APPENDIX J

PUBLIC VIEWS AND RESPONSES

TABLE OF CONTENTS

Item	Page
Section 1. Public Involvement Summary	J-1
Section 2. Comments and Responses	J-5

Commenters

Number	
1	Mr. Tom Aicklen (Aries 27, Inc.)
2	Alliance of Concerned Citizens of Louisiana, Inc.
3	Mr. Van Bouquet (one of 36 form letters)
4	Dr. Robert H. Chabreck, Ph.D.
5	Coalition to Restore Coastal Louisiana
6	Coalition to Restore Coastal Louisiana (new mission Statement)
7	Coast Watch (North Shore)
8	Conrad Industries, Inc.
9	Continental Land and Fur Company, Inc.
10	Mr. Allan Ensminger
11	Environmental Protection Agency: 11A EPA's Transmittal Letter 11B EPA's Letter Presented at Public Hearing 11C EPA's Formal Comments on Draft EIS 11D Basin Plan Review by Dr. Sherwood M. Gagliano, Ph.D. 11E EIS Comments by Lee Wilson and Assoc. 11F Restoration Plan Review by Dr. Ivor Ll. Van Heerdan, Dr. Don Davis, and Dr. Mike Barber
12	Louisiana Department of Natural Resources
13	Louisiana Department of Transportation and Development
14	Louisiana Departmentof Wildlife and Fisheries
15	Lafourche Parish Council

TABLE OF CONTENTS
(Continued)

16 Lake Pontchartrain Basin Foundation

17 Mr. Benjamin W. Leigh, P.E.

18 Louisiana Audubon Council

19 Dr. Charles G. Groat, Ph.D., Executive Director, Center for Coastal, Energy, and Environmental Resources, Louisiana State University

20 Natural Systems Management and Engineering Program, Center for Coastal, Energy, and Environmental Resources, Louisiana State University

21 Mr. Gregory Miller

22 National Marine Fisheries Service, Restoration Center, Silver Spring, Maryland

23 National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, Florida

24 National Oceanic and Atmospheric Administration, Office of the Chief Scientist, Washington D.C.

25 Phillips Petroleum Company, Inc., Houston, Texas

26 Dr. Gary Shaffer, Department of Biological Sciences, Southeastern Louisiana University, Hammond, Louisiana

27 Soil Conservation Service, Alexandria, Louisiana

28 Tickfaw River Basin Group

29 U.S. Department of Housing and Urban Development, Fort Worth, Texas

30 U.S. Department of the Interior, Office of the Secretary, Washington, D.C.

31 Ms. Patricia Willging

Appendix A. Summary of Public Hearing on the Environmental Impact Statement and List of Attendees

Section 1. PUBLIC INVOLVEMENT PROGRAM SUMMARY

One of the earliest Task Force efforts at public participation was the establishment of the Citizen Participation Group (CPG) by the Task Force to coordinate the preparation of the 1st Priority Project List with the interested public. The stated purpose of the CPG is to maintain consistent public review and input into the plans and projects being considered by the Task Force and to assist and participate in the public involvement program. The CPG is composed of seventeen organizations that represent the interests of the environmental community, oil and gas industry, agriculture, commercial fishing, recreational fishing, navigation, landowners, and public advocacy groups, all of which are active in Louisiana. The CPG received detailed briefings on the first three priority project lists and on evaluation methods used to rank projects. Copies of draft priority project lists were provided to each member of the CPG for their review and comment. The CPG meets at its own discretion, but many times meets in conjunction with other CWPPRA committees and work groups. The membership of the CPG is shown below.

Membership of the Citizen Participation Group

Coalition to Restore Coastal Louisiana
Concerned Shrimpers of America
Gulf Coast Conservation Association
Gulf Intracoastal Canal Association
Lake Pontchartrain Basin Foundation
Louisiana Association of Soil and Water Conservation Districts
Louisiana Farm Bureau Federation, Inc.
Louisiana Landowners Association
Louisiana League of Women Voters
Louisiana Nature Conservancy
Louisiana Oyster Growers and Dealers Association
Louisiana Wildlife Federation, Inc.
Midcontinent Oil and Gas Association
New Orleans Steamship Association
Oil and Gas Task Force (Regional Economic Development Council)
Organization of Louisiana Fishermen
Police Jury Association of Louisiana
Ex Officio Member: U.S. Senator John Breaux

Even with its widespread membership, the Citizen Participation Group cannot represent all of the diverse interests involved in Louisiana's coastal wetlands loss problem. The CWPPRA public involvement program provided an opportunity for all interested parties to express their concerns and opinions and to submit their ideas concerning the problems facing Louisiana's wetlands.

The first step in the public involvement program for the general public consisted of two series of scoping meetings held by the Task Force in October and November 1991--one series for coastal zone parish officials and another series for the general public. The purpose of these scoping meetings was to identify wetland loss problems throughout the coastal zone and potential solutions to those problems. Literally hundreds of suggestions to combat the wetland loss problem were submitted to the Task Force through these scoping meetings. Exhibit 2 of the main report is a compendium of those proposals. All of the ideas presented in those meetings have been evaluated during the planning process; nearly all of them have been incorporated into the Restoration Plan. The schedule of scoping meetings was as follows.

Parish Scoping Meetings (for parish officials)

Date	Location	Parishes
October 8, 1991	Crowley, La.	Calcasieu, Cameron, Iberia, and Vermilion Parishes
October 16, 1991	New Orleans, La.	Jefferson, Orleans, Plaquemines, St. Bernard, and St. Charles Parishes
October 16, 1991	New Orleans, La.	Livingston, St. James, St. John the Baptist, St. Tammany, and Tangipahoa Parishes
October 17, 1991	Thibodaux, La.	Ascension, Assumption, Lafourche, St. Martin, St. Mary, and Terrebonne Parish

Public Scoping Meetings

Date	Location
October 21, 1991	Lake Charles, La.
October 22, 1991	Abbeville, La.
October 24, 1991	Houma, La.
October 28, 1991	Mandeville, La.
November 6, 1991	Belle Chasse, La.
November 7, 1991	New Orleans, La.

The October-November 1991 scoping meetings were the first stage in the process of plan formulation, the process by which the Task Force agencies identified coastal wetlands problems and developed solutions to those problems. The process continued with a series of basin plan formulation meetings, which began in February 1992 and ran through May 1992. These were not formal public meetings

Section 1. PUBLIC INVOLVEMENT PROGRAM SUMMARY

One of the earliest Task Force efforts at public participation was the establishment of the Citizen Participation Group (CPG) by the Task Force to coordinate the preparation of the 1st Priority Project List with the interested public. The stated purpose of the CPG is to maintain consistent public review and input into the plans and projects being considered by the Task Force and to assist and participate in the public involvement program. The CPG is composed of seventeen organizations that represent the interests of the environmental community, oil and gas industry, agriculture, commercial fishing, recreational fishing, navigation, landowners, and public advocacy groups, all of which are active in Louisiana. The CPG received detailed briefings on the first three priority project lists and on evaluation methods used to rank projects. Copies of draft priority project lists were provided to each member of the CPG for their review and comment. The CPG meets at its own discretion, but many times meets in conjunction with other CWPPRA committees and work groups. The membership of the CPG is shown below.

Membership of the Citizen Participation Group

Coalition to Restore Coastal Louisiana
Concerned Shrimpers of America
Gulf Coast Conservation Association
Gulf Intracoastal Canal Association
Lake Pontchartrain Basin Foundation
Louisiana Association of Soil and Water Conservation Districts
Louisiana Farm Bureau Federation, Inc.
Louisiana Landowners Association
Louisiana League of Women Voters
Louisiana Nature Conservancy
Louisiana Oyster Growers and Dealers Association
Louisiana Wildlife Federation, Inc.
Midcontinent Oil and Gas Association
New Orleans Steamship Association
Oil and Gas Task Force (Regional Economic Development Council)
Organization of Louisiana Fishermen
Police Jury Association of Louisiana
Ex Officio Member: U.S. Senator John Breaux

Even with its widespread membership, the Citizen Participation Group cannot represent all of the diverse interests involved in Louisiana's coastal wetlands loss problem. The CWPPRA public involvement program provided an opportunity for all interested parties to express their concerns and opinions and to submit their ideas concerning the problems facing Louisiana's wetlands.

public review of the conceptual basin plans. Public meetings were held as shown below.

Public Meetings for 2nd Priority Project List
and Conceptual Basin Restoration Plans

Date	Location	Hydrologic Basins
June 16, 1992	Morgan City, La.	Atchafalaya, Teche/Vermilion
June 18, 1992	Belle Chasse, La.	Barataria, Breton Sound, Mississippi River Delta
June 23, 1992	Houma	Terrebonne
June 25, 1992	Lake Charles	Mermentau, Calcasieu/Sabine
June 30, 1992	New Orleans	Pontchartrain

During the latter half of 1992 and the first half of 1993, the Task Force's efforts were focused primarily on integrating all of the information gathered through the planning and public comment process into a comprehensive Restoration Plan. The draft version of the Restoration Plan and accompanying EIS was distributed to the public in mid-July 1993 and the notice of EIS availability was published in the Federal Register on July 16, 1993. The Task Force held a series of public meetings in coastal Louisiana during July and August 1993. These meetings were designed to solicit comments from the public on candidate projects being evaluated for the 3rd Priority Project List and to present the draft Restoration Plan and specific plans for restoring each basin.

