comments are intended to help address remaining information gaps while striking a balance with the need to move forward expeditiously with coastal restoration projects in Louisiana. EPA is cognizant that uncertainty with major variables (particularly future relative sea level rise) hampers the ability to accurately predict the impacts and effectiveness of these and other coastal restoration projects. Robust monitoring and adaptive management programs are, therefore, essential. EPA also notes that unlike a new cross-basin levee or other large-scale artificial manipulation of the coastal landscape, these restoration projects generally attempt to mimic natural processes. Thus, the potential environmental downsides of proceeding with coastal restoration projects based on imperfect knowledge are generally more acceptable than would be the case for projects that pose significant potential adverse environmental impacts.

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EPA Region 6 rates the four DSEISs as follows:

- **Small Diversion at Convent/Blind River: "EC-2"**. (EPA has environmental concerns and requests additional information in the Final Supplemental Environmental Impact Statement.)
- **Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock: "EC-2"**. (EPA has environmental concerns and requests additional information in the Final Supplemental Environmental Impact Statement.)
- **Medium Diversion at White Ditch: "EC-2"**. (EPA has environmental concerns and requests additional information in the Final Supplemental Environmental Impact Statement.)
- **Amite River Diversion Canal Modification: "LO"**. (EPA's review has no objections and has not identified any potential environmental impacts requiring substantive changes to the preferred alternative.)

EPA continues to support the LCA program as an important step toward greater efforts to restore some semblance of sustainability to parts of coastal Louisiana. To that end, it is important to reiterate that the LCA program in general and these projects in particular represent near-term measures, and should not be mistaken for the larger and more comprehensive effort needed to address coastal wetland loss in Louisiana on the scale and scope warranted. The ongoing oil spill in the Gulf of Mexico and its impacts on Louisiana's valuable coastal wetlands and aquatic resources only underscore this point. Nevertheless, these and other LCA projects can be viewed as stepping stones toward larger and more aggressive projects, and offer valuable learning and adaptive management opportunities that will help in that regard.

The proposed White Ditch project represents the largest and most ambitious use of seasonal, high-river "pulsing" as a technique to increase the environmental benefits of diversions, while reducing potential impacts to existing fisheries. Of the four LCA projects discussed herein, the White Ditch diversion offers the greatest promise for coastal restoration benefits and advancing larger-scale projects. EPA also notes that the Amite River diversion canal gapping project and the proposed Convent/Blind River diversion are not mutually exclusive and could work in concert with the proposed LCA Hope Canal diversion. Although the Blind River/Convent diversion is further along in the NEPA process than Hope Canal, the latter offers a superior opportunity to address ecosystem needs in the Maurepas Swamp. Again, while these projects are not mutually exclusive, EPA encourages expedited implementation of the Hope Canal diversion. Finally, given the relatively high cost to environmental benefit ratio, EPA would not place a high priority on implementation of the Atchafalaya River conveyance project over other LCA restoration projects, such as White Ditch.



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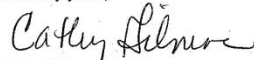
EPA appreciates that the Corps recognizes the need to monitor the extent to which the ongoing oil spill could affect study areas and aquatic resources covered by these four projects. It currently appears unlikely that the oil spill would directly affect the two proposed projects in the Maurepas Swamp, but the study areas for the other two projects have already or could be impacted by the spill. Accordingly, the Corps needs to be prepared to modify and/or further expedite such projects as needed, and perform supplemental environmental analysis where warranted.

The schedule and resource constraints discussed earlier have also affected EPA's ability to fully engage in the interagency development and review of these four LCA projects. EPA greatly respects the views of our state and Federal partner agencies with responsibilities and expertise pertaining to fish and wildlife impacts. EPA will defer to some extent to the recommendations of the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Louisiana Department of Wildlife and Fisheries on any additional information and analysis needed for resources within their purview. EPA encourages the Corps to fully address any such needs identified by these agencies.

Moving forward, we would also point out the connection between the ongoing LCA effort to develop near-term restoration projects and the interagency effort to prioritize and expedite coastal restoration projects pursuant to the March 2010, Roadmap for Restoring Ecosystem Resiliency and Sustainability (Roadmap). The interagency process initiated by the Roadmap provides a valuable opportunity to identify the most promising LCA projects and focus limited resources to ensure that such projects are constructed in a timely fashion.

EPA appreciates the opportunity to review the DSEIS's. If you have any questions about the 309 Review Process, please contact Michael Jansky of my staff at (214) 665-7451 or by e-mail at [jansky.michael@epa.gov](mailto:jansky.michael@epa.gov). If you questions or wish to discuss the technical aspects of our comments, contact John Ettinger at (504) 862-1119. Please send our office two copies of the Final SEIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460.

Sincerely yours,



Cathy Gilmore, Chief  
Office of Planning  
and Coordination 6ENXP

Enclosure

DETAILED COMMENTS

ON THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENTS  
FOR THE SMALL DIVERSION AT CONVENT/BLIND RIVER; CONVEY  
ATCHAFALAYA RIVER WATER TO NORTHERN TERREBONNE MARSHES AND  
MULTIPURPOSE OPERATION OF HOUMA NAVIGATION LOCK; MEDIUM  
DIVERSION AT WHITE DITCH, AND AMITE RIVER DIVERSION CANAL  
MODIFICATIONS FOR THE LOUISIANA COASTAL AREA

COMMENTS

1. Small Diversion at Convent/Blind River DSEIS, May 2010

In general, additional freshwater and sediments to Maurepas Swamp provided by the proposed diversion is positive for the swamp. A potential downside to diverting existing surface waters and sediments is pollutants in the diverted water could impact the Blind River and Lake Maurepas. While such concerns are manageable, EPA would recommend additional information and analysis pertaining to water quality.

The 2001 Diversion into the Maurepas Swamps study by Lee Wilson & Associates, as well as Batelle's Assessments of Ecological Risks of Contaminants from a Proposed Reintroduction of Mississippi River Water into Maurepas Swamp (Phase I and II, 2005 and 2008, respectively), are cited as support that long term adverse impacts to water quality in the Maurepas Swamp, the Blind River, and Lake Maurepas are not anticipated. Unfortunately, the study area for these documents appears limited to the LCA Small Diversion at Hope Canal project area. While these assumptions may be applicable to a single 1500 cfs diversion, the application of these assumptions to a project diverting twice the amount of water (as in Small Diversion at Convent/Blind River) must account for the difference in scope. EPA notes, however, that if the diverted water flows through the swamp rather than directly to the Blind River and Lake Maurepas, and if the area of swamp is sufficient to reduce pollutants adequately, then this may not be a significant concern.

The LCA Ecosystem Restoration Study Programmatic EIS (2004) recognizes these concerns and suggests that the LCA Plan needs to consider other activities, initiate an aggressive coordination plan with the stakeholders involved, and ensure that all activities including the LCA Plan complement each other. EPA recommends that use of studies for support of these projects acknowledge the limitations and applicability. Additionally, it is suggested that cumulative effects determinations clarify if the assumptions stated are applicable to an existing baseline with no Maurepas Swamp projects other than the single proposed project, or that the cumulative effect includes the additive effects of all related Maurepas Swamp projects.

Concur. All available data and data updates on water quality in the Mississippi River will be evaluated during PED. The Monitoring and Adaptive Management Plan (Appendix I) also proposes a rigorous plan for water quality monitoring.

Cumulative impacts resulting from incremental impacts of the past, present and future actions such as the proposed Hope Canal and LCA ARDC project were included in the analysis. The cumulative impacts dialogue for each subsection throughout Section 5.0 of the report states "Cumulative impacts would be the synergistic effects of implementing the No Action Alternative combined with the beneficial impacts of other Federal, state, local and private restoration efforts as detailed in Section 5.1.1-and refers to Hope Canal, and LCA ARDC. As the project moves into PED there will be continued and increased coordination between projects and with agencies and stakeholders.

There is likely continued interest on the part of some landowners to log cypress in the Maurepas Swamp. Given the degraded state of the swamp throughout much of this area, there is a high risk that any such logging would be unsustainable. Such logging could conflict with or undermine this and other proposed restoration efforts for the Maurepas Swamp. Accordingly, this project should include as a non-structural measure a commitment to full and effective enforcement of Clean Water Act Section 404 and/or Section 10 of the Rivers and Harbors Act as such laws pertain to logging, particularly where unsustainable.

The ongoing Corps of Engineers West Shore Lake Pontchartrain Hurricane Protection Study is reviewing different levee alignments in the vicinity of this proposed project. At least one of these levee alignments ("Alignment D") would further enclose the cypress swamp that would be benefited by this proposed diversion. There is no discussion of how these two projects would or would not work in concert to achieve the desired ecosystem restoration goals. EPA is concerned that levee alignments which enclose wetlands can result in significant direct, indirect, and cumulative adverse ecological impacts that would be contrary to the LCA Plan in general and this project in particular. The supplemental EIS should explain how any such levee work would be coordinated with the proposed for Convent/Blind River diversion, such that the former does not conflict with or undermine the latter.

**Specific comments:**

a. It is understood that the Romeville diversion (Alt 2) is the preferred alternative and if implemented will use existing St. James Parish drainage canals. Insufficient data is available to determine if this design addresses the concerns raised in the 2001 Lee Wilson report on Diversions into the Maurepas Swamps regarding diverted Mississippi River water reaching the Blind River directly with most diverted water directly delivered to Lake Maurepas as result. EPA recommends hydrologic modeling efforts to better identify/quantify how water (sediment and nutrients) moves through the system and within each hydrologic unit under the proposed operation plan along with determination of water levels and swamp flood elevations on a refined scale to be incorporated into the hydrologic modeling. Similar comments have been made by the United States Fish and Wildlife Service (USFWS) in its draft Fish and Wildlife Coordination Act report.

b. Page 4-32 through 4-27: Water Quality Concerns – Tables of water quality information do not provide adequate information to support decisions of environmental consequences i.e., data over ten years old suggests that Blind River has levels of copper where mean value is both acutely and chronically toxic to aquatic life. However, no 303(d) listing noted currently. EPA recommends that analytical data be appropriately annotated as to location of monitoring point, hardness of water at that monitoring point and applicable hardness dependent criteria at that point. Also note if analysis yielded total or dissolved pollutant.

Concur. The majority of the study area is a state owned Wildlife Management Area. Activity on the state lands will be regulated. Activities on the small portion of the study area that is privately owned would also require a permit or other form of consent or authorization from the Louisiana Department of Natural Resources, U.S. Army Corps of Engineers, or the Environmental Protection Agency.

Concur. Coordination and collaboration with the Pontchartrain Levee District was initiated and will continue into the PED phase of the project to ensure project design features will consider the selected levee alignment plan. Both projects will work toward the mutual benefits of each project to avoid opposing features. WSLP is not a currently authorized project and is not part of the future without project condition however coordination with this effort indicates construction of the hurricane and storm risk reduction features would not likely adversely impact the project. As the WLSLP project moves forward the team will coordinate with them to incorporate the LCA Blind River authorized plan into their efforts.

Concur. Additional modeling will be completed during the PED which will better depict water, nutrient, and sediment flow through the system. The additional modeling results will also influence revisions to the feasibility-level monitoring and the adaptive management plan that are in place to better determine habitat impact analysis and accretion rates

Location of the monitoring points for which data is presented is described either in the text and/or in the table headers. The water quality data presented in this section are what was available to date for use in this study and include hardness as a parameter. Limited data sets relevant to the project study area are available.

c. Pages 4-32: Water Quality Concerns - Descriptions of conditions for Lower Mississippi River found on Page 4-32 suggest that volatile organic carbon (VOC) analysis was performed. Data is not presented nor is an explanation of results provided.

It is presumed that since no VOCs were reported in the data set, that no detections were present above the analytical detection limits. While this is an assumption based on the data available, it is highly unlikely that VOCs listed would be present in the Mississippi River unless a spill of some kind had occurred.

d. Page 4-32 : Water Quality Concerns - According to the DSEIS, the LDEQ 2006 Integrated Report both the Primary Contact Recreation (PCR) and Secondary Contact Recreation (SCR) designated uses were fully supported, while Fish and Wildlife Propagation (FWP) and Outstanding Natural Resource (ONR) uses are not supported. The suspected causes of impairment for the FWP designated use were mercury, nitrate/nitrite, non-native aquatic plants, total phosphorus (TP), and turbidity. The suspected sources for mercury were listed as atmospheric deposition and unknown sources. Site clearance (land development or redevelopment) and flow alterations from water diversions were listed as the suspected sources for nitrate/nitrite, dissolved oxygen (DO), and TP. The suspected causes of impairment for the ONR designated use were sedimentation/siltation and turbidity, which are believed to be caused by site clearance.

(1) In light of these impairments, the SEIS should more clearly describe the impacts on the Blind River from diverted Mississippi River water through the swamp and thus to the River. In light of an annual estimate of sediment load to Blind River and Maurepas Swamp of approximately 505,000,000 kg/yr (Page 5-51, Line 2) discuss how sediment loading in return flows (throughput from swamp to River) could affect water quality in the study area. Here again, hydrology is key with respect to such issues. Work on the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Maurepas Diversion project suggests that if the diversion is routed through a swamp receiving area of sufficient size virtually all sediment will be deposited in the swamp.