Public Meetings for the 3rd Priority Project List
and for Presentation of the Draft Restoration Plan

Date	Location	Hydrologic Basins
July 27,1993	Larose, La.	Barataria Basin
July 28, 1993	Belle Chasse, La.	Breton Sound and Mississippi River Delta Basins
July 29, 1993	New Orleans, La.	Pontchartrain Basin
August 9, 1993	Houma, La.	Terrebonne Basin
August 10, 1993	Morgan City, La.	Atchafalaya and Teche/Vermilion Basins
August 12, 1993	Cameron, La.	Mermentau and Calcasieu Basins

The'formal public hearing for comments on the EIS was held on August 11, 1993 at the New Orleans District office of the USACE. Written comments were presented by the EPA and Dr. Charles G. Groat, Ph.D. of Louisiana State University. Several others presented oral comments. The written comments are reproduced and responded to in Section 2. A summary of the public hearing is presented as Appendix A at the end of this document.

A new public outreach program will be initiated in early 1994. The program will, via newsletters, mailings, and regular press releases and conferences, notify the public of the status of priority list projects, the restoration plan, hearings, meetings, and the expenditure or commitment of restoration funds. Additionally, the Citizen Participation Group has recently been reconstituted so as to provide regular public input.

Section 2. COMMENTS AND RESPONSES

This section presents the written comments received on the draft Restoration Plan and accompanying Draft EIS that was distributed for public review in July 1993. The comments have been arranged in alphabetical order. Each of the Task Force agencies provided written comments that are reproduced here except for internal review comments of the USACE. The agencies provided comments on the various components of the report; the executive summary, the main report, the basin plans, and the EIS. Most of the comments provided by the Task Force agencies on the executive summary, main report, and basin plans are editorial in nature. These comments are reproduced in this report but responses to these comments are not provided. The Task Force agencies agreed that their comments on these sections of the report would be addressed by two working groups, made up mainly of Task Force agency representatives, that would cooperatively revise the documents. Responses to comments made by Task Force agencies that were specifically directed at the EIS are provided.

All of the comments received from others, regardless of what part of the draft document the comment referred to, are reproduced on the following pages. Each comment has been assigned a number for which there is a corresponding response.

The USACE, as lead Task Force agency, had the lead role in preparation of the EIS. A preliminary draft version of the Restoration Plan and EIS was distributed to the other.TaskForce agencies for their review and comment in April 1993. At that point it became apparent that there was considerable controversy among the agencies surrounding the treatment of marsh management as a type of project to protect, preserve, and restore coastal wetlands. The controversy isn't new. The USACE, through its Section 404 regulatory activities, has been balancing the marsh management issue for many years and is preparing a programmatic EIS for marsh management in coastal Louisiana. A considerable amount of the comments provided on the draft EIS by the Task Force agencies and others that follow are directed at marsh management. It should be apparent from the comments that some commenters want to emphasize the positive aspects of marsh management and downplay the negatives while others want just the opposite.

Our goal as author and coordinator of the EIS is to present an objective and unbiased discussion of the issues. Accordingly, we agreed to modify the text for the Final EIS when the facts, information, or suggestions conveyed in the comments enhanced the scientific quality, readability, or organization of the document. Many comments tended to champion one opinion or another or even requested different treatments of the same issue, especially in

A new public outreach program will be initiated in early 1994. The program will, via newsletters, mailings, and regular press releases and conferences, notify the public of the status of priority list projects, the restoration plan, hearings, meetings, and the expenditure or commitment of restoration funds. Additionally, the Citizen Participation Group has recently been reconstituted so as to provide regular public input.

ARIES 27 BUILDING & LANDSCAPING, INC.
Rt. 3 Box 220
Lacombe, LA 70445
(504) 882-7218
(504) 882-8870

Divisions: Life Garden Exterior Management Services • Creative Pavement Graphics • Outdoor Entertainment Centers

August 17, 1993

Mr. Richard Boe
EIS Coordinator
U. S. Army Engineer District, New Orleans
P. O. Box 60267
New Orleans, La. 70160-0267

Dear Mr. Boe,

Since a college student in the mid-1950's when I first took part in the effort to save King's Canyon in California from being dammed, to my involvement in establishing the Ecology Center of La. in 1970, and the Lacombe Environmental Action Project in 1983, to my present participation with the Lake Pontchartrain Basin Foundation and CoastWatch, I have been actively pressing for a change of attitude in the American psyche when it comes to environmental exploitation of resources contrary to conservationist philosophy. This is part of my spiritual training in Native Amerindian culture, as we believe that the harm we do the earth is intensified in the harm we do to ourselves.

From my studies, experience, and research as a naturalist, as an ordinary citizen of this much exploiated state, and as a knowledgeable observer of the condition of my particular area; after studying the Louisiana Coastal wetlands Restoration Plan being presented on August 30, I find it defioinet in manybasic and specific rap. It is a flawed plan.

1.1 I can see where it needs improvement. It lacks depth: in comprehensiveness, in ecotechnical detail, social, salinity, and sediment considerations, in addressing the needs of the people over structures, and many, many things pertinent to what I believe we are all aware needs to be accomplished.

What I would like to suggest is an extension of time beyond August 30, and the encouragement of more public participation from groups, and organizations and individuals who have something to contribute. Too frequently we are beseiged by large agencies, corporations, and bureaucracies in general who negate the vast amount of common sense contained within the common people, and therefore do not adequately incorporate into their agenda the concerns of the citizens of our nation.

Time and again we have seen muchballyhooed Corps projects become in reality dismal fallures--a shameful waste of much needed taxpayer dollars. In my area the MRGO and the Pearl River dredging are both a waste of
1.2 dollars much needed for our economy, and enormously detrimental to our local environment and economy. To offset the Salinity brought into the lake system by the MRGO the Plan calls for a Mississipi River freshwater diversion, which is not in itself a bad thing if it properly restores a more natural river-flood pattern to the lake-esturine ecosystem. It is the implementation that we object to. Fill in the ditch . That would help

1.2 Cont. loner. the salinity in the lakes sad help protect New Orleans from the disasterous hurricane driven watersurges as in Hurrican Betsy in 1965.

According to the map of 2040 A.D. my whole area will be washed off the face of the map. With that and what has aeady been done to us in coastal Louisiana, and what is presently happening to us now it is only reasonable and just that more input be Sought, more time be granted, and moreserious consideration be given to the ;needs of the people and not the needs of a bureaucracy. I know this is difficult, but it is necessary, not only if we as Americans are to survive as a people and a nation, but also as part of a greater ecosystem provided to us as tenders by a creator to sustain us and other species. If we fail in this quest, we fail as a species. In Louisiana our failure is Upon us. Can we not sustain and survive by using our intellectual capacity?

The Plan is flawed. Let us help the Corps redirect its infrastructure and financial and engineering capacity into more productive projets that are environment ally conpatible.

The Plan is fractured. Let us help draw it and its goals together So the project realitim relate to the vision. Let us provide informed input. Take advantage of the diverse Knwledge available to you all from the public.

In the space of one letter I hardly expect to be able to give you all which I am. I can only make known my reservation to the present Plan and expect that you and your peers will heed our request to be heard.

Thank you.

Sincerely,

Tom Aicklen

RESPONSE 1.1: The CWPPRA Task Force recognizes the value of public participation and has encouraged public participation throughout the planning process. Please refer to the Study Process section of the main report and Section 5.1 of the EIS for a detailed description of the public involvement process.

The Task Force is instituting a new public outreach program that will, via newsletters, mailings, and regular press releases and conferences, notify the public of the status of the restoration program, hearings, meetings, and the expenditure or commitment of restoration funds. Additionally, the Citizen Participation Group has been reconstituted so as to provide regular public input. Additional information about restoration contracts are available pursuant to state and Federal contracting laws and access to information laws.

RESPONSE 1.2: The MRGO is an economically viable channel. As described on page 10 of the Pontchartrain Basin appendix, the MRGO contributes 10,000 jobs to the State's economy even though extensive environmental damages have resulted from the project. As described on page 23 of the appendix, the most economical way to prevent further environmental degradation by the MRGO is through bank stabilization. At this time, the USACE is conducting a reconnaissance-level study of bank protection for the MRGO, unrelated to the CWPPRA.

Alliance of Concerned Citizens of Louisiana, Inc.

PO Box 68
Matthews, LA 70375
537-7546

August 30, 1993

Colonel Michael Diffley
District Engineer
P.O. Box 60267
New Orleans, Louisiana 70160

Dear Colonel Diffley:

The Alliance of Concerned Citizens of Louisiana, Inc., submits these objections and comments to the Draft Louisiana Coastal Wetlands Restoration Plan [hereinafter Restoration Plan] and Draft Environmental Impact Statement [hereinafter DEIS]. The DEIS as currently proposed is unacceptable for the following reasons:

I. THE CORPS NEEDS TO DRAFT TIMELY INDIVIDUAL BASIN EISs TO INSURE CONSIDERATION OF ALTERNATIVES

For NEPA to function according to its mandate, which is to have an impact in the decision making process, the EIS should be written by the "go-no-go" stage. Also, alternatives must be assessed and considered sufficiently before any commitment of resources. According to page 1 and 19 of the DEIS, because of the lack of available detail, each individual project is not discussed. Also, on page 1 and 20 of tho DEIS, the Corps notes that to fulfill the requirements of NEPA, each individual project will need a separate EIS. We submit that even if these individual projects received EISs, each individual basin would still need an EIS before the commitment of resources and before the projects can be selected.

To ensure that alternatives are fully considered early in the planning and selection process, the Corps should prepare an EIS as to each individual basin. The Corps stated that individual project EISs will be drafted in time to be part of the decision making process. The Corps must make basin EISs, as opposed to project EISs, part of the decision making process, in order to effectively evaluate alternative projects within each basin. Otherwise it is simply justifying its conclusions rather than assessing possible environmental impacts and selecting the best projects.

II. THE DEIS FAILS TO ADEQUATELY ASSESS THE POSSIBLE IMPACTS OF THE RESTORATION PLANS ON PUBLIC ACCESS

2.2 Public access to navigable waters is absolutely necessary

RESPONSE 2.1: At this time, we do not anticipate preparing an EIS for each coastal hydrologic basin. Large projects that will have an effect on major portions of one or more hydrologic basins will require EIS's. These EIS's will have to discuss other options for restoration of the basins and could, in effect, be considered basin-wide EIS's. For instance, one priority is to determine the sediment and freshwater budget of the Mississippi River below Old River and develop alternatives for the best use of this resource. An EIS that discloses the various alternatives and their impacts to the various basins will likely be necessary.

for the commercial fishing industry to survive. The DEIS fails to adequately assess the impact of the plan on access to those waters. The Restoration Plan addresses it in a single paragraph.[1] The DEIS considers it in a couple of paragraphs.[2] This simply and obviously inadequately studies the issue of access.

2.2 Cont.

According to the Louisiana Coastal Restoration Plan, several of these projects will cause accessibility problems because of the construction of levees and water-control structures. For example, because of projected water-control structures, the Calcasieu-Sabine Basin project will reduce access to marshlands.[3] This will have an effect on the fisheries industry. There are similar access issues with the Terrebonne Basin, the Mementau Basin and Teche/Vermilion Basin projects.[4] Also. Darts of the Barataria Basin Plan may interfere with navigation.[5]

2.3

The DEIS also notes that navigation and access will be obstructed in certain areas with the implementation of proposed projects or their alternatives. Access to hunting and fishing may be reduced by "outfall management."[7] In a broader sense, navigation would be hindered by all project types, with the exception of "hydro management of impoundments."[8]

2.4

If bodies of water to be effected by coastal restoration projects are navigable (i.e. are used for or are capable of being used for commerce), they are subject to a federal servitude in favor of public access. However, nowhere does the restoration plan or EIS seriously weigh the impact of restoration projects on these important navigational rights.

Because of the lack of serious discussion of the impediments to access, the Corps, also may have overlooked the issue of access to waters on private lands which become navigable through erosion. While private waters created on private land are not subject to the federal navigational servitude, the issue of whether waters which become navigable through erosion are subject to the servitude was not answered until recently. In Dardar v. Lafourche Realty, the Fifth Circuit noted that a body of water is "'naturally' navigable even though the erosion is caused by

2.5

[1] Restoration Plan, p. 47.

[2] DEIS, pp. 6-7, 10-11.

[3] Restoration Plan, 159.

[4] Restoration Plan, 148 and 138 respectively.

[5] Restoration Plan, 104.

[6] DEIS, 6-7.

[7] DEIS, 7.

[8] DEIS, 6-7.

RESPONSE 2.2: This comment deals with a very controversial and complex issue. We believe that Section 3.3.11. of the EIS adequately discusses the issue of public access by acknowledging that certain types of projects may impede public access to various degrees. In developing and implementing projects under the plan, all implicated rights, both private and public, will be taken into consideration and accommodated to the maximum extent practicable. Whether or not a particular project will violate public access or private property laws is a legal question that is beyond the scope of this EIS. The proper resolution of this issue will be on a project by project basis.

RESPONSE 2.3: We believe that we have adequately discussed the potential for proposed projects to reduce access under Sections 3.3.11. and 3.3.13. We have openly discussed the fact that many of the projects have the potential to affect navigation and public access. We aren't trying to hide this issue.

RESPONSE 2.4: We disagree that all project types, except for hydrologic restoration of impoundments would hinder navigation. Shoreline protection, terracing, barrier island restoration, and other projects types should not negatively affect navigation, except possibly during construction, and have the potential to benefit navigation by reducing sedimentation in navigable waterways.

2.5 Cont. increased water flow from connecting dredged canal." The proposed projects could be restricting access to these waters as well. Because it is impossible to ascertain whether the Corps has studied the ramifications of this issue, it should be studied and assessed in the EIS.

III. THE DEIS MUST INCLUDE A REALISTIC APPRAISAL OF MARSH MANAGEMENT AND ITS IUPACTS ON THE ENTIRE COASTAL ECOSYSTEM

The Louisiana Coastal Wetlands Restoration Plan is a direct response to the continual loss of over 30 square miles of Louisiana's coastal wetlands per year. It is clear, however, that Louisiana's wetlands are disappearing not simply as a result of physical factors, but also because of poor public policy. For years, permits have been issued for activities in the coastal zone that directly cause substantial wetlands loss, such as canals for oil and gas production and residential development. Government agencies have also historically ignored the devastating affects of navigation and flood control projects. 2.6 This DEIS appears to continue this posture in regards to marsh management activities.

Marsh management is the most controversial element of the Louisiana Coastal Wetlands Restoration Plan. However, the DEIS represents marsh management as a scientifically established technique to prevent wetlands loss when, in fact, recent studies have indicated that marsh management may actually accelerate marsh loss by preventing the influx of sediments and nutrients and by contributing to the accumulation of toxins in waterlogged soils.

The most significant study of the effectiveness of structural marsh management on reducing wetland loss in coastal Louisiana was performed by Cahoon and Groat (1990).[9] In their analysis, the authors evaluated land lose patterns of 16 managed and control marshes. The authors reported that 12 managed and 15 unmanaged control areas experienced marsh loss and that the 2.7 average loss rate was slightly higher for managed areas. Other recent studies of marsh management projects in Louisiana have also reported greater marsh loss rates in managed versus unmanaged marshes. However, the DEIS ignores the results of these studies and relies instead on the results of a 7 year old study of South Carolina marshes in order to promote marsh management as an effective technology.

Of the numerous effects that marsh management plans are known to have on marsh ecosystems, the severe adverse impacts to 2.8 valuable marine resources is the least disputed. It is estimated that the productive capacity of managed marshes is reduced up to 501 when compared to natural ecosystems. Although variable crest

[9] Cahoon, D.R. and C.G. Groat (eds.) . 1990. Astudy of marsh management practices in coastal Louisiana, Volume 1, Executive Summary. Final report submitted to Uinerals Management Service, New Orleans, LA. Contract No. 14-12-0001-30410. OCS Study/MMS 90-0075.

RESPONSE 2.5: In Section 3.3.11.3. we state that the legal definition of navigable waters must be addressed for individual projects to determine whether blocking or restricting access through waterways would unlawfully restrict public access. In other words, we are disclosing that some proposed projects would restrict access into managed areas and that we will have to determine, on a case-by-case basis whether the restrictions are legal or not. If public access were to be illegally restricted, the project would likely not be built, or it may be redesigned to reduce or eliminate the restriction.

RESPONSE 2.6: The plan acknowledges that restoration activity will have to be based on real world conditions, which include taking cognizance of activities and projects undertaken outside of CWPPRA. These factors will be addressed to some extent in the Conservation Plan called for by CWPPRA, but will also need to be the subject of periodic review.

We have strived to present the facts about marsh management in an unbiased manner. We have substantially revised most sections that describe the effects of marsh management so that they are more concise, while not leaving out any important information.

RESPONSE 2.7: Cahoon and Groat (1990), as well as several papers contained within that document, are cited in the EIS. The study you are referencing is Sweeney et al. (1990) which is contained in the Cahoon and Groat study. Citation from this study has been incorporated into the EIS.