Modeling of the diversion and delivery system indicated that most of the sediment load in the Mississippi River water would be deposited within the transmission canal before flows reach the swamp interior, only a fraction of the suspended load (very fine particulates) will be transported to the swamp perimeter accounting for very little sediment deposition in the swamp. The primary purpose of this project which incorporates berm gapping and control structures is to reverse the problems caused by the construction of drainage canals which eliminated water passage through the swamp. This project reverses that hydrologic regime and reintroduces local drainage and diversion water to the swamp which in an area of laminar flow will remove sediment, nutrients and other contaminants that will be absorbed into the vegetative mass of the swamp. The project is reversing the environmental issues caused by the construction of the drainage canal system.

(2) Page 3-104, Line 28 and Appendix I: In light of current mercury impairments in the Blind River and mercury levels in diverted Mississippi River water, the SEIS should more clearly describe additional mercury loading and methylation risks to the swamp as well as to the Blind River and Lake Maurepas. Appendix I (Adaptive Management and Monitoring Plan)(Page 10) and DSEIS suggest nutrients are a risk (Page 3-104, Line 28); however, mercury is not mentioned as a risk. EPA recommends periodic monitoring for mercury increases in swamp (sediments, fish tissue) or receiving waters (Blind River/Lake Maurepas; sediments, fish tissue), along with consideration of what/if any impacts to aquatic life, migratory birds and listed species might be associated with such water quality issues. (Battelle. 2007. Limited Phase II Assessment of Ecological Risks of Contaminants from a Proposed Reintroduction of Mississippi River Water into Maurepas Swamp. Report from EPA Region 6. EPA Contract No. 68-C-03-041, Work Assignment No 4-40.)

The concern for mercury is noted. During PED the Adaptive management and monitoring plan will be revised based on the final project designs. At this time the water quality elements will be revisited and revised as necessary in coordination with agencies to ensure that the appropriate level of monitoring and adaptive management actions are in place to identify any water quality issues and remedy them if they should occur.

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(3) Page 3-104, Line 28 and Appendix I: In light of current metals water column levels in the Blind River and metals levels in diverted Mississippi River water, the SEIS should more clearly describe additional metals loading risks to the swamp as well as to the Blind River and Lake Maurepas. Appendix I (Adaptive Management and Monitoring Plan)(Page 10) and draft SEIS suggest nutrients are a risk (Page 3-104, Line 28); however, metals not mentioned as a risk . EPA recommends monitoring for metals increases in swamp (sediments, fish tissue).

The concern for metals is noted. During PED the Adaptive management and monitoring plan will be revised based on the final project designs. At this time the water quality elements will be revisited and revised as necessary in coordination with agencies to ensure that the appropriate level of monitoring and adaptive management actions are in place to identify any water quality issues and remedy them if they should occur.

e. Page 3-102, Line 3-102 and Appendix I: Objectives stated in DEIS on Page 3-102 (beginning at Line 34) and Appendix I (page 10) are not in sync. Ensure that monitoring design supports objective. For example, Objective 1 (EIS) suggests decreases in nitrogen and phosphorus and DO increases but has no monitoring design associated. Objective 1 (Appendix I) does not include water quality at all. Recommend a separate objective for water quality or include as a risk with monitoring design.

Goals and objectives in the Monitoring and Adaptive Management Plan are not significantly different than stated elsewhere in the report (section 2.4). The Adaptive Management Framework Team added more detail to the objectives to better relate them to monitoring components. The Adaptive Management Framework Team believes that each monitoring design does support its objective. Water Quality has been included as a risk with a monitoring design.

f. Page 4-36, Line 10: States **4.2.3.2 Blind River and Maurepas Swamp**. See no information on the swamp.

The section discusses and presents water quality information from LDEQ station 0117 as that data pertains to the project study area of the swamp and also Blind River. (?)

g. Page 3 – 37, Line 17: blind river should be revised to Blind River.

This will be corrected in the final report.

h. Page 3-16, Table 3-1: Comments for TS-3 to TS-6 are wrong. Comments column narrative needs to shift down.

i. Beginning at Page 5-1, **5 Environmental Consequences**: Ensure continuity throughout this section regarding the complimentary projects of Hope Canal and Amite River Canal Diversions. The Hope Canal project is typically discussed in the “no action” alternative. Studies have been performed on the concept of a 1500 cubic feet per second (cfs) diversion impacts to the swamp (as part of the Maurepas Diversion project under the CWPPRA program), the Blind River and Lake Maurepas. Ensure that implications of these studies are applicable to the Convent/Blind Diversion, since this preferred alternative is for a proposed diversion of 3000 cfs.

This will be corrected in the final report.

j. Readability would be enhanced if the document would spell out the meaning of acronyms upon first usage, i.e., ADCIRC, PCR, SCR, and ONR.

The final report will ensure that the Hope Canal and Amite projects are discussed appropriately in the no action section.

**2. Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock DSEIS, May 2010**

WRDA 2007 included authorization for feasibility-level reports of six of the ten near-term elements in the 2004 LCA Report. Two of those six elements were determined to be hydrologically intertwined and the planning efforts were subsequently combined. Consequently, the projects known as Convey Atchafalaya to Northern Terrebonne Marsh and Multipurpose

The final report will spell out acronyms upon first usage. Please note that an acronym list is included in Section 9.0

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Operation of the Houma Navigation Lock were integrated into the Pre-Decisional Draft Integrated Feasibility Study and EIS for the Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock (LCA ARTM/MOHNH Project) and it is the later document, published in May 2010, to which these comments apply.

The objective of the project is to provide additional freshwater, nutrients, and sediments to the wetland communities of northwestern Terrebonne Basin, both north and south of the Gulf Intracoastal Waterway, which have exhibited accelerated wetland loss and ecosystem deterioration due to altered hydrology, reduced sediment and nutrient deposition, saltwater intrusion, tidally forced erosion, and subsidence. Currently, net primary productivity is declining and land loss is increasing, with existing fragmented emergent wetlands converting to shallow open water. According to United States Geological Survey (USGS) analyses, the overall rate of land loss in this area is 2,597 acres/year, or approximately 0.3 percent per year. If current conditions persist, it is predicted that 102,000 acres (18%) of remaining wetlands would decline over the next 50 years. Even more dramatic losses would be expected within several of the study subunits, with the loss of all emergent wetlands within the next 50 years.

As part of the feasibility study, multiple alternatives were developed incorporating a large array of treatment measures to be applied over the 1,100 square mile study area. The resulting Tentatively Selected Plan (TSP) is predicted to reduce the loss of 9,655 acres of marsh habitat (3,220 average annual habitat units (AAHUs)) at a cost of \$311,030,000, including monitoring and adaptive management costs.

Of the alternatives studied, Alternative 2 is identified by the Corps and the interagency team as the TSP and it is also identified as the National Ecosystem Restoration Plan (NER). TSP fits the cost limitations of WRDA 2007 and is the most efficient plan from an incremental cost per average annualized habitat unit (AAHU) perspective. The TSP/NER plan involves construction of 56 structures and other water management features, as well as the opportunistic operation of the Houma Navigation Canal (HNC) Lock Complex, in an effort to address holistically the declining health of the Terrebonne marsh ecosystem, while meeting the planning objectives.

EPA supports the rationale provided for defining the NER plan and EPA further support the selection of Alternative 2 as the TSP. EPA does so in light of the urgency of addressing dramatic wetland habitat loss and degradation in the study area, while recognizing that there are a number of technical and design uncertainties yet to be worked through. The tight schedule under which this DSEIS was prepared resulted in publication of the document before all planning evaluations have been completed. While EPA believes this work should be completed prior to final plan approval, EPA does not believe that these analyses will alter the alternatives ranking. Therefore, EPA recommends that final approval of the TSP/NER plan be conditioned upon

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completion of additional modeling and hydrology work needed prior to final project design and implementation of the plan. See the USFWS's May 2010 Draft Fish and Wildlife Coordination Act Report for details (Vol. III, Appendix B, pages 47-49).

EPA's support for the TSP is also predicated on the potential for adaptively responding to continually refined data, according to the management and monitoring plan (Vol. III, Appendix I). The incorporation of a monitoring plan and the commitment to adaptive management is a vital component for dealing with the uncertainties associated with the ecosystem modeling and for coordinating this project with other planned and future restoration and storm damage risk reduction projects in the area.

While this plan represents a valuable contribution to reducing the ecosystem degradation in the study area, a sustainable and resilient coastal ecosystem will quite likely require additional hydrologic manipulations. It is unlikely that this project alone will result in a sustainable ecosystem. The project features will not actively introduce additional sediment, nutrients, and freshwater from other sources. It will instead redistribute and more efficiently utilize existing freshwater within the system.

With that frame of reference, the project cost of \$311,030,000 deserves careful consideration. Although the benefit area of the project is large and the ecosystem values to the nation are great, the cost is high and the benefits are incremental. These first cost benefits to the nation will only be realized if a future commitment is made to augment this project with additional hydrologic manipulations at a landscape scale.

This point cannot be overemphasized. As noted in the report, "[t]he project area is declining and imperiled. While the project cannot stop the natural processes of sea level rise, subsidence, and storm-caused erosion, the project can greatly slow down the disappearance of these landforms by decreasing the rate of decline of wetland habitat in the coastal system" (Vol. I, page 4-61).

Relative sea level rise (RSLR) evaluation curves were developed for three different sea level rise scenarios. The TSP/NER plan would provide benefits under the low and the intermediate RSLR scenarios. However, at the high RSLR rate, "marsh collapse is predicted to begin in 2017, when RSLR rate reaches 10 mm/yr. This rate represents a threshold believed to initiate rapid marsh collapse." None of the alternatives would prevent marsh collapse at the high RSLR rate. Once again, this is a large investment for benefits which will require additional treatment efforts to insure sustainability beyond the next seven years. This is too large an investment not to be part of a comprehensive plan of attack.

This project holds the promise of reducing additional wetland losses by some 9,655 acres. That is a far different scenario than "resulting in a net gain of 9,655 acres," as cited in various

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sections throughout the reports, in both Volumes I and III. This is a significant correction which should be made in the Final EIS.

The correction should start at the top, with Objective 1: "Prevent, reduce, and/or reverse future wetland loss" and Objective 2: "Achieve and maintain characteristics of sustainable marsh hydrology." These goals are worthy of a more comprehensive approach with a larger scope than this near term project affords. As stated in the reports, the desired outcome seems to stop short of the objectives by establishing a measure of "reducing the rate of land loss compared to the pre-project condition." These outcomes appear to be achievable but they do not line up well with the more aggressive objectives. This is also a significant correction which should be made in the Final EIS.

Perhaps another project objective should be to optimize delta building, or at least to avoid negatively impacting ongoing Atchafalaya Delta building processes. The Atchafalaya River is building the only two actively growing deltas on the Louisiana coast. Although these active deltas are growing, they have not offset the land loss in this basin. However, they represent part of the ecosystem that is functioning in a positive trend and that should be valued and protected.

One of the more notable project uncertainties involves the construction and operation of the HNC lock complex for environmental purposes after the year 2025. The HNC lock complex is a feature of the Morganza to the Gulf project. If the lock complex is not constructed or if it is not operated as envisioned by this project, all benefits attributed to that feature will be unrealized. Accordingly, the Final EIS should provide an analysis of benefits (including the calculation of a benefit/cost ratio) both with and without the implementation of this feature.

The Final SEIS should clarify the implications for this project of the Corps' ongoing study to deepen the HNC channel. Also, the Final should clarify the lock closure conditions which were analyzed. In various sections of Volume III, those conditions are reported to include periods when the sector gates would not be closed, while other references infer that the modeling assumed constant closure. Finally, the Final SEIS should provide a plan for operating the sluice gates and it should explain how that operation would be anticipated to impact basin hydrology and consequent ecosystem health and sustainability.

Another area for further consideration involves statements in both Volumes I and III that the floating marshes in the upper Penchant Basin are currently stable and experiencing conditions where sufficient freshwater, nutrient, and sediment loads are being provided. Without further documentation, this conclusion would seem to overstate the current condition of these marshes. At a minimum, the vulnerability of these fragile marshes should be taken into account in the project planning. Based on a study conducted for EPA (Floating Marshes in the Barataria and Terrebonne Basins, Louisiana, Sept. 1994, Charles E. Sasser et al. (LSU-CEI-94-02)), notable changes to these marshes have occurred over the last several decades.



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Six of the study sites in the Louisiana State University (LSU) project lie within the LCA ARTM/MOHNH Project study area. Based on habitat mapping and the results of other work by the same researchers, some floating marsh habitats have changed over the last several decades from one type of floatant to another type, or to open water. In the northern Terrebonne basin and upper Bayou Penchant basin, large areas of formerly *Panicum hemitomon* thick-mat floatant marsh converted to thin-mat *Eleocharis* floatant marshes or to open water. While much remains unknown as to what processes have operated on these areas to produce such dramatically different results, possible contributors include: altered hydrology due to canal construction and dredging; flux of organic material from the marsh due to hydrologic changes; nutria herbivory; nutrient dynamics due to altered hydrology; burning; and floods/storms.

With regard to compensatory mitigation, the report states that “[t]emporary negative impacts to the marsh associated with excavation of canals and management structures will be compensated for by creation of new marsh of better quality as a result of the reintroduction of freshwater, nutrients, and sediments into the Study Area” (Vol. I, page 4-68 and Vol. III, Section 3, page 49). The more likely case is that marsh degradation will be slowed by these measures. Additional marsh creation should be considered, however, if excess dredged material is available beyond that which is required for canal bank construction. In addition, all actions identified in the Clean Water Act Section 404(b) evaluation to minimize impact should be incorporated into the final plan.

Finally, EPA suggests that, to the degree possible, the final EIS include an updated assessment of the Deepwater Horizon oil spill impacts to the Terrebonne basin ecological resources subject to this project proposal. The baseline conditions should be modified as necessary and a projection of the potential for the TSP/NER plan, or any individual features of other alternatives, for remediating those impacts should be considered. The TSP/NEP plan should be modified if the incorporation of other features could reasonably be expected to provide incremental benefits to protect the marshes from further oil spill damage under non-storm and/or storm conditions.

As a partner with the Corps of Engineers and others in the restoration of coastal Louisiana, EPA offers these comments in an effort to promote the most effective long-term wetlands protection and restoration strategy for the study area. This near term project could provide a platform for a sustainable coastal ecosystem, when viewed in tandem with measures to provide additional inputs of sediments and flows.

### 3. Medium Diversion at White Ditch DSEIS, May 2010

As noted in our cover letter, EPA supports the proposed White Ditch diversion. It is consistent with our long-standing priority of re-establishing Mississippi River inputs to help undo to some extent the major disruption of deltaic processes that underlies the ongoing loss of

coastal wetlands in Louisiana. EPA recognizes such river diversions have the potential to alter existing fisheries in the receiving areas due to changes in salinities, nutrients, sedimentation, and other factors. However, without efforts to restore deltaic processes by reintroducing riverine inputs, the productivity of such fisheries and coastal wetlands remains gravely threatened. The cost of inaction is continued rapid decline of wetlands and the related aquatic resources in deltaic Louisiana.

Nevertheless, EPA is sensitive to the potential effects of diversions on fisheries and the livelihoods built upon them. EPA recognizes the value of minimizing impacts where practicable and consistent with the pressing and long-term need to restore some semblance of sustainability to coastal Louisiana. There appear to be restoration approaches which could mimic natural deltaic processes and possibly minimize such impacts to existing fisheries. Specifically, EPA is referring to the concept of diversion "pulsing" which is intended to mimic seasonal riverine inputs historically associated high water events on the Mississippi. Such a "pulsing" operation is proposed for the White Ditch diversion, and entails high volumes of riverine input for months when stages and sediment concentrations are relatively high, followed by relatively limited "maintenance" inputs during the remaining months. This operation scheme has the promise of increasing sediment inputs, while reducing potential disruption of fisheries.

As noted in the cover letter, the capacity to precisely predict the effects of this and other coastal restoration projects is limited by uncertainty over major variables, particularly the future rate of relative sea level rise. This puts a premium on monitoring and adaptive management. At the programmatic level, the information gained through implementation of the White Ditch diversion would help test the diversion "pulsing" concept, thereby potentially assisting the larger-scale planning necessary to address coastal land loss in Louisiana. Thus, we believe the White Ditch project has the potential to both help restore coastal wetlands in the relative near term and support comprehensive coastal restoration in the future.

EPA appreciated the Corps' efforts to consider how different relative sea level rise (RSLR) scenarios could affect projected project benefits. Certainly, the central focus of this project (increasing sediment input into coastal marsh) is of primary importance for offsetting or slowing wetland loss due to RSLR. EPA agrees that diversion alternatives that provide greater sediment inputs could provide greater wetland benefits in that regard. However, the DSEIS might overstate the ability of the tentatively selected plan to counter more extreme rates of RSLR. Specifically, the DSEIS states that the tentatively selected plan could be used to "overcome high sea level rise". Such a statement should be tempered by the recognition that such high-end RSLR estimates would represent unprecedented environmental conditions and, therefore, our ability to accurately predict marsh response to such is limited. We would also note that the aforementioned quote appears inconsistent with the statement made on page ES-11: "...no evaluated alternative is able to offset the high rate of sea-level rise."

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More information and analysis should be provided on potential inputs of nutrients and agrochemicals as a result of the proposed diversion. For example, data is available on the fluctuating levels of atrazine concentrations in the Mississippi River. This information could be combined with the proposed diversion operational scheme and alternatives to estimate potential atrazine inputs into the estuary. Similar analysis should be done for nutrient loading. EPA suggests the Final SEIS include a graph showing atrazine concentrations in the Mississippi River over the period of a year. Such a graph should also include a line showing proposed diversion discharge rates over the same period of time. This would highlight the relationship between diversion discharge rates and atrazine concentrations in the river. On the subject of atrazine, EPA asks the Corps to correct the apparent wording error on page 5-24: "The long-term effects of prolonged, low-level, exposure to atrazine on both plants and animals, especially amphibians, *would be currently being investigated.*" (Emphasis added.) If such long-term effects are indeed currently being studied, EPA asks whether the Corps plans to review the findings of such investigation and if necessary incorporate that information into the operational scheme for this proposed diversion.

With respect to nutrients, dissolved oxygen, and other water quality issues, EPA recommends the Corps consider adding water quality parameters to the monitoring plan and adaptive management scheme. The goal would be to have the ability to detect and respond to any unforeseen adverse water quality impacts that could result from operation of the proposed diversion. This would include measurements of dissolved oxygen levels in open water areas, as well as monitoring for atrazine, metals, and any other pollutants of concern.

The DSEIS should provide additional information on potential salinity and associated habitat changes expected to occur due to the proposed diversion and alternatives. The final SEIS should include maps showing existing marsh types and anticipated changes in marsh types associated with the proposed project and alternatives. It would also be informative to include maps showing existing base-case isohaline lines and the anticipated changes in such over time (i.e., during the high-flow period, the middle of any "rebound" period, and low flow months).

Finally, as noted in our cover letter, EPA supports recommendations made by the National Marine Fisheries Service with respect to any additional analysis (including modeling) needed to adequately assess and disclose potential effects on fisheries.

#### **4. Amite River Diversion Canal Modification DSEIS, May 2010**

Both the TSP and the NER plan appear to be good projects from a cost-benefit perspective. EPA supports either alternative TSP or NER plan.

There is likely continued interest on the part of some landowners to log cypress in the Maurepas Swamp. Given the degraded state of the swamp throughout much of this area, there is

11

a high risk that any such logging would be unsustainable. Such logging could conflict with or undermine this and other proposed restoration efforts for the Maurepas Swamp. Accordingly, this project should include as a non-structural measure a commitment to full and effective enforcement of Clean Water Act Section 404 and/or Section 10 of the Rivers and Harbors Act as such laws pertain to logging.

The Fish and Wildlife Coordination Act report dated April 2010 and attached at Appendix B is not discussed in the DEIS. Additionally, pages appear to be missing from the report at Attachment B, namely, the USFWS recommendations.

Finally, the cumulative impacts do not include the additive impacts that would be expected from construction of this project in conjunction with the other two Maurepas Swamp diversion projects – Hope Canal and Convent/Blind River.

→ Bryan Haase



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
646 Cajundome Blvd.  
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Lafayette, Louisiana 70506  
January 21, 2010



Colonel Alvin B. Lee  
District Engineer  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

RECEIVED  
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FISH AND WILDLIFE SERVICE

Dear Colonel Lee

The U.S. Fish and Wildlife Service (Service) is collaborating with the U.S. Army Corps of Engineers (Corps) and the State of Louisiana's Office of Coastal Protection and Restoration (LOCPR) on the formulation and evaluation of six Louisiana Coastal Area (LCA) projects. LCA is a coastal ecosystem restoration authority that was authorized by the Water Resources Development Act of 2007 and includes both specific projects and general authorizations to aid in the restoration of Louisiana's coastal wetlands. Those wetlands, which support nationally important fish and wildlife resources, are being lost at an average rate of approximately 24 square miles per year due to a variety of causes. The purpose of this Planning-aid Report is to provide the Service's plan formulation-related comments and recommendations regarding four of the restoration projects and identify planning constraints that may influence the selection of project features and the ability of the Service to fulfill our reporting responsibilities under Section 2(b) of the Fish and Wildlife Coordination Act (FWCA, 48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). The 4 projects that are being addressed in this report are:

- Multi-purpose Operation of Houma Navigation Lock
- Convey Atchafalaya River Water to Northern Terrebonne Marshes
- Terrebonne Basin Barrier Shoreline Restoration
- Small Diversion at Convent/Blind River

The Service will be providing project specific reports for the other 2 LCA projects in the planning phase. This Planning-Aid Report was prepared under the authority the FWCA; however it does not constitute the final report of the Secretary of the Interior as required by Section 2(b) of that Act. The Service has provided copies of this report to the National Marine Fisheries Service and the Louisiana Department of Wildlife and Fisheries (LDWF); if any comments are received on this report they will be forwarded under a separate cover. Comments in this report are also provided under the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.) as a cooperating agency for the Small Diversion at Convent/Blind River study.



The Service previously submitted draft FWCA Reports (i.e., September 26, 2003 [comprehensive plan], May 28, 2004 [draft near-term plan], and October 6, 2004 [final near term plan] during the development of the LCA near-term plan. Habitat values and fish and wildlife resources (but not habitat acreage) described in those previous reports remain relatively unchanged and are therefore incorporated herein by reference.

We recognize that the legislatively mandated study schedule (i.e., study completion within three years from authorization) was developed to respond to the significant and ongoing rapid loss of coastal wetlands. Considering the scope and complexity of the some of these LCA projects, that schedule, because of a one year delay in getting cost-sharing documents signed, should be acknowledged as a key planning constraint, and risks and uncertainties associated with meeting such an abbreviated study schedule (i.e., reduced to two years) should also be thoroughly considered in any planning and NEPA documents. We also recognize that relatively new policies requirements (i.e., model certification and analysis of sea-level rise) implemented by the Corps have also contributed to some delays in essential data analysis. Additionally, the Service recognizes that some of our comments provided below regarding the analyses and findings of the LCA projects may be of an interim nature as planning efforts proceed. General comments that apply to the overall-planning process are presented below and are followed by general project-type comments and then by project specific comments, recommendations, and data needs.

The expedited schedule of the impact (i.e., benefit) analyses has curtailed time available for hydrological modeling work, precluding the correction of known model limitations and errors and also required utilizing assumptions and data interpolations in the impacts analysis that would have normally been more refined. Currently, coastal fisheries impact assessments may be conducted without the use of models that would have otherwise provided an overall indication of the cumulative effect of multiple restoration (planned and operating) and flood protection projects on fishery resources within a coastal basin. The Corps has verbally indicated that use of those type models will be incorporated in future planning efforts. Future Service comments regarding cumulative impacts (that should be thoroughly examined in NEPA documents) may be contingent upon completion of such modeling efforts. During a more typical project planning study, when sufficient time to conduct detailed impact analyses is available, the Service would usually rely upon more robust data and assumptions than is currently available.

The shortened time frame of the planning process has also reduced the amount of time used to fully develop and refine alternatives and alternative features. While many good alternatives for each LCA project were developed, the reiterative process of alternative refinement and selection was reduced which could preclude the development of alternatives or alternative features which could increase restoration benefits. Therefore, while selection of a Tentatively Selected Plan (TSP) has occurred or is scheduled to soon occur, changes to the TSP may be warranted based on further planning efforts and review of existing assumptions and modeling (i.e., quality control).

All diversion projects should include monitoring that would not only measure the success of the project but, also facilitate the recognition of existing and future maintenance needs as sedimentation occurs within the project area. Failure to include such monitoring may result in decreased benefits as areas experience sedimentation, vegetative response, and debris collection

which could isolate areas from the influence of the diversion. Implementation of an adaptive management/maintenance program throughout the project area and over the life of the project would also ensure such conditions would not prevail over the project life, significantly impacting the diversion's success. Varying the discharge of diversions during Mississippi River high water periods could increase their land building capabilities; however, the shortened study schedule has limited the examination of such adaptive management operations. The Service should be included in the development and implementation of both the monitoring and adaptive management/maintenance programs.

Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multi-purpose Operation of Houma Navigation Lock

Both of the subject LCA projects involve water management within a very large and hydrologically complex area and because these projects have substantial interaction they have been combined into one project. Given those factors, intensive hydrologic modeling is needed to evaluate the effects of the combined projects. Time needed to obtain adequate computer capabilities delayed the initiation of necessary hydrologic modeling. Therefore, to meet the project schedule, the array of project alternatives will be limited such that additional model runs to optimize channel sizes will not be done. If initial modeling suggests that there are other potentially viable project alternatives, there will not be sufficient time to assess those. More detailed comments regarding these studies are presented below:

1. Because of the shortened planning period and reduced amount of time allowed for hydrologic modeling runs, there was no time to consider the many Grand Bayou channel size and configuration alternatives. The LCA study intended to select the channel alternative selected under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Central and East Terrebonne Freshwater Delivery Project, which examined a number of channel size and configuration alternatives. In that CWPPRA effort, a 7,500 square foot (sq ft) east branch channel alternative (i.e., single channel) was selected as the preferred alternative. However, because the hydrologic model used in the CWPPRA effort failed to adequately simulate flows in the Cutoff Canal, those model results are flawed and inadequate to support a decision on a preferred alternative. Although intending to use that CWPPRA preferred alternative, the model mesh was set up for the 7,500 sq ft branched channel alternative (i.e., bifurcated channel).
2. The following structures were not included in the computer models, thus efforts to assess their impacts (especially when effects of the proposed Houma Navigation Channel Lock are considered) may be flawed.

The 2 structures through the Morganza to the Gulf levee through the southbank of Falgout Canal.

The Penchant Plan's Superior Canal water control structure is not in the future without project (FWOP) model projections.