2.8 Cont. weirs, flap-gated culverts, and rock weirs may have fewer detrimental effects on fisheries, the most prominent researchers on this topic have concluded: "At this time, however, we think that any type of water control structure will reduce fisheries production in the area behind it to some extent."[10]

Recent experience has also demonstrated that these projects work to exclude local users from traditional fishing and subsistence habitat. The excluded citizens are composed largely of rural poor Louisianans of Native American or Acadian descent who are largely unrepresented in marsh management decisionmaking. 2.9 The task force apparently considers this denial of access a beneficial aspect of marsh management as the DEIS reports on page EIS-6 that *Landowners would gain increased control over public access.* as an effect of marsh management and hydrologic restoration.

The Corps was preparing a Programmatic CIS for marsh management in coastal Louisiana to evaluate the issues and impacts associated with marsh management. Work on this PEIS has been suspended since October, 1992. Although this project was put on hold ostensibly "due to lack of funds", the timing is fortuitous in view of the completely inadequate review that marsh 2.10 management has received in the current DEIS. Over 25% of the individual projects in the Louisiana Coastal Wetlands Restoration Plan involve some form of marsh management or hydrologic restoration. It is, therefore, imperative that the DEIS contain a realistic evaluation of marsh management which incorporates a review of all available information, not simply the selective material which supports this controversial technology.

Sincerely,

Michael Robichaux, M.D. (BRW)

Michael Robichaux, M.D.
President
Bradley Oubre
Vice-president

[10] Herke, W.H., E.E. Knudsen, P.A. Knudsen, and B.D.Rogers. 1992. Effects of semi-impoundment of Louisiana marsh on fish and crustacean nursery use and export. North American Journal of Fisheries Management. 12:151-160.

RESPONSE 2.8: We acknowledge the citation. We are including this information under Section 3.3.6.3 where the effect had been suggested.

RESPONSE 2.9: The quote from the EIS referred to in your comment was not meant to suggest either a beneficial or adverse impact, but rather a neutral statement about a effect. The statement may be viewed by landowners as a beneficial effect, whereas the general public may view it as a negative effect. Nevertheless, the statement has been reworded.

RESPONSE 2.10: This EIS is not meant to be a substitute for the marsh management EIS. The marsh management EIS will be a very detailed, comprehensive document that will fully disclose all of information available on marsh management. Work on the marsh management EIS was suspended due to insufficient funding through the USACE regulatory program but has been recently been re-initiated with funding provided by the EPA.

This CWPPRA EIS gives the reader a general overview of the probable beneficial and adverse consequences of the various project types. Although treatment of issues is necessarily brief in this EIS, we have not intentionally left out information concerning the adverse impacts of marsh management.

Coastal Wetlands Planning, Protection and Restoration Act
&
Coalition to Restore Coastal Louisiana

August 9, 1993

Municipal Auditorium
800 Verret Street
Houma, LA 70360

Dear Sin:

I would like to submit the following suggestions) the it: nd federal agencies involved in the t Bill" projects ii la d fc the protection of our wetlands.

I) There should be a listing of all of the scientists involved in the planning of these projects along with their qualifications and their experiences.

3.1 2) There should also be a listing of all of the engineering firms. consultants and construction companies bidding of any type of work. The qualifications and experience of each of these companies should be included.

3) All bid specifications should be published in newspapers of the basins affected before any work is started.

3.2 4) A prohibition of any mariculture or entrapment of marine life in a basin which was enhanced by these projects should be expressly prohibited. Grant free access to these projects where there was tidal flow in these basins prior to the projects. Planning of these projects should have as a priority the protection of the commercial fishing industry and the avoidance of public funds being used to establish mariculture type operations.

3.3 5) All expenditures of public money should be outlined and itemized. The mount of money appropriated for each basin along with an itemized listing of engineering fees, consulting fees, administrative costs etc. should be included.

3.4 Having lived in coastal Louisiana dl of my life and having closely followed previous wetlands projects, it is quite obvious that much of the taxpayers money being spent is dedicated to projects of questionable merit and the work is being performed by the friends and families of our elected officials. These activities must cease. Public access to the cost of these projects and to the names of the contractors, consultants, engineers and scientists involved in these matters would be a great boost to the confidence of the public and will greatly enhance public support for these efforts. This information would be easy to compile and should be readily available to anyone wishing to study this issue. Information for each basin and for each project should be provided in a format which is easy to read and understand.

Sincerely yours,

Van Boquet

FORM LETTERS IDENTICAL TO THE ONE DISPLAYED WERE RECEIVED FROM THE FOLLOWING INDIVIDUALS:

Jacob M. Adams	Chris Normand
Patrick J. Adams	Dawn Normand
Terry Adams	Donald Normand
Shawn F. Augruy	Marie Normand
Clint Bascle	Melanie Normand
Van Bouquet	Timothy Normand
Jerry Bourg	Chad Pinell
Easton Fanguy	Cody Pinell
Merle Guidry	David J. Rhodes
Paul Roaul Guidry	Gary Rodrigue
Ervin Lebect	Gilbert J. Talbot, Sr.
Chris A. Ledet	James N. Talbot
Charles Ledet	Annabell Trosclair
Mark Ledet	Charlotte Trosclair
Tammy Ledet	Floyd J. Trosclair
Victoria Ledet	Ken Trosclair
Donald Naquin, Jr.	Kirk Trosclair
Angie Normand	Rayneld Trosclair

RESPONSE 3.1: The Task Force is instituting a new public outreach program that will, via newsletters, mailings, and regular press releases and conferences, notify the public of the status of the restoration program, hearings, meetings, and the expenditure or commitment of restoration funds. Additionally, the Citizen Participation Group has been reconstituted so as to provide regular public input. Additional information about restoration contracts are available pursuant to state and Federal contracting laws and access to information laws.

RESPONSE 3.2: The plan does not, and will not, contain mariculture projects.

RESPONSE 3.3: The amount of money that the proposed short-term projects in each basin would cost is contained in the Plan Implementation section of each basin report.

RESPONSE 3.4: Please see Response 3.1 above.

Robert H. Chabreck, Ph.D.
1821 Cloverdale Avenue
Baton Rouge, Louisiana 70808
(504) 387-1222

OMR 8/31/93

August 30, 1993

Mr. Oscar Rowe
CELMN-PD-FE
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Rowe:

1 am commenting on the Louisiana Coastal Wetlands Restoration Plan on behalf of Continental Land & Fur Co., Inc. Continental Land b Fur Co., Inc. has considerable marshland holdings in the upper Penchant subbasin of the Terrebonne Basin and recognizes the need for projects to restore and maintain marshes as proposed in the plan. However, we have concerns about certain aspects of the plan.

4.1 The Overview of the Basin Strategy proposes large-scale use of sediment and freshwater to create new marsh and maintain existing emergent wetlands; and at the same time, it proposes a reduction of water levels in the Penchant and other subbasins. The major source of sediment and freshwater for wetland creation and maintenance is the Atchafalaya River. Also, much wetland loss in the upper Penchant subbasin is caused by excessive flooding of marshes by water from the Atchafalaya River. As you can see, the solutions to some problems are often in conflict. In the upper portion of the Penchant subbasin, excessive flooding from the Atchafalaya River can be corrected by reducing the amount of river water allowed to enter the subbasin. On the other hand, large-scale introduction of river water is necessary to create and maintain wetlands in the lower portion of the basin.

As described in the Terrebonne Basin Plan (Appendix E, Figure 2), the upper Penchant subbasin is an area with heavy marsh loss, and the remaining marshes are severely stressed from years of excessive flooding. Therefore, precautions must be taken to prevent further flooding of marshes. Diversion of freshwater and sediment through the upper portion of the Penchant subbasin to restore areas farther south in the Penchant and Timbalier subbasins would cause severe flooding in the upper subbasin. For example, Project PTE-5 would require diversion of water from the Atchafalaya River through Bayou Penchant and the GIWW to nourish marshes considerable distances away. The

4.1 Cont. gradient required to move water such distances by gravity flow would result in deep and prolonged flooding of marshes in upper Penchant subbasin. In addition, projects such as XTE-64 could result in the release of surplus water in marshes currently stressed by excessive flooding.

4.2 Projects in the adjacent Atchafalaya Basin may also magnify the flooding problem in the upper Penchant subbasin, where lands of Continental Land & Fur Co., Inc. are located. Project XAT-9 would divert additional amounts of Mississippi River water down the Atchafalaya River, and projects such as XAT-6 and XAT-88 would raise flood stages in the Atchafalaya Basin Floodway System. These projects would increase the frequency and duration of high water and marsh loss in the Terrebonne Basin, especially in the upper Penchant subbasin.

4.3 Bank erosion alonq the GIWW and Bayous Chene, Boeuf, and Black causes breakthroughs of the banks and washouts of adjacent marsh. Projects that re-establish and reinforce the banks and restore marsh such as XTE-38 and PTE-13 should receive high priority.

Continental Land b Fur Co., Inc. strongly supports the Louisiana Coastal Wetlands Restoration Plan but urges caution in the areas described. If we can provide further information, please advise.