3. The WD2 channel flows in Alternative 2 are predicted to exceed that of the predicted upstream source channel. The WD2 channel is also assumed to be functioning under FWOP conditions.
4. Time did not allow for the assessment of benefits for individual measures or groups of measures to improve the efficiency of measure combinations and the resulting alternatives. For example, in the Grand Bayou area, the proposed St. Louis Canal enlargement provides little additional freshwater input when combined with the proposed Grand Bayou enlargements. However, both features are combined in several alternatives, resulting in more costly alternatives.
5. Insufficient opportunity was provided to evaluate the effectiveness and benefits/value provided by individual outfall management features.
6. Because the diversion model allows only three loss rate changes, it is a less robust means of predicting future acreage trends than use of standard spreadsheet methods which can incorporate numerous loss rate changes over time. Because there was not sufficient time to upgrade this modeling tool, the more robust spreadsheet-predicted FWOP acreages are compared with the diversion model generated future with project (FWP) acreage. This may result in up to a 200-acre error by target year (TY) 100.
7. Because of the schedule, salinity outputs were not available to determine project and/or diversion influence areas from those model outputs. Instead, best professional judgment was used to determine the influence areas.
8. In some cases, salinity prediction models may not have been run long enough to fully illustrate project effects.
9. Polygons from which wetland loss rates were determined included fastlands.
10. Measured impacts did not remove spoil bank acreage – thus marsh impacts are overestimated.
14. Due to time constraints, diversion influence areas were assessed in the Wetland Value Assessments (WVA) as a single habitat type; separate WVAs on each habitat type are therefore needed.
15. To model project benefits, many assumptions have been made regarding the size and location of Morganza to the Gulf Project features. Those assumptions could later be found to be incorrect as that feasibility study work progresses.

Terrebonne Basin Barrier Shoreline Restoration

Project area acreages - Barrier island project boundaries encompass all emergent and subtidal habitat (i.e., 0.0 to -1.5 NAVD88) associated with the island, while deep ocean water habitat



around the island is omitted. Subtidal habitat extends bayward to the -1.5 ft NAVD88 contour or a maximum distance of 1,000 feet from the island. In many instances, a barrier island project area changes throughout the evaluation period (i.e., 50 years) as the island erodes, migrates, and/or shrinks in size. As the island erodes, areas converting to deep ocean water (>-1.5 NAVD88) are removed from the project area and the boundary shrinks as the island shrinks. This information needs to be determined for all alternatives.

Barrier Island Wetland Value Assessment V1, V2, and V3 values - Recent changes to the Final Array of Alternatives resulted in the deletion of some and the addition of new alternatives to that array. The acreage of each of the habitat components (i.e., dune supratidal, and intertidal) should be provided as soon as possible for all new alternatives added to the revised Final Array (distributed to the Project Delivery Team on January 11, 2010).

Impacts to the threatened piping plover (*Charadrius melodus*) and/or its critical habitat via dredged material placement on the islands should be addressed in planning studies. Should the proposed project directly or indirectly affect the plover or its critical habitat, further consultation with this office will be necessary. If the effect would adversely affect piping plovers or would affect its critical habitat, formal consultation with the Service would be necessary. Formal consultation has specific timelines that the Service must adhere to and must be completed prior to completion of any NEPA document.

Small Diversion at Convent/Blind River

The TSP for Convent/Blind River Freshwater Diversion includes constructing a gated culvert system and transfer canal along the Romeville alignment to divert as much as 3,000 cubic feet per second of freshwater from the Mississippi River into the Maurepas swamps. In-swamp management measures (e.g. gapping spoil banks, installing additional culverts under U.S. Highway 61 and installing water control structures in existing canals) are proposed to facilitate and maximize freshwater throughput within the swamp. The LCPR has requested that a new alternative be formulated and evaluated in the final array of alternatives. That alternative would include all of the features of the TSP with the exception of water control structures within existing canals due to concern that water control structures will be difficult to operate and maintain.

To fully evaluate the benefits of the Convent/Blind River Freshwater Diversion TSP and compare alternatives, the following additional information and actions will be required:

1. Additional results of hydrologic modeling efforts that identify/quantify influence areas at a more detailed level indicating how water, sediment, and nutrients move through the system and within each hydrologic unit.
2. Water levels and swamp floor elevations need to be determined on a refined scale and incorporated into the hydrologic modeling.

Concur. Additional modeling will be completed during -PED which will better depict water, nutrient, and sediment flow through the system. The additional modeling results will also influence revisions to the feasibility-level monitoring and the adaptive management plan that are in place to refine habitat impact analysis and accretion rates.

Concur. Additional modeling will be done as part of PED to refine the water surface elevations along with limited swamp floor elevations in areas proximal to berm cuts and design features. During PED hydraulic analysis of the entire system will be performed.

- 3. Salinity predictions need to be re-evaluated and changes in future-with and future-without assumptions, if necessary, be undertaken.
- 4. Diversion operations need to be developed for each alternative and incorporated into the hydrologic modeling.
- 5. Accretion rates need to be determined and incorporated into the hydrologic modeling (e.g., flood durations and depths should decrease).

Furthermore, in conjunction with the development of an operational plan, plan formulation should also include the development of a long-term monitoring plan. That monitoring plan should include measures to monitor project success, facilitate adaptive management, and support operation and maintenance of project features to ensure that the project is fully successful and capitalize on the availability of freshwater.

Impacts to the endangered pallid sturgeon (*Scaphirhynchus albus*) via entrainment through the diversion structure should be addressed in planning studies. Should the proposed project directly or indirectly affect the pallid sturgeon or its habitat, further consultation with this office would be necessary. If the project would adversely affect (i.e., take) the pallid sturgeon, formal consultation with the Service would be necessary. Formal consultation has specific timelines that the Service must adhere to and must be completed prior to completion of any NEPA document.

For all the above projects, much of the recommendations, information and data needs identified above will be needed to complete our evaluation of alternatives and of the individual TSP effects on fish and wildlife resources, so that we can fulfill our reporting responsibilities under Section 2(b) of the FWCA. Therefore, extensive additional Service involvement during ongoing detailed planning, engineering, and design of specific project measures and associated maintenance, along with more-definitive project information that will be available during those planning phases, will be required so that we can fulfill our responsibilities under that Act.

The Service has actively participated throughout plan formulation and evaluation of the LCA projects. Each of those LCA projects would, to varying degrees, reduce coastal wetland loss. Hence, implementing any of the proposed projects would be preferable to the continued loss and degradation of coastal wetlands and Louisiana's nationally significant fish and wildlife resources. We remain committed to working closely with all agencies involved in LCA planning effort to further explore alternatives and alternative features and refine models and model assumptions in order to reduce the current degree of risk and uncertainty associated with their outputs and to ensure optimum fish and wildlife resource benefits are achieved. The Service recognizes the formidable challenge that the Corps has been tasked with (i.e., balancing sufficient planning with meeting abbreviated Congressionally mandated deadlines) and we look

There have been several papers written on salinity changes in Lake Pontchartrain due to the diversions planned for Blind River and Hope Canal. (1. Georgiou, I.Y., McCorquodale, J. A., Schindler, J., Retana A.G., Fitzgerald, D.M., Hughes, Z., Howes, N., 2009, Impact of Multiple Freshwater Diversions on the Salinity Distribution in the Pontchartrain Estuary under Tidal Forcing. 2. Georgiou, I.Y., 2010, High Frequency Response and Transport in the Pontchartrain Basin due to wind stress) What is important to learn from these studies is that the salinity levels in Lake Maurepas under normal conditions (i.e. no tropical events) are in the range considered a fresh water lake (less than 1.5 parts per thousand). Within Lake Pontchartrain, the salinity levels are referred to as oligohaline (0.5-5.0 ppt). For the project area the salinity levels are not an issue at any times except tropical events and long term drought periods. The conditions of tropical events are so different that any modeling of salinity levels has no bearing on the project objectives. The key feature of the project is to be able to flush the salinity from the area, which based on the hydraulic detention times modeled in the report, can occur in less than 7 days which is sufficient to avoid salinity intrusion into the tree root zones thus causing some levels of mortality. A long drought period in 1999 caused the salinity levels of Lake Maurepas to approach 4 parts per thousand. This was for a short period and is at the threshold of survival for the bald cypress forest.

Based on the fact that the current system is a fresh water system the need for any salinity modeling within the project area is not warranted. It may be necessary to review the previous salinity models for Lake Pontchartrain and determine the effect of the diversion on that system. The modeling of the larger system with multiple freshwater inputs is beyond the scope and outside the area of the current project.

Diversion operations, specifically flow rates, were considered in the hydrologic modeling for each alternative

Agreed. Additional modeling will be completed during -PED which will better depict water, nutrient, and sediment flow through the system. The additional modeling results will also influence revisions to the feasibility-level monitoring and the adaptive management plan that are in place to refine habitat impact analysis and accretion rates

forward to continuing the ongoing LCA planning efforts to restore Louisiana's nationally significant coastal wetlands and resources.

Sincerely,



James F. Boggs  
Supervisor  
Louisiana Field Office

cc: EPA, Dallas, TX  
CEMVN-PM-R  
National Marine Fisheries Service, Baton Rouge, LA  
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA  
LA Dept. of Natural Resources (CMD), Baton Rouge, LA  
LOCPR, Baton Rouge, LA  
Natural Resource Conservation Service, Alexandria, LA



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
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April 30, 2010

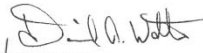
Colonel Alvin B. Lee  
District Engineer  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

The Louisiana Coastal Area – Small Diversion at Convent/Blind River Integrated Feasibility Report and Environmental Impact Statement (EIS) is being prepared by the U.S. Army Corps of Engineers (Corps), New Orleans District, in partnership with the Louisiana Office of Coastal Protection and Restoration, under the authority of Title VII of the Water Resources Development Act (WRDA) (Public Law 110-114, 121 STAT. 1270) of 2007. Enclosed is our Draft Fish and Wildlife Coordination Act Report for the LCA - Small Diversion at Convent/Blind River project. This report does not constitute the 2(b) report of the Fish and Wildlife Service (Service). This draft report has not been reviewed by the Louisiana Department of Wildlife and Fisheries (LDWF) or the National Marine Fisheries Service (NMFS); however, their comments will be incorporated into the final report.

Should your staff have any questions regarding the enclosed draft report, please have them contact Angela Trahan of this office at 337/291-3137.

Sincerely,

  
James F. Boggs  
Supervisor  
Louisiana Field Office

Enclosures



the LCA - Small Diversion at Convent/ Blind River project were developed, the reiterative process of alternative refinement and selection was reduced which could preclude the development of alternatives or alternative features which could increase restoration benefits. Therefore, while selection of a TSP has occurred changes to the TSP and/or the TSP features may be warranted based on further planning efforts and review of existing assumptions and modeling (i.e., quality control).

The intent of the habitat assessment is to provide a comparison of alternative benefit areas and potential direct impacts associated with project construction to support the selection of a TSP. To fully evaluate the benefits of the TSP the following additional information and actions will be required:

- Additional results of hydrologic modeling efforts that better identify/quantify influence areas and how water (sediment and nutrients) moves through the system and within each hydrologic unit under the operational plan identified.
- Water levels and swamp floor elevations need to be determined on a refined scale and incorporated into the hydrologic modeling.
- Salinity predictions need to be re-evaluated and changes, if necessary, be undertaken.
- Accretion rates need to be determined and incorporated into the hydrologic modeling (e.g., flood durations and depths should decrease). Benefits cannot be fully addressed without including this in the analysis.
- Due to time constraints, impacts associated with the transmission canal were assessed in the habitat assessment as a single habitat type; separate WVAs on each habitat type are therefore needed.

**SERVICE POSITION AND RECOMMENDATIONS**

The TSP will benefit the fish and wildlife resources that depend on the Maurepas Swamp by providing freshwater, nutrients, and sediments to the study area thus facilitating sediment deposition, increase organic production, increase biological productivity, and reduce conversion of swamp habitat to open water. Approximately 21,369 acres would benefit from the proposed project resulting in 6,421 AAHUs of swamp habitat at the end of the project life. The Service supports implementation of Alternative 2, a 3,000 cfs diversion at Romeville, provided the following fish and wildlife recommendations are implemented concurrently with project implementation:

1. Because of the expedited schedule, we recommend that the Corps continue to coordinate with the agencies during the remaining Feasibility phase and the Preconstruction, Engineering, and Design (PED) phase to ensure any new project features, development of the operational plan, and/or changes in the design fully incorporate adequate fish and wildlife conservation measures and that those features can be adequately evaluated with regards to impacts to fish and wildlife resources.
2. We recommend that hydrologic modeling efforts better identify/quantify influence areas and how water (sediment and nutrients) moves through the system and within

Acknowledged. It is the intent of the USACE and OCPR to continue coordination with the agencies to complete the feasibility phase and on into the PED phase to fully and adequately address impacts to fish and wildlife.

Concur. Additional modeling will be completed during – PED which will better depict water, nutrient, and sediment flow through the system. The additional modeling results will also influence revisions to the feasibility level monitoring and the adaptive management plan that are in place to refine the habitat impact analysis and accretion rates.

- each hydrologic unit under the proposed operational plan. Those hydrologic modeling results should be provided to the habitat evaluation team with adequate time to evaluate the results and conduct detailed impacts analysis. Accretion rates need to be determined and incorporated into the hydrologic modeling (e.g., flood durations and depths should decrease). Benefits cannot be fully addressed without including this in the analysis.
3. To accommodate changing goals and restoration needs for the region, we recommend that the diversion structure, as well as the outfall management system, be designed to incorporate operational flexibility to address changing environmental conditions through an adaptive management program.
  4. We recommend that water levels and swamp floor elevations be determined on a refined scale and incorporated into the hydrologic modeling.
  5. Salinity predictions should be included in the hydrologic modeling efforts and re-evaluated, and, if necessary, changes be undertaken.
  6. Due to time constraints, impacts associated with the transmission canal were assessed in the habitat assessment as a single habitat type; separate WVAs on each habitat type are recommended.
  7. If a proposed project feature is changed significantly or is not implemented within one year of the Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with our office to ensure that the proposed project would not adversely affect any Federally listed threatened or endangered species or their critical habitat.
  8. Avoid adverse impacts to bald eagle nesting locations and wading bird colonies through careful design of project features and timing of construction. A qualified biologist should inspect the proposed work site for the presence of undocumented wading bird nesting colonies and bald eagles during the nesting season (i.e., February 16 through October 31 for wading bird nesting colonies, and October through mid-May for bald eagles).
  9. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present). In addition, we recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season.
  10. Because bald eagles are known to nest within the proposed study area, we recommend that an evaluation be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at:

Concur. The feasibility level monitoring and adaptive management plan includes both pre- and post-diversion monitoring of sediment accretion, elevation, forest composition, and forest productivity. As more specific design information becomes available in the PED phase, this monitoring and adaptive management plan will be revised to address changing environmental conditions and the Project delivery Team will propose more concrete and formalized communication mechanisms for the exchange of information to inform operational decisions related to the diversion structure and outfall management system.

Concur. Additional modeling will be done as part of PED to refine the water surface elevations along with limited swamp floor elevations in areas proximal to berm cuts and design features. During PED hydraulic analysis of the entire system will be performed.

There have been several papers written on salinity changes in Lake Pontchartrain due to the diversions planned for Blind River and Hope Canal. (1. Georgiou, I.Y., McCorquodale, J. A., Schindler, J., Retana A.G., FitzGerald, D.M., Hughes, Z., Howes, N., 2009, Impact of Multiple Freshwater Diversions on the Salinity Distribution in the Pontchartrain Estuary under Tidal Forcing. 2. Georgiou, I.Y., 2010, High Frequency Response and Transport in the Pontchartrain Basin due to wind stress) What is important to learn from these studies is that the salinity levels in Lake Maurepas under normal conditions (i.e. no tropical events) are in the range considered a fresh water lake (less than 1.5 parts per thousand). Within Lake Pontchartrain, the salinity levels are referred to as oligohaline (0.5-5.0 ppt). For the project area the salinity levels are not an issue at any times except tropical events and long term drought periods. The conditions of tropical events are so different that any modeling of salinity levels has no bearing on the project objectives. The key feature of the project is to be able to flush the salinity from the area, which based on the hydraulic detention times modeled in the report, can occur in less than 7 days which is sufficient to avoid salinity intrusion into the tree root zones thus causing some levels of mortality. A long drought period in 1999 caused the salinity levels of Lake Maurepas to approach 4 parts per thousand. This was for a short period and is at the threshold of survival for the bald cypress forest.

Based on the fact that the current system is a fresh water system the need for any salinity modeling within the project area is not warranted. It may be necessary to review the previous salinity models for Lake Pontchartrain and determine the effect of the diversion on that system. The modeling of the larger system with multiple freshwater inputs is beyond the scope and outside the area of the current project.

Discussion. The alignment for the transmission canal is located almost wholly within agriculturally active lands and thus was treated as a single habitat type. The WVA was conducted in a manner consistent with the habitat type within the project study area the majority of which is cypress-tupelo. A sensitivity analysis will be performed to the extent possible for the WVA to demonstrate which variables are most sensitive, and therefore, crucial to the success of the project, to address the fact that the benefits presented depend on a number of highly uncertain factors, and to demonstrate whether the range of benefits estimated in the WVA will still be realized.

Concur. USACE will re-initiate coordination with USFWS if any delay greater than one year is realized or if any of the project features changes significantly; this will be done to ensure no adverse affects to any Federally listed threatened or endangered species or their critical habitats.

each hydrologic unit under the proposed operational plan. Those hydrologic modeling results should be provided to the habitat evaluation team with adequate time to evaluate the results and conduct detailed impacts analysis. Accretion rates need to be determined and incorporated into the hydrologic modeling (e.g., flood durations and depths should decrease). Benefits cannot be fully addressed without including this in the analysis.

3. To accommodate changing goals and restoration needs for the region, we recommend that the diversion structure, as well as the outfall management system, be designed to incorporate operational flexibility to address changing environmental conditions through an adaptive management program.
4. We recommend that water levels and swamp floor elevations be determined on a refined scale and incorporated into the hydrologic modeling.
5. Salinity predictions should be included in the hydrologic modeling efforts and re-evaluated, and, if necessary, changes be undertaken.
6. Due to time constraints, impacts associated with the transmission canal were assessed in the habitat assessment as a single habitat type; separate WVAs on each habitat type are recommended.
7. If a proposed project feature is changed significantly or is not implemented within one year of the Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with our office to ensure that the proposed project would not adversely affect any Federally listed threatened or endangered species or their critical habitat.
8. Avoid adverse impacts to bald eagle nesting locations and wading bird colonies through careful design of project features and timing of construction. A qualified biologist should inspect the proposed work site for the presence of undocumented wading bird nesting colonies and bald eagles during the nesting season (i.e., February 16 through October 31 for wading bird nesting colonies, and October through mid-May for bald eagles).
9. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present). In addition, we recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season.
10. Because bald eagles are known to nest within the proposed study area, we recommend that an evaluation be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at:

← Agreed. USACE will re-initiate coordination with USFWS if any delay greater than one year is realized or if any of the project features changes significantly; this will be done to ensure no adverse affects to any Federally listed threatened or endangered species or their critical habitats.

← Acknowledged

← Acknowledged

← Acknowledged

- <http://www.fws.gov/southeast/es/haldeagle>. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary and those results should be forwarded to this office.
- 11. Please coordinate with the LDWF, Region 7 Office (225/765-2360), for further information regarding any additional permits that may be required to perform work on the Maurepas Swamp Wildlife Management Area (WMA).
 

← Acknowledged. Activities within the project study area will require a Special Use Permit from the WMA manager at LDWF. Coordination also is required with the Scenic Rivers Coordinator.
  - 12. Please contact the LDWF, Scenic Rivers Program (318/343-4045) for further information regarding any additional permits that may be required to perform work on the above referenced river.
 

← Acknowledged.
  - 13. Land clearing associated with project features should be conducted during the fall or winter to minimize impacts to nesting migratory birds, when practicable.
 

← Acknowledged. To the extent practicable, land clearing activities will be conducted during the fall or winter to minimize impacts to nesting migratory birds; these activities also will be mindful of hunting seasons in the WMA.
  - 14. Further detailed planning of project features (e.g., Design Documentation Report, Engineering Documentation Report, Plans and Specifications, or other similar documents) and any adaptive management and monitoring plans should be coordinated with the Service and other State and Federal natural resource agencies, and shall be provided an opportunity to review and submit recommendations on the all work addressed in those reports.
 

← Acknowledged. This has been done and responses to comments received from USFWS, NRCS, NOAA, EPA, LDWF, LDEQ, and DNR will be included in the final report, Appendix G.
  - 15. A report documenting the status of implementation, maintenance and adaptive management measures should be prepared every three years by the managing agency and provided to the Corps, the Service, National Marine Fisheries Service, U.S. Environmental Protection Agency, Louisiana Department of Natural Resources, Office of Coastal Protection and Restoration, and the Louisiana Department of Wildlife and Fisheries. That report should also describe future management activities, and identify any proposed changes to the existing management plan.
 

← Acknowledged.





United States Department of the Interior

FISH AND WILDLIFE SERVICE  
646 Cajundome Blvd.  
Suite 400  
Lafayette, Louisiana 70506



April 7, 2010

Colonel Alvin B. Lee  
District Engineer  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

The U.S. Fish and Wildlife Service (Service) has reviewed the March 8, 2010, draft Louisiana Coastal Area (LCA) Program: LCA Small Diversion at Convent/Blind River Monitoring and Adaptive Management Plan developed by the LCA Adaptive Management Planning Team in collaboration with the U.S. Army Corps of Engineers (Corps), the Louisiana Office of Coastal Protection and Restoration (LOCPR), and the LCA Science and Technology Program. That feasibility level monitoring and adaptive management plan was developed in accordance with Section 2039 of the Water Resources Development Act of 2007 (WRDA 2007) and implementation guidance for Section 2039 of WRDA 2007 provided by the Corps Headquarters Civil Works Policy and Planning, and Programs Divisions (CECW-PB) Memo dated August 21, 2009. The Service submits the following comments in accordance with the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). The Service has coordinated with NOAA's National Marine Fisheries Service and the Louisiana Department of Wildlife and Fisheries (LDWF), and their comments have been incorporated.

**General**

The Service recognizes that the monitoring and adaptive management plan has been developed to reflect a level of detail consistent with the project feasibility study, and that a detailed monitoring and adaptive management plan will be drafted as a component of the design document during planning, engineering and design phase. Project delivery team and natural resource agency involvement should continue throughout this iterative plan development process.

It is the intent of the Adaptive Management Planning Team to continue coordination with the Project Delivery Team and their natural resource agency team members.

**Specific**

4.2. Monitoring Plan ... Convent/Blind River Project, Objective 1, Monitoring Design, page 9 -

We do not see the referenced quotation in that section. However, the term "ecological success" comes directly from USACE guidance on implementation of monitoring and adaptive management plans dated August 2009. Therefore, this term must be utilized.



The term "ecological success" appears to be a misnomer in the cited quotation. It is recommended that this term be replaced in the subsequent sections with "project objectives" or "environmental restoration."

Your concern is noted. We may revisit the organizational structure and format during plan revision during PED.

4.2. Monitoring Plan ... Convent/Blind River Project, Objectives, pages 9-11 - The organization of the monitoring plan is difficult to follow. We recommend for each objective that the "Desired Outcomes" be bulleted and followed by "Performance Measures", "Supporting Information Needs" and "Monitoring Design." It would also be beneficial to see the adaptive management measures outlined in this section once those measures have been more fully developed.

We concur. The multi-parameter instrument used in the synoptic survey can include your recommended parameters.

4.2. Monitoring Plan ... Convent/Blind River Project, Objective 1, Monitoring Design, page 9 - To measure freshwater distribution during operational events, we recommend also including conductivity, turbidity, and pH parameters as tracers.

We agree that five years is somewhat arbitrary for determining successful sediment accretion rates; however a time frame had to be established. We are open to a better suggestion. We agree that it is uncertain how long the project area may take to begin functioning as a healthy and sustainable swamp. We agree that during the more detailed development of the Monitoring and Adaptive Management plan in PED, more defined adaptive management measures and expanded monitoring target years may be included should desired outcomes not be achieved.

4.2. Monitoring Plan ... Convent/Blind River Project, Objective 2, Desired Outcome, page 9 - Five years seems arbitrary for determining successful sediment accretion rates. An explanation of the target year for the desired outcome would be beneficial to the reader and future decision makers. Further, it is uncertain how long the project area may take to begin functioning as a healthy and sustainable swamp providing adequate biomass and sediment to achieve and sustain suitable elevations. As noted in Section 6.0, assessments will continue through the life of the project or until it is decided that the project is successful. As the project plans become more formalized we foresee more defined adaptive management measures and expanded monitoring target years should desired outcomes not be achieved.

Although SLU stations may not be within this project area, tree growth rates will be informative for establishing baseline conditions. Adaptive Management Team will coordinate to obtain CDM data.

4.2. Monitoring Plan ... Convent/Blind River Project, Objective 2, Performance Measure B, Desired Outcome, page 10 - As we are aware Southeastern Louisiana University monitoring stations are not located within the project area, but are located within other areas of the Maurepas Swamp. Pre-construction measurements have also been obtained by LOCPR's contractor, CDM. We recommend that the Adaptive Management Team coordinate with LOCPR and CDM to obtain that data.

The turbidity recorders are included at hydrologic sites because flocculant soils may prohibit accurate measurements of elevation and accretion using SET's and feldspar markers.

4.2. Monitoring Plan, Performance Measure C, Monitoring Design, page 10 - Hourly turbidity recorders within the outfall canal seem adequate to measure sediment discharge, and additional turbidity recorders at hydrologic sites may not be necessary if rod surface elevation tables are installed. The use of turbidity recorders at hydrologic sites should be reconsidered.

We have changed language as suggested. We agree that outfall management features may need to be adaptively managed as stated in section 7.2 Potential Adaptive Management Measures.

4.2. Monitoring Plan ... Convent/Blind River Project, Objective 3, Performance Measure A, Desired Outcome, page 10 - Under "Desired Outcomes" it states that "Operations will determine dry periods." This should be clarified to state that the project will be operated to facilitate dry periods. We expect that dry periods will be dependent on the design and location of the outfall management measures, and adaptively managing those features will be necessary to achieve project goals.

The desired outcome was slightly changed to state "Performance of this measure is most dependent..." It is understood that shade could potentially influence the outcome of this measure which is one reason why densitometer and hemispherical photography measurements, which estimate the amount of crown cover, is also being measured.