Sincerely,

Robert H. Chabreck, Ph.D.
Wetland Consultant

RHC/mc

cc: Mr. George Strain
Mr. Herman Crawford

RESPONSE 4.1: In the presentation of Strategy 5 on page 20 of the Terrebonne Basin Appendix, it is clearly stated that excess water levels are already a problem, and that wetland/water management in the Penchant Subbasin (Strategy 1) and flooding in the Verret Subbasin (Strategy 8) must be done first (see Strategies Considered on page 15 of the appendix). Statements regarding this problem were augmented in corresponding project descriptions for projects XTE-64 and PTE-5.

Also, the descriptions of all projects that would increase the frequency and duration of flooding in the area east of the Atchafalaya Basin Floodway, that includes the upper Penchant Subbasin, include a discussion of potential flooding problems under Issues. Project XAT-6, by itself, and implemented only once, will not have an adverse impact on water levels in the Terrebonne Basin because of its small scope. However, projects that increase delta growth cumulatively will raise project flood stages and increase the frequency and duration of high water in the Terrebonne Basin.

RESPONSE 4.2: A sentence stating this was added to the Penchant Subbasin section of Problem Identification (page 10 of the Terrebonne Basin appendix).

RESPONSE 4.3: Project XTE-38 is a short-term supporting project because, while is does not directly address the key strategies in the basin, it is considered to be an important local problem (responding to Strategy 4); project PTE-13 was designated as long-term supporting because of the planning required to coordinate it with project PTE-26.

Robert H. Chabreck, Ph.D.
1821 Cloverdale Avenue
Baton Rouge, Louisiana 70808
(504) 387-1222

August 25, 1993

Mr. Oscar Rowe
CELMN-PD-FE
P. O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Rower

Thank you for the opportunity to comment on the preliminary draft of the Louisiana Coastal Wetlands Restoration Plan. I am the Scientific Advisory Panel member selected to review thr Mermentau Basin Plan. I hare worked in the Mermentau Basin far 35 years and an very familiar with thr problemc and ernlogiral processes that operate in thr basin. Therefore, I will limit my comments to the Mermentau Basin Plan.

4a.1 As an intraduction to thr plan. specific objectives of the plan should be presented. Each project propocmd should describe how it will help accomplish an objective. Saving the coast, preventing coastal erosion, etc. are not considered as specific objectives. Tho objectives should include restoration and maintcnrnce of emergent plant communities as they occurred in 1949 (O'Neil Map) or 1968 (Chabreck et al. Map).

4a.2 Many problems in the Mermentau Basin, as described in the plan such as shoreline erosion and excessive flooding of marshes in the Lakes subbasin, arc caused by the excessively high water held in the Lakes Subbasin. Water levels are held at 2.0 feet MLG for irrigation and navigation (although navigation war not mentioned in the plan). The plan should propose, as an alternative to the proposed development, lowering water levels in the basin to 1.0 foot MLG. This would eliminate the nerd for many of the projects proposed in the plan.

4a.3 The Mermentau Basin Plan primarily involves naintenancm. Most maintenance uork proposed is associated with shoreline erosion along thm GIWW, Freshwater Bayou Canal, and the Gulf of Mexico. Little restoration and management arm proposed. If the lowering of lake levels is not acceptable, then I suggest that three management units be developed that will protect marshes south of the lakes from excessive flooding and allow for manipulation of water levels to produce desired plant communities. The management units would be located in a central band across the basin and would be designated as the South Lake Misere Unit, South Grand Lakm Unit, and East White Lakm Unit.

RESPONSE 4a.l: This is a good recommendation and the basin plan has been revised so that each project has been fully described to include how it works to help restore, protect, and enhance coastal wetlands in the basin. Plans to restore emergent marsh to the conditions of 1949 and 1968, have not been included, but the projects' effects on emergent marshes are included in each project description.

RESPONSE 4a.2: The plan recognizes the problem of high water levels (> 2.0 Mean Low Gulf) in the Lakes Subbasin. The plan includes, as a basin strategy, many projects which will lower water levels in this subbasin while bringing fresh water into the Chenier Subbasin. These projects include operation of the existing locks and the installation of structures under Highway 82. Much of the time, the desired elevation of 2.0 feet Mean Low Gulf cannot be maintained. It would be virtually impossible to lower water levels to 1.0 Mean Low Gulf.

Development of the units would require construction of levees, locks, and other watrr control structures to separate the units from the GIWW, Grand Lake, and White Lake.

Water control structures on the south side of the management units would allow wafer levels within the units to br controlled independently of water levels in Grand Lake and White Lake. Also, rater Control structures an tho north side of the management units would allow water to be added to the management units rhmn needed from Grand Lake and White Lake. Locks to allow barge traffic would be constructed in the Superior Canal on the south side of Brand Lake and in other locations where needed. Subdividing the Lakes Subbasin would facilitate water level control in Grand and White Lakes using existing structures. Water could be drained from the south side of the management units as needed to nourish the Hog Bayou, Rockefeller Refuge, and South Pecan Island marshes.

4a.3 Cont.

The South Misere Unit would lie between the GIWW and Little Chenier and tram Highway 27 eastward to Grand Lake and the Mermentau River. The South Grand Lake Unit would lie betwmmn Grand Lake and Grand Chenier or other management units north of the chenier. It would extend from the Mermentau River eastward to Old Intracoastal Canal and Mite Lake. The East White Lake Unit would extend from the Old Intracoastal and Schooner Bayou southward to Pecan Island Canal and from White Lake eastward to Freshwater Bayou Canal.

With completion of these management units and units currently in place on Lacassine NWR, Cameron Prairie NWR, Coastal Club, Amoco, Vermilion Corp., and Rockefeller Refuge, most of the Mermentau Basin will be under a system of water control that will enhance plant growth and secure the quality of the area for many years.

This presents only a general conceptual sketch of what is needed in the Mermentau Basin. If I can provide additional informatian, please let me know.

Sincerely,

Robert H. Chabreck, Ph.D.
Wetland Ecologist

RHC/mc

cc: Dr. Robert R. Twilley
Mr. Joe Conti
Mr. Lee Wilson

RESPONSE 4a.3: We acknowledge that active management in the Lakes Subbasin would assist in lowering water levels in the managed areas. The basin plan does have some management projects in the Lakes Subbasin, but none of the magnitude that you suggest. There are management projects planned for the Sawmill Canal and Humble Canal areas east and west of the Mermentau River in the area of Little Pecan Bayou. Few management projects are planed for other areas of the Lakes Subbasin. This is because the subbasin is protected from saltwater intrusion and tidal scour by the existing lock system. We acknowledge that management projects would be helpful in reducing water levels in selected areas, but generally this would involve levees or overflow banks and many structures to allow active management. Much of the suggested the East White Lake unit is presently managed by the Vermilion Corporation. It was decided by the basin group to concentrate on the existing locks and the freshwater structures at Highway 82 to remedy the high water level situation rather than construct many management units. The Superior Canal Lock (or gate) Project would be a good project to add to the plan and can be added at a later date. Insufficient information precluded its addition at this time.

Coalition to Restore Coastal Louisiana

8841 Highland Road. Suite C • Baton Rouge, LA 70808 • 504 1766-0195 • Fax 504 / 766-0229

August 30, 1993 VIA FAX AND MAIL

Col. Michael Diffley, District Engineer
V.S. Army Engineer District, New Orleans
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Louisiana Coastal Wetlands Restoration Plan, Draft Programmatic Environmental Impact Statement

Dear Col. Diffley:

The Coalition to Restore Coastal Louisiana, a coalition of individuals, public bodies, and more than 120 groups, is a not-for-profit organization dedicated to the restoration and preservation of Louisiana's coastal resources. We have reviewed the draft environmental impact statement covering the draft comprehensive Louisiana coastal wetlands restoration plan and have prepared these comments concerning it.

Before getting into our comments we would like to commend the CWPPRA task force for the seriousness and enthusiasm with which it has gone about drafting the comprehensive plan. The task it was charged with was enormous as were (and are) the pressures to accommodate competing interests and viewpoints. In such a situation it is probably impossible to please everyone but we have been impressed by the determination of the task force to take the long view and honestly face the problems facing coastal Louisiana. If we are ever to succeed at restoring our coastal resources to a sustainable condition it is essential for the task force to maintain that perspective and remain open to new ideas and public input.

COMMENTS ON THE GENERAL STRATEGY AND EIS

5.1 a. We would like to begin by stating that we are basically pleased by the basic statements of the problem (pages 13-24), the value of coastal wetlands (pages 25-31). and the solutions to wetland loss (pages 33-51). These sections set forth and justify a comprehensive strategy for restoring Louisiana's coast that can guide future efforts to develop, prioritize, and implement restoration projects. It is essential that the vision or overarching strategy articulated in those sections be clearly

stated to be the touchstones for the comprehensive restoration plans. Unless that is done the plan could degenerate into a mere compilation of basin plans which, although fundamentally sound in themselves, do not necessarily fit together or move effectively toward the goal of reestablishing sustainability to our coast. Accordingly, we urge that the final plan and EIS clearly state that the basin plans are to be construed to the extent possible in a manner consistent with the broader strategy set forth in the main report, and should that not be possible then the task force will at that time review the basin plans to see what changes may be necessary to bring them into harmony with that strategy. In the end we are confident that this will ensure the coherency of the plan and avoid the need for unnecessary, ad hoc changes to the plan.