Section 4.2, Objective 3, Performance Measure B, Desired Outcome, page 10 - Both cypress and tupelo are shade intolerant. The desired outcome should be revised to accurately depict the

limits of this performance measure. Performance of this measure is dependent on achieving historic hydrologic patterns (extended dry periods) in the swamp and would be more probable in areas that allow sufficient light (i.e., deteriorated swamp habitats that are converting to marsh/open water).

Section 4.2., Objective 3, Performance Measure B, Monitoring Design, Page 10 – Changes in cover classes is not reflected in the Performance Measure. Documenting the increase or decrease in the number of cypress and tupelo should be adequate. If those species decline project success would not be obtained. If it is a goal to document cover class changes, that should be included as a performance measure.

Section 4.2., Objective 4, Page 10 – Hydrologic and water quality parameters are a significant portion of the monitoring procedures and should provide performance measures for improving aquatic habitat within the project area. We recommend revising Objective 4 to include performance measures, desired outcomes, and design relative to improving aquatic habitat based on water quality parameters (i.e., increased dissolved oxygen conditions).

Furthermore, improved fish and wildlife habitat could be also measured indirectly through fish surveys or wildlife surveys, and the Conceptual Ecological Model (page 15) indicates that fish sampling will be performed. The LDWF have historical data on Blind River and is still currently surveying it twice a year in their biological sampling program. We recommend coordinating with the LDWF to incorporate and expand their baseline data to develop performance measures and desired outcomes for this objective; please contact Robert Bourgeois and Heather Finley with LDWF at (225) 765-0765, and (225) 765-2956, respectively.

Section 4.2., Objective 4, Risk Endpoint, page 10 – It is unclear as to the implication of the monitoring decision point titled "Risk Endpoint," and it is only listed as an item under Objective 4. It may be beneficial to the reader to define this and other adaptive management terms in the plan.

Section 4.2.1. Monitoring Procedures, Vegetation, page 11 – This section states that diameter-at-breast height (DBH) of all tagged trees will be measured at regular fixed intervals. These intervals should be identified whether it is annually, biannually, or by using another protocol.

Section 4.2.1. Monitoring Procedures, Vegetation, page 11, and Sediment Accretion and Elevation, page 12 – Reference locations should be designated within the monitoring and adaptive management plan and should be coordinated with LO CPR and CDM who may have already implemented reference locations.

Section 4.2.1. Monitoring Procedures, Hydrology, page 11 – We recommend including conductivity and acidity (pH) in the hydrologic parameters of the interior swamp. We also recommend extending the sampling area and parameters of the open water habitats (i.e., Blind River and Mississippi River Outfall locations) to include the project area drainage channels which support local aquatic habitat. Collecting baseline conditions are important to understand changes to a system relative to an action; therefore, including pre-project sampling should be

Language has been revised to clarify. It is not the goal to document changes in cover class, but only to determine numbers of baldcypress and tupelo sapling and seedlings.

The monitoring plan was developed to directly measures factors if possible. Monitoring for objectives one, two, and three is the minimal information necessary to determine project success and/or adaptive management needs. The team will coordinate with LDWF to incorporate their biological sampling to indirectly measures habitat which will further strengthen the data used to determine project success.

Additionally during PED the Adaptive management and monitoring plan will be revised based on the final project designs. At this time the water quality elements will be revisited and revised as necessary in coordination with agencies to ensure that the appropriate level of monitoring and adaptive management actions are in place to identify any water quality issues and remedy them if they should occur.

Comment noted and language revised accordingly.

All vegetation sampling is conducted annually.

Both monitoring locations and reference sites have yet to be established, but will be established during the plan revision in PED. When discussing establishment of these sites, adaptive management team will coordinate with LO CPR and CDM.

We concur on including conductivity and pH at interior and river hydrologic stations. Pre-project monitoring is critical and this project will conduct pre-construction monitoring for two years during PED. Satellite photography was considered during plan development but was dropped due to the inability to track distribution of freshwater and sediments due to tree cover.

included.

In regards to tracking the distribution of freshwater and sediments, we recommend considering using satellite photography as an adaptive management tool. Yvonne Allen with the Corps' Engineer Research and Development Center and Eric Gliisch with the Corps' New Orleans District have used satellite signatures and gauge data to identify flow paths (and flooding regimes) at different river discharges into the Atchafalaya and Breton basins, respectively. We suggest including this method to supplement the analysis and help identify areas not receiving flow (frequency/duration) and use that information to guide outfall management.

The multi-parameter instrument used to measure salinity also measures water level, which requires hourly measurements to calculate depth, duration and frequency of flooding. Additionally, less frequent discrete measurements would require many more field team deployments which would not provide any significant cost savings compared to the additional cost of the instrumentation and data processing.

Section 4.2.1. Monitoring Procedures, Water Quality, page 12 – Higher salinity waters within the project area are a result of tropical storm events and possibly severe drought conditions. Hourly measurements seem unnecessary.

We like this suggestion and agree that this information is necessary and that the plan should define these time frames. However, it is impossible to estimate these dates at this early stage in the project. We will address this during the plan revision in PED.

Section 6.0. Assessment, page 14 – We recommend development of a table that identifies each performance measure; anticipated completion dates for each phase of the planned assessment action, and expected dates for report dissemination to the Adaptive Management Team and the Program Management Team. We understand that assessment completion and report delivery dates will be tentative and subject to change; however, assurance should be provided that reasonable time frames will be established, and necessary modifications will be identified and brought to the attention of the program managers in a timely manner. In the absence of a schedule for action, data analysis and reporting and identification of needed modifications could be unacceptably delayed or not completed.

Annex 1. Conceptual Ecological Model, Section 2.2, Project Background, page 5 – The last sentence should be revised to state, "These factors combined with increasing occurrences of episodic high salinities ...will result in a highly degraded swamp system which is at risk of conversion to open water."

Concur. The final report reflects this change.

Annex 1. Conceptual Ecological Model, Section 2.2, Project Background, page 6 – The project description should be revised to state that the proposed diversion project could introduce up to 3,000 cubic feet per second.

Concur. The final report reflects this change

Annex 1. Conceptual Ecological Model, Section 3.1.2, Altered Hydrology, page 10 – While cypress and tupelo tress are able to grow in flooded conditions, prolonged flooding could result in decreased growth rates and eventually tree mortality. Increasing dry periods from existing conditions could be very beneficial to the existing forest stand. We recommend revising this section accordingly.

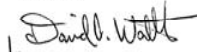
Concur. The final report reflects this change.

Annex 1, Conceptual Ecological Model, Section 3.4.2., Fish and Wildlife, pages 14-15 – The bald eagle was removed from the Federal list of threatened and endangered species on August 8, 2007. Further, the endangered West Indian manatee (*Trichechus manatus*) and pallid sturgeon (*Scaphirhynchus albus*) are likely to occur in the project area. This section should be revised accordingly.

Concur. The final report reflects this change.

We appreciate the opportunity to review and comment on the draft monitoring and adaptive management plan, and look forward to continued coordination with the LCA Adaptive Management Framework Team. Should you have any questions regarding our comments, please contact Angela Trahan (337/291-3137) of this office.

Sincerely,

  
James F. Boggs  
Supervisor  
Louisiana Field Office

cc: EPA, Dallas, TX  
NMFS, Baton Rouge, LA  
Corps, New Orleans, LA (Attention: Dr. William Klein, CEMVN-PM-RS)  
LDWF, Region 7 Office, Baton Rouge, LA  
LDWF, Baton Rouge, LA (Attn.: Kyle Balkum)  
LDWF, Baton Rouge, LA (Attn.: Heater Finley)  
LOCPR, Baton Rouge, LA



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
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Lafayette, Louisiana 70506  
July 7, 2010



Colonel Alvin B. Lee  
District Engineer  
U.S. Army Corps of Engineers  
Post Office Box 60267  
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

Please reference the letter and attached Biological Assessment (BA) dated May 21, 2010, sent by Mr. Richard Boe, Acting, Chief of your Environmental Branch requesting our concurrence with your determination of effects of the proposed Small Diversion at Convent/Blind River to the endangered pallid sturgeon (*Scaphirynchus albus*). You have determined that the project is likely to adversely affect this species. The Fish and Wildlife Services (Service) comments are provided in accordance with Section 7 of the Endangered Species Act (87 stat. 884 as amended; 16 U.S.C. 1531 et seq.).

The proposed project involves the construction of a small sized (up to 5,000 cubic feet per second [cfs]) freshwater diversion located at approximately River Mile (RM) 163 near Romeville, Louisiana for the purpose of restoring freshwater flow into a portion of the Maurepas Basin. The proposed operating plan has not been fully developed. Informal consultation between the US Army Corps of Engineers (Corps) and the Service has been ongoing since 2008; however, no coordination has been conducted for the proposed project.

According to your BA pallid sturgeon are known to be relatively abundant in the vicinity of the proposed diversion. Furthermore, recent sampling has confirmed at least one pallid sturgeon has been entrained in the Davis Pond Freshwater Diversion (RM 118). The Corps concluded that the Small Diversion at Convent/Blind River is likely (i.e., has the potential) to adversely affect the pallid sturgeon. Considering the above information and the information on the swimming ability of sturgeon presented in the BA, the Service concurs with the Corps' conclusion.

In order to ensure compliance with the Endangered Species Act, and to ensure the Service has sufficient information required to initiate formal consultation the following information will be required:

- 1) The distance and velocity of flow fields extending from the structure into the river should be determined, if feasible. This determination should be done at the proposed discharges (and various structure openings to achieve those discharges) to determine

- a. The velocity through the culvert at design flow is approximately 10 feet per second. (Triple 10 foot by 10 foot culverts with a cross section area of 300 feet and a diversion flow of 3000 cubic feet per second.)
- b. There is in the current conceptual design a trash rack that will be considerably larger in total area than the culverts and will be sloped at a distance approximately 10 feet from the face of the culverts.
- c. The conceptual design shows the inlet channel from the Mississippi River a distance of approximately 300 feet, to be concrete lined. This lining is not to protect from inlet velocities caused by the diversion, but from the velocities of the Mississippi River which can range from 4 to 6 feet per second.
- d. From the reports available the Pallid Sturgeon adults can swim at about 8 feet per second for short periods. The young sturgeons are limited to about 1 to 2 feet per second. They can actually swim upstream in higher velocity currents due to their ability to use the channel bottom and sides for propulsion. (1.)
- e. At a distance of 30 feet from culvert face the velocity from the diversion is approximately 2.5 feet per second which is less than the 5 feet per second normal velocity in the Mississippi River. The actual configuration of the diversion entrance will be more downstream than shown on the current feasibility drawings for the purpose of keeping floating debris from entering the diversion channel. This may also assist in keeping the Pallid Sturgeon from entering the diversion.

potential entrainment throughout the diversion's operation. A comparison of those flow fields with the swimming capabilities of sturgeon should be conducted.

2) Data gathered at existing diversions by the Service's Baton Rouge Fish and Wildlife Conservation Office and by Nicholls State University was not examined within the BA. That information should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured and their movements can be examined in detail. The size of sturgeon captured should also be provided.

3) Sampling data from the Mississippi River should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured can be examined in detail. The size of sturgeon captured should also be provided.

4) Catch per unit effort for each sampling gear and stage of growth (e.g., juvenile, sub-adult, etc.) should be provided.

5) Calculate the average area of opening for the structure for flows of 500 cfs and 3,000 cfs as would vary with river stages throughout the year and an estimate of the number of days the structure will be at those areas based on the river's hydrograph.

6) Compare the above calculated (Number 5) average area of opening throughout the year with the Mississippi River channels cross sectional area at proposed diversions location.

7) Compare main channel flow (cfs) to water diverted (cfs) to calculate percent of latitudinal flow diverted.

8) Provide a final copy of the Scope-of-Work (SOW) that details sampling design, techniques, and calculation of catch-per-unit-effort.

9) A detailed and current description of the proposed project (e.g., operational plan) including a plat depicting the precise location and dimensions and a cross-section showing the bottom elevations of the structure and outfall channel.

10) Provide a review of larval fish studies in the Lower Mississippi River that are applicable, and relate that information to the potential impact the diversion may have on larval sturgeon.

11) Investigate potential features to be incorporated into the intake structure that would reduce the chance of entrainment or improve the likelihood of sturgeon being able to swim out of the structure and outfall channel.

Response to be provided by Glen Constance.

Response to be provided by ERDC

Response to be provided by ERDC

- a. The culvert is currently set at elevation 0 MSL and the top is at elevation 10 MSL so at the operating point of 11 MSL in the River the diversion will deliver 3000 cubic feet per second. The diversion gates are automatically adjusted to maintain the 3000 cubic feet per second with changing levels of the Mississippi River and changing downstream tidal conditions from Lake Maurepas.
- b. The following table shows the calculated flow and culvert cross section area for the River stages below 11 feet MSL:

potential entrainment throughout the diversion's operation. A comparison of those flow fields with the swimming capabilities of sturgeon should be conducted.

2) Data gathered at existing diversions by the Service's Baton Rouge Fish and Wildlife Conservation Office and by Nicholls State University was not examined within the BA. That information should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured and their movements can be examined in detail. The size of sturgeon captured should also be provided.

3) Sampling data from the Mississippi River should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured can be examined in detail. The size of sturgeon captured should also be provided.

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5) Calculate the average area of opening for the structure for flows of 500 cfs and 3,000 cfs as would vary with river stages throughout the year and an estimate of the number of days the structure will be at those areas based on the river's hydrograph.

6) Compare the above calculated (Number 5) average area of opening throughout the year with the Mississippi River channels cross sectional area at proposed diversions location.

7) Compare main channel flow (cfs) to water diverted (cfs) to calculate percent of latitudinal flow diverted.

8) Provide a final copy of the Scope-of-Work (SOW) that details sampling design, techniques, and calculation of catch-per-unit-effort.

9) A detailed and current description of the proposed project (e.g., operational plan) including a plat depicting the precise location and dimensions and a cross-section showing the bottom elevations of the structure and outfall channel.

10) Provide a review of larval fish studies in the Lower Mississippi River that are applicable, and relate that information to the potential impact the diversion may have on larval sturgeon.

11) Investigate potential features to be incorporated into the intake structure that would reduce the chance of entrainment or improve the likelihood of sturgeon being able to swim out of the structure and outfall channel.

Blind River Diversion Culverts Flow - Stage Relationship				
Stage in Mississippi River (feet)	Culvert Cross Section (sq. feet)	Discharge Flow Rate (cubic feet / sec.)	Velocity at Face of Culverts (Feet / Sec.)	Annual Average Percent Exceedence (%)
>11	For River stages greater than 11 the gates will be automatically controlled to limit flows to 3000 cubic feet per second			
11	300	3000	10	47
10	300	2900	9.7	49
9	270	2600	9.6	51
8	240	2300	9.6	56
7	210	1800	8.6	61
6	180	1300	7.2	68
5	150	1000	6.7	74
4	120	800	6.7	80
<4	For River stages less than 4, flows are negligible and depend on Lake Maurepas tidal variations.			



potential entrainment throughout the diversion's operation. A comparison of those flow fields with the swimming capabilities of sturgeon should be conducted.

2) Data gathered at existing diversions by the Service's Baton Rouge Fish and Wildlife Conservation Office and by Nicholls State University was not examined within the BA. That information should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured and their movements can be examined in detail. The size of sturgeon captured should also be provided.

3) Sampling data from the Mississippi River should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured can be examined in detail. The size of sturgeon captured should also be provided.

4) Catch per unit effort for each sampling gear and stage of growth (e.g., juvenile, sub-adult, etc.) should be provided.

5) Calculate the average area of opening for the structure for flows of 500 cfs and 3,000 cfs as would vary with river stages throughout the year and an estimate of the number of days the structure will be at those areas based on the river's hydrograph.

6) Compare the above calculated (Number 5) average area of opening throughout the year with the Mississippi River channels cross sectional area at proposed diversions location.

7) Compare main channel flow (cfs) to water diverted (cfs) to calculate percent of latitudinal flow diverted.

8) Provide a final copy of the Scope-of-Work (SOW) that details sampling design, techniques, and calculation of catch-per-unit-effort.

9) A detailed and current description of the proposed project (e.g., operational plan) including a plat depicting the precise location and dimensions and a cross-section showing the bottom elevations of the structure and outfall channel.

10) Provide a review of larval fish studies in the Lower Mississippi River that are applicable, and relate that information to the potential impact the diversion may have on larval sturgeon.

11) Investigate potential features to be incorporated into the intake structure that would reduce the chance of entrainment or improve the likelihood of sturgeon being able to swim out of the structure and outfall channel.

c. The diversion is planned to be operated continuously between March through October each year. The actual flow rate of the diversion will depend on numerous factors including tidal variations, swamp water Requirements, local rainfall events, Mississippi River and other environmental elements. stage

a. In general the cross section of the diversion culverts (300 square feet) is less than 0.25 percent of the Mississippi River cross section.

b. For the range of River stages from 4 to 11 feet, the River cross section at the diversion point (River Mile 162) varies from 110,000 to 130,000 square feet. At a stage of 11 the River at it deepest point is 130 feet.

a. A stage discharge relationship for the Mississippi River at the diversion site could not be located and most likely is not available. Typical discharge rates for the Mississippi River at the time of maximum diversion (3000 cubic feet per second) are in the range of 500,000 cubic feet per second.

b. The diversion flow represents approximately 0.6 percent of the flow in the River.

Response to be provided by ERDC.

potential entrainment throughout the diversion's operation. A comparison of those flow fields with the swimming capabilities of sturgeon should be conducted.

2) Data gathered at existing diversions by the Service's Baton Rouge Fish and Wildlife Conservation Office and by Nicholls State University was not examined within the BA. That information should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured and their movements can be examined in detail. The size of sturgeon captured should also be provided.

3) Sampling data from the Mississippi River should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured can be examined in detail. The size of sturgeon captured should also be provided.

4) Catch per unit effort for each sampling gear and stage of growth (e.g., juvenile, sub-adult, etc.) should be provided.

5) Calculate the average area of opening for the structure for flows of 500 cfs and 3,000 cfs as would vary with river stages throughout the year and an estimate of the number of days the structure will be at those areas based on the river's hydrograph.

6) Compare the above calculated (Number 5) average area of opening throughout the year with the Mississippi River channels cross sectional area at proposed diversions location.

7) Compare main channel flow (cfs) to water diverted (cfs) to calculate percent of latitudinal flow diverted.

8) Provide a final copy of the Scope-of-Work (SOW) that details sampling design, techniques, and calculation of catch-per-unit-effort.

9) A detailed and current description of the proposed project (e.g., operational plan) including a plat depicting the precise location and dimensions and a cross-section showing the bottom elevations of the structure and outfall channel.

10) Provide a review of larval fish studies in the Lower Mississippi River that are applicable, and relate that information to the potential impact the diversion may have on larval sturgeon.

11) Investigate potential features to be incorporated into the intake structure that would reduce the chance of entrainment or improve the likelihood of sturgeon being able to swim out of the structure and outfall channel.

- a. The diversion is a gated structure with gates automatically controlled to divert a set volume of flow from 500 to 3000 cubic feet per second.
- b. The current design includes a trapezoidal channel that will connect the culverts at the levee to the Mississippi. The culverts and the inlet channel elevations will be at approximately 0 Mean Sea Level (NAVD88).
- c. At the end of the entrance channel there is proposed to be a trash rack approximately 20 feet in height (El 0 to El. 20) sloped at approximately 60 degrees to horizontal. The primary purpose of the rack is to keep debris from entering the St. James drainage system and the Blind River.
- d. The culverts are proposed to be three 10 foot by 10 foot cast in place concrete culverts with integral cut off wall to protect the integrity of the existing levee. Sluice gates will be used to control the flow and to shut tightly to stop all diversion flow.
- e. After the flow passes through the culverts at velocities of 10 feet per second they enter a stilling basin that is part of the transmission canal extending approximately 3 miles to the St. James drainage system. The transmission canal is a trapezoid earthen channel with elevated guide levees. Typical channel velocities are 1.5 to 2.0 feet per second.
- f. St. James drainage canals are used for distribution to the swamp through calibrated berm gaps through the spoil banks from the drainage channel dredging.
- g. To control short circuiting of diversion waters to the Blind River the drainage canals will be modified with control structures. The exact design of the control structures may change during the design and value engineering process, but are currently in the project as downward opening crest gates at six locations.
- h. There will be four sets of culverts installed under Highway 61 to promote hydraulic connectivity through the swamp.

potential entrainment throughout the diversion's operation. A comparison of those flow fields with the swimming capabilities of sturgeon should be conducted.

2) Data gathered at existing diversions by the Service's Baton Rouge Fish and Wildlife Conservation Office and by Nicholls State University was not examined within the BA. That information should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured and their movements can be examined in detail. The size of sturgeon captured should also be provided.

3) Sampling data from the Mississippi River should be provided in a format (including plat showing locations) so that the timing and location of sampling efforts and of any sturgeon captured can be examined in detail. The size of sturgeon captured should also be provided.

4) Catch per unit effort for each sampling gear and stage of growth (e.g., juvenile, sub-adult, etc.) should be provided.

5) Calculate the average area of opening for the structure for flows of 500 cfs and 3,000 cfs as would vary with river stages throughout the year and an estimate of the number of days the structure will be at those areas based on the river's hydrograph.

6) Compare the above calculated (Number 5) average area of opening throughout the year with the Mississippi River channels cross sectional area at proposed diversions location.

7) Compare main channel flow (cfs) to water diverted (cfs) to calculate percent of latitudinal flow diverted.

8) Provide a final copy of the Scope-of-Work (SOW) that details sampling design, techniques, and calculation of catch-per-unit-effort.

9) A detailed and current description of the proposed project (e.g., operational plan) including a plat depicting the precise location and dimensions and a cross-section showing the bottom elevations of the structure and outfall channel.

10) Provide a review of larval fish studies in the Lower Mississippi River that are applicable, and relate that information to the potential impact the diversion may have on larval sturgeon.

11) Investigate potential features to be incorporated into the intake structure that would reduce the chance of entrainment or improve the likelihood of sturgeon being able to swim out of the structure and outfall channel.

Response to be provided by ERDC.

- a. As mentioned earlier the angle that the diversion meets the River can be turned towards the downstream direction by about 15 to 20 degrees so that floating debris will not enter the diversion channel.
- b. A short wall could be included in the inlet channel so that the sturgeons that primarily swim near the bottom would not enter the diversion channel and would stay in the main body of the River.

12) The relative abundance of pallid sturgeon compared to the shovelnose sturgeon and other fish species in the Lower Mississippi River. The relative abundance should be presented by sampling gear type and by stage of growth (e.g., juvenile, sub-adult, etc.).

The formal consultation process for the project will not begin until we receive the above information, or a statement explaining why that information cannot be made available. We will confirm our receipt of that information; our notification letter to you will also outline the dates within which formal consultation on the proposed action should be complete and our biological opinion delivered.

Response to be provided by ERDC.

Section 7 of the ESA allows the Service up to 90 calendar days to conclude formal consultation with your agency and an additional 45 calendar days to prepare our biological opinion. As a reminder, the ESA requires that after initiation of formal consultation the Federal action agency may not make any irreversible or irretrievable commitment of resources that limits future options. This practice insures agency actions do not preclude the formulation or implementation of reasonable and prudent alternatives that avoid jeopardizing the continued existence of endangered and threatened species or destroying or modifying their critical habitats.

If you have any questions or concerns about this consultation or the consultation process in general, please feel free to contact David Walther of this office at 337/291-3122.

Sincerely,



James F. Boggs  
Supervisor  
Louisiana Field Office

cc: FWS, Ecological Services, Jackson, MS  
FWS, Fish and Wildlife Resource Office, Baton Rouge, LA  
ERDC, Vicksburg, MS  
LDWF, Natural Heritage Program, Baton Rouge, LA  
OPCR, Baton Rouge, LA



United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
1001 Indian School Road NW, Suite 348  
Albuquerque, New Mexico 87104



ER 10/478  
File 9043.1

June 29, 2010

Joan Exnicios  
Chief, Environmental Planning & Compliance Branch  
New Orleans District  
U.S. Army Corps of Engineers  
PO Box 60267  
New Orleans, Louisiana 70160-0267

Subject: Draft Environmental Impact Statement for Small Diversion at Convent/Blind River, Freshwater Diversion Project, Integrated Feasibility Study, Louisiana Coastal Area (LCA), St. James Parish, LA

Dear Ms. Exnicios:

The U.S. Department of the Interior has reviewed the information provided and offers the following comments in accordance with provisions of the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the Endangered Species Act of 1973 (87 Stat. 884, as amended, 16 U.S.C. 1531 et seq.).

The tentatively selected plan will benefit the fish and wildlife resources that depend on the Maurepas Swamp by providing freshwater, nutrients, and sediments to the study area thus facilitating sediment deposition, increased organic production, increased biological productivity, and reduced conversion of swamp habitat to open water. Approximately 21,369 acres would benefit from the proposed project resulting in 6,421 Average Annual Habitat Units of swamp habitat at the end of the project life.

**General Comments**

The DEIS provides a good description of fish and wildlife resources within the study area, the purpose and need for the proposed action, program objectives, critical needs and opportunities, and potential risks and uncertainties. Given the substantial adverse future impacts to coastal wetlands and their associated fish and wildlife resources that are expected to occur under future-without-project conditions, the U.S. Fish and Wildlife Service strongly supports authorization of the proposed freshwater diversion project, as it would improve environmental conditions by increasing swamp productivity and reducing the trend of deterioration in the Maurepas Swamp.

Please reference the Corps' Biological Assessment (BA) provided in Appendix A. The Corps has evaluated proposed project's effects on the Federally-listed as threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*), endangered pallid sturgeon (*Scaphirhynchus albus*), and endangered West Indian manatee (*Trichechus manatus*).

The pallid sturgeon is found in both the Mississippi and Atchafalaya Rivers (with known concentrations in the vicinity of the Old River Control Structure Complex); it is possibly found in the Red River as well. The pallid sturgeon is adapted to large, free-flowing, turbid rivers with a diverse assemblage of physical characteristics that are in a constant state of change. Detailed habitat requirements of this fish are not known, but it is believed to spawn in Louisiana. Habitat loss through river channelization and dam construction has adversely affected this species throughout its range. Entrainment issues associated with dredging operations in the Mississippi and Atchafalaya Rivers and through diversion structures off the Mississippi River are two potential effects that should be addressed in future planning studies and/or in analyzing current project effects.