5.1 Cont.

b. The plan, as one might expect, suffers from a certain lack of clarity and definiteness due to the need for additional modeling, feasibility work, and demonstration projects. The plan should clearly recognize this need and provide for meeting it. Specific attention should to be given to hydrologic modelling and demonstration projects that can pave they way for developing innovative, more cost effective restoration techniques (e.g. for barrier islands) and to feasibility studies that are prerequisites to such large scale projects as the Breton Sound diversion.

5.2

c. The portions of the plan and the EIS dealing with marsh management are a bit perplexing. Although much time is devoted to discussing marsh management, little is actually said about how the proposed projects would effect the environment of coastal Louisiana. Undoubtedly, this is in part due to the controversial nature of marsh management activities, especially in the context of wetlands.restoration. The EIS needs to more directly acknowledge and discuss the substantial body of opinion that marsh management is not an effective tool for restoring or preserving marsh. Additionally, it needs to be made clear that any marsh management style projects pursued under the plan will be designed and operated so as tb provide the widest range of benefits and to afford access by marine species and by the public where such access would characteristic of a natural regime.

5.3

The EIS must also address the fact that little is known about the cumulative and indirect impacts marsh management projects will have on coastal wetlands. These issues were to have been explored by the Corps of Engineers in a programmatic EIS on marsh management, which as yet remains unfinished. The appropriate nature and role of marsh management in coastal restoration may turn on the results of that marsh management EIS and the plan needs to reflect a more cautious approach toward the implementation of marsh management projects. It is possible that some marsh management projects might be appropriate demonstration project candidates that could serve as a basis for better evaluating the appropriate role of marsh management in the restoration effort.

5.4

5.5 d. The EIS does not adequately distinguish among, or

RESPONSE 5.1: Considerable effort has been expended by the Task Force agencies and others, including the Coalition, to revise both the basin plans and the problems and solutions sections of the main report. The report now forms a truly comprehensive plan for restoring coastal Louisiana. The plan includes short-term strategies to try and keep the wetlands that we have and long-term strategies to build new wetlands. All of the plans for basins in the Deltaic Plain recommend strategies to make better use of fresh water and sediments from the Mississippi and Atchafalaya Rivers. Barrier island restoration is a major short-term component of the plans for the Barataria and Terrebonne Basins and a long-term component of the plans for the Pontchartrain and Breton Sound Basins. Restoration opportunities in the Chenier Plain are mainly hydrologic restoration, shoreline protection, and marsh creation using dredged material, with a freshwater diversion component. A possible future strategy for the Mermentau Basin is the utilization of the coastal mud stream to nourish interior wetlands.

RESPONSE 5.2: The plan has been greatly clarified since the draft version. Nearly every basin has demonstration projects that will provide answers necessary for coastal restoration either in that specific basin or across the coast. The results of hydrologic modeling will be used whenever appropriate. The State has recently provided the Task Force with a list of suggestions for feasibility studies. The Task Force will act on this request early in 1994.

RESPONSE 5.3: In the EIS, we have tried our best to present an unbiased presentation of the effects of marsh management. When viewing the numerous comments received on treatment of marsh management in the EIS, it becomes very obvious that there is a wide range of opinions among agencies, and even in the scientific community, concerning this type of project. The suggestions contained in the last sentence of your comment have been incorporated into the EIS in Section 3.3.11.4.

RESPONSE 5.4: Any marsh management projects implemented under the CWPPRA will be intensively monitored, as will all other projects. No new technologies or techniques for marsh management have been proposed for the CWPPRA, therefore it would be inappropriate to classify marsh management projects as demonstrations. Marsh management projects comprise about 6.5 percent of the projects proposed in the Restoration Plan. It is highly unlikely that marsh management, as we know it today, will play a major role in coastal wetland restoration. However, it is believed that marsh management may play an important role in areas that are far removed from sediment or freshwater sources where options for restoration are very limited.

establish linkages between. estuarine dependent species, resident species, and marine transient species when assessing the effects of various restoration techniques. This is especially true in the case of the effects of passive and active management on fisheries. For example, on page EIS-67, the EIS states that the maintenance of Phase 2 water levels will effectively block 'the few migratory estuarine-dependent fishery species" from entering or exiting the managed area. The term "few" is wholly subjective and is at odds with the views of a number of authorities that indicate that many marine transients will be adversely effected (Herke and Rogers 1985). Additionally, the EIS's conclusion that passive management will likely result in improved habitat conditions for resident fish species (EIS-28) is debatable. The enhanced populations of those species can also be attributed to the exclusion of marine transient species that would otherwise feed on them. In sum, the fisheries impacts of marsh management need closer attention.

5.5 Cont.

e. The EIS does not adequately consider the effects of the 'plan in the context of coastal activities that are conducted outside the plan. Specifically, without recognizing that dredge and fill activities continue to take place in the coastal zone and that there will be pressure for private marsh management projects it will be impossible to assess the impact or effect of the restoration efforts envisioned by the plan. The regulatory program must be harmonized with the restoration program to the greatest extent possible to maximize the chances of returning our coastal wetlands to a sustainable condition.

5.6

f. Although the plan contemplates extensive sediment diversions, nowhere does the EIS address the issue of possible sediment contamination. This should be rectified in the final EIS.

5.7

g. The EIS devotes considerable attention to the need to accommodate the rights and wishes of landowners in the design and implementation of restoration projects. That is appropriate. We do not, however, believe adequate attention has been paid to the rights the public may have to access coastal resources. The plan needs to specifically take cognizance of those rights and protect them to the maximum extent possible in the course of designing and implementing projects. Simply put, no CWPPRA project should have the effect of denying the public access to an area to which they previously had a right to go absent a compelling reason. Similarly, no CWPPRA project should prevent or significantly impair the migration of fish or wildlife without a compelling reason. These are public rights and resources that should not be compromised, especiallywith public funds. Nothing in this comment should be construed to suggest that the CWPPRA process should (or could) be used to create or expand public rights.

5.8

h. Pages EIS-22 and 23 identify a number of ongoing planning and/or restoration efforts that the CWPPRA plan takes cognizance of. Missing from this list is the comprehensive plan for the Pontchartrain Basin prepared by the Lake Pontchartrain Basin Foundation pursuant to an agreement with EPA. The plan needs to

5.9

RESPONSE 5.5: All discussions concerning marsh management have been substantially altered to be more concise and to the point. We believe that the revised text addresses your main concern.

RESPONSE 5.6: The plan acknowledges that restoration efforts will have to be based on real world conditions, which would include taking cognizance of activities and projects undertaken outside of CWPPRA. These factors will be addressed to some extent in the Conservation Plan called for by the CWPPRA, but will also need to be the subject of periodic review.

RESPONSE 5.7: We are not aware of any information that suggests that sediment in the Atchafalaya or Mississippi Rivers is contaminated to the point which would negatively affect coastal wetlands. At this time, there is no reason to believe that there are any problems with riverine sediments that would affect their use as a restoration resource as conceived by the plan. Sediment testing will be conducted, where relevant, as an integral component of individual projects.

RESPONSE 5.8: Any project that would effectively exclude the public from areas that they have the right to enter would be illegal and would obviously not be implemented. As for fish and wildlife access, the only compelling reason that their access would be impaired would be for the creation, restoration, protection, or enhancement of coastal wetlands, which is the thrust of the CWPPRA. Please refer to Section 3.3.11.1. of the EIS where additional information on public access has been added.

5.9 Cont. consider the findings and recommendations of that comprehensive plan in the drafting of the CWPPRA plan for the Pontchartrain Basin and when evaluating the likely effects of the CWPPRA plan.

BASIN PLAN COMMENTS

5.10 Because of our understanding that the individual basin plans will ultimately be construed and implemented in a manner consistent with the general vision and strategy set forth in the main body of the plan, we have not attempted to evaluate those plans as free standing strategies. At this point, the basin plans represent a very valuable assessment of the range of projects that might be currently appropriate and doable to address the problems in their respective basins. They do not, and as we appreciate it were not intended to, reflect what will necessarily go into the field in years hence. Accordingly, we will not offer specific comments on the basin plans beyond those which we have previously offered. To that end we are attaching and incorporating herein the comments made in our letters of April 8, 1993 and July 29, 1993 pertaining to the Calcasieu-Sabine and Pontchartrain basins respectively.

Respectfully submitted,

Mark Davis
Executive Director

cc: Louisiana Congressional Delegation
Len Bahr

RESPONSE 5.9: The EPA-sponsored comprehensive plan for the Pontchartrain Basin is discussed on page 2 of the Pontchartrain Basin appendix.

RESPONSE 5.10: We agree that many of the basin projects represent viable projects which solve basin problems. These projects are presented in concept form and many will be revised a great deal prior to implementation. Not all, but many of the basin projects will probably be implemented in the future to address basin problems.

This comment also references two letters written by the commenter. One letter, sent to Mr. Bruce Baird, US Army Corps of Engineers, contained the commenter's response to an Environmental Assessment prepared to update the EIS for the Bonnet Carré Freshwater Diversion project in the Pontchartrain Basin. The proper format for discussion of that letter is within the context of that project and therefore will not be addressed here. It is presented here for information purposes only. The other letter was addressed to Mr. Edward W. Hickey, USDA, Soil Conservation Service, who is the basin captain of the Calcasieu/Sabine Basin. The letter offers suggestions for improvement of the Calcasieu/Sabine Basin plan. Responses to that letter are presented as follows.

Coalition to Restore Coastal Louisiana
8841 Highland Road, Suite C • Baton Rouge. LA 70808 • 504 / 766-0195 • Fax 504 / 766-0229

April 8, 1993

Mr. Edward W. Hickey.
Water Resources Planning Staff Leader
USDA Soil Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

Dear Ed:

I have had a chance to look through the February draft of the Calcasieu-Sabine Basin Report and am prepared to offer some recommendations which may or may not be appropriate for discussion at the April 15 meeting. The Science Advisors program is somewhat in flux right now but I appreciate your keeping me posted and will try to become more involved in the future.

Comments

p. 2, Introduction, Soils:
A subtle observation regarding the cheniere ridges. My understanding is that the ridges are products of shoreline retreat that took place when significant mud inputs to the nearshore marine environment did not occur. Sand and shell berms and dunes developed along mainland beaches, spits and perhaps detached barriers when a clear water coastal system prevailed similar to those along the Misslssippi Coast. These coarse materials undoubtedly did act to stabilize the shoreline once they accumulated in sizeable berms. Currently, mud reaching the Chenier Plain coast covers nearshore sands and prevents clear water shell forming gastropods and molluscs from contributing much coarse material to the beaches. On the eastern part of the Chenier Plain coast, enough mud is depositing to provide some stabilization of shoreline retreat, but in the west, it is merely inhibiting beach formation without providing stabilization. The second condition is conducive to the rapid shoreline retreat that has historically prevailed in this area.

The area stabilized by permanent nearshore mud deposits from the Atchafalaya Is currently spreading from east to west at about 0.5 mile per year. If this pace continues, It can be speculated that the Gulf shoreline of the Calcasieu/Sabine basin will begin to see permanent mud accumulations and shoreline stabilization in about 100 years.

p. 4, Introduction, Geology:
Subsidence is an active process in the Calcasieu-Sabine basin that puts stress on marsh vegetation. Tide gage data from the area indicates an apparent sea level rise rate of about 0.7 cm/year. If about 0.2 cm/yr is due to the rising of the Gulf, local compaction, dewatering of the Holocene and, perhaps, fluid withdrawal from deeper deposits must be causing a subsidence rate of about 0.5 cm/yr. This is not inconsequential as it would amount to nearly 20 inches in a century. I am sure you have more and better numbers, but I think they deserve some discussion because they provide a good way to Unk the geology wlth the vegetation and soil forming processes that, in turn, affect the potential for land loss.

p. 6. Problem Identification, Existing Conditions:
I think that some discussion of the unique land loss history in the Calcasieu/Sabine basin would be useful here. I include some curves developed from the Dunbar et al. (1992) database that has now been aggregated by basin. They show average annual land loss rates increasing from a few hundred acres per year in the period between the early 1930's and 1955 (before Audrey) to more than 5,000 per year in the 1960's, then dropping to current rates of about 500 per year. Current rates are not much greater than the 1930's background.

More than 82 percent of all documented loss in the Calcasieu/Sabine Basin, over 100,000 acres, occurred in the 19 years between 1955 and 1974. It seems likely to me that this sudden destruction can be attributed largely to the linked effects of the navigation channels and Hurricane Audrey. In other words, the channels opened up the system to and aggravated the effects of the flooding caused by Audrey. Similar impacts were not observed in the Mermentau Basin, which also received much of the same storm surge.

From a planning standpoint, then, It seems appropriate to very clearly identify the primary coastal restoration goals in the basin to be, first, mitigation for the negative effects of the hydraulic regime

imposed by the navigation projects, followed, second, by an active revegetation program. The discussion on page 7 lays out the history, and on the top of page 8 you appear to arrive at the same conclusion, but without the numbers, the main point seems to be somewhat obscured in the details.

Also, it seems appropriate to mention something about the industrial development that has taken place in the basin, some of which has occurred on reclaimed marshes.

Finally, as we have discussed earlier, it is important to indicate clearly that coastal restoration efforts are well advanced in the basin, that much investment has already been made, particularly with respect to the Cameron-Creole project and the shoreline stabilization along the coast. If at all possible, it would be helpful to indicate how well these efforts are working. From the standpoint of advocating later the alternative you do, it would be useful for you to attribute to these efforts as much credit as is possible for the observed lowering of the land loss rate.

p. 8, Coastal Wetland Problems, Section (4):
Shoreline retreat information is available and might be useful here. In some places, this shoreline has historically been one of the most rapidly retreating in the country.

p. 9, Future Without Project Conditions, Land Loss:
Current land loss rates are relatively low, but could easily see a dramatic rise if another Audrey type storm hit this area. Perhaps it would be useful to lay out the consequences of such a scenario given that the Ship Channel has been deepened. The FEMA hydraulic model that is being used by other basin captains and local planners is currently available for this area and could predict such impacts. We would be happy to provide this information. This could strengthen the argument that action is critical. Solutions that build in the likelihood of another major storm must be considered as they are for most long-term planning efforts in the area Some measures that will be effective under normal conditions will operate well in the event of a major storm surge. This needs to be brought out.

p. 9, Future Wlthout Project Conditions, Biological Resources
In the basin meetings in Abbeville, much time was devoted to discussion of the history of the fisheries in the Calcasieu area. Again, this is a unique history. A. I recall, much of the inshore and offshore estuarine flshery developed as a result of the opening of the Ship Channel and landings respond positively to the amount of freshwater introduced. Some discussion of the industrial contamination that has occurred in the upper reaches of the basin would also be appropriate here as this also affects the productivity and availability of the biological resources. It is important to introduce this at some point even though it may not be directly related to wetland loss because the hydraulics of the estuary and degree of tidal flushing are important both In spreading contamination and in allowing its assimilation. In other words, coastal restoration approaches that affect the hydraulics of the estuary will also have an effect on pollution assimilation.

Finally, it is very important in this section to address in a very straightforward manner the fisheries problems that have been linked to the operation of Cameron-Creole, explain the lessons that have been learned and how these problems are now being addressed.

p. 11, Plan Formulation, Planning Objectives for the Basin:
I recommend that the flrst objective be expanded to consider both normal and extreme conditions, particularly hurricane surge conditions. If there is anything that the history of this basin has taught us, it is that hurricanes can be extremely destructive in this area. Any planning document that neglects consideration of the very likely recurrance of a hurricane will be immediately seen as deflcient. See more discussion below of Alternatives Selected.

5.11

p. 11, Plan Formulation, Alternatives Considered, Alternative 2:
One possible modification of this alternative would be one that would provide protection only under hurricane conditions when ship traffic would not be moving. It could also be part of alternative 3. Gated hurricane barriers could be used to choke tidal flow (reduce channel cross-section) without locks on the Calcasieu and Sabine. This would greatly reduce the construction and operations costs associated with locks, would eliminate the need for some structures within the basin and would provide protection and enhance the effectiveness of other interior structures that are still needed. Such a proposal could be phased in as funding became available and would not necessarily conflict with the short-term perimeter approach.

p. 11, Plan Formulation, Alternatives Selected and Rationale for Selection:

RESPONSE 5.11: Planning objectives are to restore and protect wetlands by reducing saltwater intrusion and tidal scour and to maintain the geologic framework of the basin by protecting shorelines from further erosion. The extent of protection provided by structural measures would be determined during detailed planning and design.

The first and third guidelines may be useful in separating projects that are suitable for Implementation In the short-term from those that will be needed in the long-term, but should not be construed as a limitation within the comprehensive plan. Many projects, Including most of the linchpin solutions proposed in other basins do not meet these guidelines. The charge in developing the Comprehensive Plan is to develop a strategy that will do the job. If we Identify necessary elements that require funding outside of the current appropriation, we then can move forward to develop separate appropriations. If you can demonstrate that the alternative that you advocate will, first, completely accomplish objectives, and second, is cheap enough to be completely Implemented under current funding authority, then this will be one of very few basins for which this is the case. I don't think that thls is really what you are saying. While each project proposed for the perimeter system may be of a scale that it could individually be funded under the current authorization, the mix of projects required to meet basin objectives under alternative 2 are not cumulatively fundable under the CWPPRA or implementable within five years given the need in other basins. So the real question is not whether additional appropriations will be required, but how large they will be.