Sampling conducted by the Corps' Engineer Research and Development Center (ERDC) in 2005 and 2006 for the Lake Maurepas Diversion Project, a Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) project, resulted in the capture of 10 adult pallid sturgeon in the Mississippi River near the Gramercy Bridge. That location provides habitat similar to the littoral habitat of the proposed Blind River/Convent Diversion sites. The Corps has determined that due to the documented populations of pallid sturgeon near the diversion site, the proposed project activities have the potential to adversely affect the pallid sturgeon. Furthermore, additional surveying is ongoing near the proposed Convent/Blind River project area as well as other proposed diversion locations to ascertain more accurate population data. Because of the proposed project is likely to affect pallid sturgeon and monitoring is ongoing, further ESA consultation is necessary, and coordination with the FWS should continue.

West Indian manatees occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months (i.e., June through September). The manatee has declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals. Please be aware, however, manatee occurrences appear to be increasing, and they have been regularly reported in the Amite, Blind, Tchoufouct, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of Louisiana.

According to the BA, the FWS's standard manatee protection measures will be implemented to avoid impacts to the manatee, therefore the FWS concurs that the proposed project is not likely to adversely affect the West Indian manatee.

The Gulf sturgeon is an anadromous fish that occurs in many rivers, streams, and estuarine waters along the northern Gulf coast between the Mississippi River and the Suwannee River, Florida. In Louisiana, Gulf sturgeon have been reported at Rigolets Pass, rivers and lakes of the Lake Pontchartrain basin, and adjacent estuarine areas. Spawning occurs in coastal rivers between late winter and early spring (i.e., March to May). Adults and sub-adults may be found in those rivers and streams until November and in estuarine or marine waters during the remainder of the year. Sturgeon less than 2 years old appear to remain in riverine habitats and estuarine areas throughout the year, rather than migrate to marine waters. Habitat alterations

General comment statements within this letter with regard to protection of the pallid sturgeon and continued coordination with USFWS are acknowledged.

such as those caused by water control structures that limit and prevent spawning, poor water quality, and over-fishing have negatively affected this species.

Sampling conducted by the Corps' ERDC from November 2005 through June 2006 for the CWPPRA, Lake Maurepas Diversion Project resulted in no Gulf sturgeon being detected via telemetry nor captured in Lake Maurepas. Additionally, Gulf sturgeon likely inhabit Lake Maurepas only during annual migration between the marine habitats and their spawning habitats along the tributary rivers of the north shore of Lake Pontchartrain. The Corps has determined that changes to study area salinity and water temperatures associated with the proposed diversion of freshwater from the Mississippi river are unlikely to adversely affect the Gulf sturgeon as they are only likely to enter the study area during migration. The FWS concurs with the Corp's determination that the proposed project is not likely to adversely affect the Gulf sturgeon. However, should additional hydrologic modeling determine that proposed project would influence Lake Maurepas salinities and water temperatures, additional consultation will be necessary.

The FWS's Lafayette Field Office supports implementation of the proposed project and provided the following fish and wildlife recommendations in their April 2010 Draft FWCA Report:

1. Because of the expedited schedule, we recommend that the Corps continue to coordinate with the agencies during the remaining Feasibility phase and the Preconstruction, Engineering, and Design (PED) phase to ensure any new project features, development of the operational plan, and/or changes in the design fully incorporate adequate fish and wildlife conservation measures and that those features can be adequately evaluated with regards to impacts to fish and wildlife resources.
2. We recommend that hydrologic modeling efforts better identify/quantify influence areas and how water (sediment and nutrients) moves through the system and within each hydrologic unit under the proposed operational plan. Those hydrologic modeling results should be provided to the habitat evaluation team with adequate time to evaluate the results and conduct detailed impacts analysis. Accretion rates need to be determined and incorporated into the hydrologic modeling (e.g., flood durations and depths should decrease). Benefits cannot be fully addressed without including this in the analysis.
3. To accommodate changing goals and restoration needs for the region, we recommend that the diversion structure, as well as the outfall management system, be designed to incorporate operational flexibility to address changing environmental conditions through an adaptive management program.
4. We recommend that water levels and swamp floor elevations be determined on a refined scale and incorporated into the hydrologic modeling.
5. Salinity predictions should be included in the hydrologic modeling efforts and re-evaluated, and, if necessary, changes be undertaken.
6. Due to time constraints, impacts associated with the transmission canal were assessed in the habitat assessment as a single habitat type; separate WVAs on each

Acknowledged. It is the intent of the USACE and OCPR to continue coordination with the agencies to complete the feasibility phase and on into the PED phase to fully and adequately address impacts to fish and wildlife.

Concur. Additional modeling will be done as part of PED to refine the water surface elevations along with limited swamp floor elevations in areas proximal to berm cuts and design features. During PED hydraulic analysis of the entire system will be performed.

Concur. The feasibility level monitoring and adaptive management plan includes both pre- and post-diversion monitoring of sediment accretion, elevation, forest composition, and forest productivity. As more specific design information becomes available in the PED phase, this monitoring and adaptive management plan will be revised to address changing environmental conditions and the Project delivery Team will propose more concrete and formalized communication mechanisms for the exchange of information to inform operational decisions related to the diversion structure and outfall management system.

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6. Due to time constraints, impacts associated with the transmission canal were assessed in the habitat assessment as a single habitat type; separate WVAs on each

There have been several papers written on salinity changes in Lake Pontchartrain due to the diversions planned for Blind River and Hope Canal. (1. Georgiou, I.Y., McCorquodale, J. A., Schindler, J., Retana A.G., FitzGerald, D.M., Hughes, Z., Howes, N., 2009, Impact of Multiple Freshwater Diversions on the Salinity Distribution in the Pontchartrain Estuary under Tidal Forcing. 2. Georgiou, I.Y., 2010, High Frequency Response and Transport in the Pontchartrain Basin due to wind stress) What is important to learn from these studies is that the salinity levels in Lake Maurepas under normal conditions (i.e. no tropical events) are in the range considered a fresh water lake (less than 1.5 parts per thousand). Within Lake Pontchartrain, the salinity levels are referred to as oligohaline (0.5-5.0 ppt). For the project area the salinity levels are not an issue at any times except tropical events and long term drought periods. The conditions of tropical events are so different that any modeling of salinity levels has no bearing on the project objectives. The key feature of the project is to be able to flush the salinity from the area, which based on the hydraulic detention times modeled in the report, can occur in less than 7 days which is sufficient to avoid salinity intrusion into the tree root zones thus causing some levels of mortality. A long drought period in 1999 caused the salinity levels of Lake Maurepas to approach 4 parts per thousand. This was for a short period and is at the threshold of survival for the bald cypress forest.

Based on the fact that the current system is a fresh water system the need for any salinity modeling within the project area is not warranted. It may be necessary to review the previous salinity models for Lake Pontchartrain and determine the effect of the diversion on that system. The modeling of the larger system with multiple freshwater inputs is beyond the scope and outside the area of the current project

Discussion. The alignment for the transmission canal is located almost wholly within agriculturally active lands and thus was treated as a single habitat type. The WVA was conducted in a manner consistent with the habitat type within the project study area the majority of which is cypress-tupelo. A sensitivity analysis will be performed to the extent possible for the WVA to demonstrate which variables are most sensitive, and therefore, crucial to the success of the project, to address the fact that the benefits presented depend on a number of highly uncertain factors, and to demonstrate whether the range of benefits estimated in the WVA will still be realized.



habitat type are recommended.

- 7. If a proposed project feature is changed significantly or is not implemented within one year of the Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with our office to ensure that the proposed project would not adversely affect any Federally listed threatened or endangered species or their critical habitat.

← Concur. USACE will re-initiate coordination with USFWS if any delay greater than one year is realized or if any of the project features changes significantly; this will be done to ensure no adverse affects to any Federally listed threatened or endangered species or their critical habitats.
- 8. Avoid adverse impacts to bald eagle nesting locations and wading bird colonies through careful design of project features and timing of construction. A qualified biologist should inspect the proposed work site for the presence of undocumented wading bird nesting colonies and bald eagles during the nesting season (i.e., February 16 through October 31 for wading bird nesting colonies, and October through mid-May for bald eagles).

← Acknowledged.
- 9. To minimize disturbance to colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present). In addition, we recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season.

← Acknowledged.
- 10. Because bald eagles are known to nest within the proposed study area, we recommend that an evaluation be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: <http://www.fws.gov/southeast/es/baldeagle>. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary and those results should be forwarded to this office.

← Acknowledged. Activities within the project study area will require a Special Use Permit from the WMA manager at LDWF. Coordination also is required with the Scenic Rivers Coordinator.
- 11. Please coordinate with the LDWF, Region 7 Office (225/765-2360), for further information regarding any additional permits that may be required to perform work on the Maurepas Swamp Wildlife Management Area (WMA).

← Acknowledged.
- 12. Please contact the LDWF, Scenic Rivers Program (318/343-4045) for further information regarding any additional permits that may be required to perform work on the above referenced river.

← Acknowledged. To the extent practicable, land clearing activities will be conducted during the fall or winter to minimize impacts to nesting migratory birds; these activities also will be mindful of hunting seasons in the WMA.
- 13. Land clearing associated with project features should be conducted during the fall or winter to minimize impacts to nesting migratory birds, when practicable.

← Acknowledged. This has been done and responses to comments received from USFWS, NRCS, NOAA, EPA, LDWF, LDEQ, and DNR will be included in the final report, Appendix G.
- 14. Further detailed planning of project features (e.g., Design Documentation Report, Engineering Documentation Report, Plans and Specifications, or other similar documents) and any adaptive management and monitoring plans should be coordinated with the FWS and other State and Federal natural resource agencies, which shall be provided an opportunity to review and submit recommendations on all the work addressed in those reports.

15. A report documenting the status of implementation, maintenance and adaptive management measures should be prepared every three years by the managing agency and provided to the Corps, the FWS, National Marine Fisheries Service, U.S. Environmental Protection Agency, Louisiana Department of Natural Resources, Office of Coastal Protection and Restoration, and the Louisiana Department of Wildlife and Fisheries. That report should also describe future management activities, and identify any proposed changes to the existing management plan.

Acknowledged.

Additionally, the FWS recommends that project designs for cross culverts proposed under U.S. Highway 61 and the Kansas City Southern Railroad and other bridge openings incorporate features to ensure fish and wildlife passage. This should be incorporated into the design of the project culverts and bridges that would also facilitate other restoration initiatives of the project (e.g., improving hydrology, and the movement of sediment and nutrients). Please refer to the following websites for additional information:

The culverts to be installed under Highway 61 are low profile culverts that will be mostly submerged. Aquatic life will be able to cross through the culverts as well as small animals that can swim through the culverts when water levels are low. There may be times when the culverts become totally submerged.

- Wildlife and Roads: A resource for mitigating the effects of roads on wildlife using wildlife crossings such as overpasses, underpasses, and crosswalks.

<http://www.wildlifeandroads.org/decisionguide/>

Due to the elevation of the road it is not possible to allow for culverts of sufficient height to allow for passage of deer and other large animals. The roadway is an impediment to flow movement through the swamp and the culverts will allow the flow to equalize on both sides of the road.

- Evaluation of the Use and Effectiveness of Wildlife Crossings, Final Report Prepared by U.S. Geological Survey for the National Cooperative Highway Research Program Transportation Research Board of The National Academies.

[http://www.trb.org/NotesDocs/25-27\\_FR.pdf](http://www.trb.org/NotesDocs/25-27_FR.pdf)

**Specific Comments**

3.7.7 Monitoring Plan and Adaptive Management, page 3-101, line 27 – The Monitoring and Adaptive Management Plan is included in Appendix I; this section should be revised accordingly. Additionally, monitoring objectives and performance measures discussed in the main report do not coincide with those detailed in the draft Monitoring and Adaptive Management Plan. The FWS recognizes that the development of the monitoring and adaptive management plan is an iterative process that reflects a level of detail consistent with the project feasibility study. Accordingly, a more detailed monitoring and adaptive management plan will be drafted as a component of the design document during planning, engineering and design phase. The FWS recommends that project delivery team and natural resource agency involvement continue throughout this iterative plan development process. Furthermore, please reference the FWS’s comments dated April 7, 2010, regarding the March 8, 2010 draft Monitoring and Adaptive Management Plan.

Goals and objectives in the Monitoring and Adaptive Management Plan are not significantly different than stated elsewhere in the report (section 2.4). The Adaptive Management Framework Team added more detail to the objectives to better relate them to monitoring components

Coordination between the Project Delivery Team and USFWS and other agencies will be continued throughout PED, including updates to the monitoring and adaptive management plan.

Appendix A, Biological Assessment – As previously stated, the FWS concurs with the Corps not likely to adversely affect determination for impacts to the Gulf sturgeon and the West Indian manatee. However, because of the proposed project is likely to affect pallid sturgeon, further ESA consultation and coordination with the FWS should continue.

Acknowledged.

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We appreciate the opportunity to provide comments on the subject document. If your staff has additional questions regarding our comments, please contact FWS's Lafayette Field Office Angela Trahan at (337) 291-3137.

Sincerely,



Stephen R. Spencer  
Regional Environmental Officer

cc: U.S. Environmental Protection Agency, Dallas, TX  
Attn: Barbara Keeler  
NOAA's National Marine Fisheries Service, Baton Rouge, LA  
Attn: Mr. Richard Hartman  
Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA  
Attn: Mr. Kyle Balkum  
Louisiana Department of Wildlife and Fisheries, Natural Heritage Program,  
Baton Rouge, LA  
Louisiana Office of Coastal Protection and Restoration, Baton Rouge, LA

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