Another strategy might be to develop short-term and long-term strategies that are mutually compatible and that pave the way for subsequent appropriations.

5.12 The key guideline that is very appropriate is the second one, "meets basin objectives". It is, as I mentioned earlier, not clear to me that the perimeter plan as currently described contemplates recurring hurricane surge conditions. I don't think It's sufficient to say that in the event of a storm surge, all bets are off. I'm also not saying that you must design all projects to meet storm surge criteria but you might describe how a fully Implemented perimeter plan would work under a storm surge scenario and discuss predictable problems that might arise. It might be that your plan will work fine up to a + 6 foot surge at the coast but would be greatly disrupted by higher surges. This then might allow you to propose some additional long-term measures that would Improve effectiveness under all expected conditions.

p. 11, Plan Formulation, Key Issues:
An additional issue might be operation of the planned system under extreme hurricane conditions, or it might be included as a component

RESPONSE 5.12: Structures in the waterways could be designed for hurricane conditions, but since no protection is planned for the entire area, a hurricane surge would affect much of the area whether structures are designed for a surge or not.

under the second and third issues listed. With respect to fisheries impacts, it is probably posslble to estimate some of the effects on estuarine species if this is discussed in terms of the total amount of new acreage proposed for active management. Also, at some point it will be useful to discuss what active management in the Calcasieu/Sabine basin has historically meant and what the state of the practice currently is. Then It is possible to discuss quite specifically the areas and times of the year when management for revegetation, marsh enhancement and waterfowl is likely to conflict with the movement of various estuarine dependent species into and out of wetland nursery grounds.

p. 14, Implementation of Selected Basin Alternative
Again, the elimination of potentially costly or long-term projects should be based on an assessment that they would not work or would not support basin objectives rather than the overly constrictive and somewhat circular guidelines that have been established. If an EIS later determines that the environmental costs in fisheries, for example, of implementing the perimeter plan in its entirety would be unacceptable, you are left with no apparent alternative. Everyone knows that other options exist and that less costly basin wide alternatives are possible. I gave the example of a hurricane barrier as one that comes to mind immediately. I think It would be better to leave the options open, as little damage results from that. You can then show how some or all of the perimeter plan could be more effective if one or more large-scale basin alternatives were also implemented.

I look forward to discussing these comments with you at any time and congratulate you on the massive effort to date.

Sincerely,

G. Paul Kemp
Science and Technology Director

Coalition to Restore Coastal Louisiana

8841 Highland Road, Suite C • Baton Rouge, LA 70808 • 504 / 766-0195 • Fax 504 / 766-0229

July 29, 1993

U.S. Army Corps of Engineers
Environmental Analysis Branch
CELMN-PD-RP, P.O. Box 60267
New Orleans, LA 70160-2067

Attention: Mr. Bruce Baird

RE: Bonnet Carre Diversion Project

Dear Mr. Baird:

We would like to thank the Corps for allowing us the additional time to review the environmental assessment (EA) on the Bonnet Carre Diversion Project and to prepare these comments. We also appreciate your efforts to answer preliminary questions based on our evaluation of the EA.

The Coalition to Restore Coastal Louisiana (CRCL) has not taken a position on the merits of the proposed freshwater diversion up until now, preferring to wait for the EA before committing one way or the other. As you know, our interest in the project extends beyond the issues directly addressed in the EA and, as such, our evaluation necessarily strays beyond those bounds to consider the proposed project in a broader context.

Viewed in that broader context, we must object to the proposed diversion project as currently conceived.

Our objections are rooted in different sources, however, than are many of the project's other detractors. Our primary concern, for instance, is not what effects the diversion will have on recreational and commercial users of Lake Pontchartrain. Rather, our mission dictates that we review the proposed project relative to the long-range needs of the entire Pontchartrain Basin. We do not discount the local effects of the diversion and we do share those concerns raised by the Lake Pontchartrain Basin Foundation and Attorney General Jeyoub. Indeed, their comments and the local realities have added to our own concern, and we adopt them by reference.

We believe that beyond those points, however, the project is conceptually flawed and will not deliver the intended benefits. Let me explain how we came to this conclusion.

Turn the Tide on Wetland Loss by the Year 2000!

The problem the proposed diversion seeks to remedy is very real. Changes in the salinity regimes in Lake Pontchartrain and Borgne have had significant effects on those bodies and their surrounding wetlands. But to address the problem as one that can be corrected merely by adding more fresh water is to oversimplify the situation; indeed, it is to treat only a symptom of the problem.

The problem we believe must be addressed is the underlying destruction of swamps and wetlands to the point that salt water now goes where it traditionally could not go. The main cause of that destruction is not saltwater intrusion, so much as it is the Mississippi River-Gulf Outlet and the subsidence of lands surrounding the lake. Unless we address those root causes, we see little hope that a balanced system will ever be restored within the basin. Accordingly, we urge the Corps to consider a project that would nourish wetlands with sediments while introducing fresh water in a manner more consistent with natural flow conditions.

Next, the project is based on the assumption that an "optimal salinity" regime exists that can be maintained by the proposed diversion. We question the soundness of that assumption. In fact, we believe the evidence more strongly supports the conclusion that maximum productivity is a function of periodic pulses of fresh water. Indeed, the fact that productivity increases following spillway openings lends credence to this position — that pulses, more closely akin to natural flooding cycles, are the more efficient and effective way to maximize productivity.

Finally, we see no evidence of any workable operating program for the diversion. We have been told that conditions in the target area will be projected through predictive modelling, and that an as-yet-unamed multi-party commission will be vested with the authority to open the structure. Neither of those features inspire much confidence. In the first case, to predict conditions with sufficient precision to warrant diversion would require accurate wind and rain forecasting six weeks in advance. To the best of our knowledge, such an ability does not exist.

Further the relegation of all operating decisions to an as-yet-undescribed and undirected commission we find particularly troublesome, especially in light of the operating difficulties experienced at Caenarvon, a less ambitious diversion. The simple fact that the Corps has had more than ample time to refine the concept — nearly ten years since the Environmental Impact Statement was released — does little to compound our faith in this operating plan.

Unfortunately, this part of the project at the very least, has all the earmarks of a turn-key operation without an owner's manual. Unless we are given much greater assurance that the diversion project can and will be operated to achieve significant benefit for the Pontchartrain Basin, we cannot consider endorsing it.

Please note that our objection to this project in no way signals a retreat from our general belief that diversions of fresh water and sediment must be part of the "retro-fitting" of Coastal Louisiana. We still strongly support the Caenarvon and Davis Pond diversions and are encouraged by portions of the Federal Restoration Plan for the Pontchartrain Basin. But all projects are not created equal, and we must not fail to consider each project on its merit.

In sum — based on the evidence on the table at this time — the Coalition believes that the currently proposed diversion project at Bonnet Carre would cost too much, do too little, and benefit too few to justify itself. Instead, we urge again that a more comprehensive solution be considered that would directly benefit wetlands by more closely mimicking traditional natural conditions. Such solutions would more closely parallel the objectives of coastal restoration efforts mandated by the Coastal Wetlands Planning, Protection and Restoration Act.

We realize that there is no assurance that the funds could be switched from one project to another at this time, but we are confident that we could get a better project funded if we continue to work together. After all, five short years ago few would have believed that a major coastal restoration effort would be taken seriously, let alone supported by hard dollars. We should not allow ourselves at this juncture, then, to settle for a 1984 solution when more is needed and more is possible.

Very truly yours,

Mark Davis

Mark Davis
Executive Director

cc: Sen. Johnston
Sen. Breaux
Cong. Livingston
Gov. Edwards
Mr. Jos. Herring
Interested Media

DRAFT

MEMORANDUM August 23,1993

TO: Louisiana State Wetlands Authority, Federal Citizens Participation Croup, Breaux-Johnston Task Force

6.1 FROM: Mark Davis, Paul Kemp
Coalition to Restore Coastal Louisiana

RE: Adoption of New Mission for Breaux-Johnston Task Force Following Completion of Comprehensive Plan and Third Priority Project List

SITUATION:
Federal agency participants in P.L 101-646 process are facing a need to redefine their goals and objectives as all short-range requirements of Act will have been met by the end of thls federal fiscal year:

(1) establishment of routine process for selecting small to medium-sized priority projects annually; draft Comprehensive Plan now provides menu;
(2) establishment of administrative and funding mechanisms for projects and monitoring all to be paid for out of pre-allocated project budgets;
(3) drafting and finalization of Comprehensive Restoration and Environmental impact Statement.

The basin plans included with the draft Comprehensive Plan discuss local projects that will address perhaps 50%of the land-loss problem. The Plan also identifies in a conceptual way the large regional solutions that will be necessary to make long-term restoration work. Several members of the Task Force have approached the Coalition to discuss their roles for the upcoming year as they prepare their budgets so that we can move into the next phase of planning work We have also been discussing this matter with Congressional staff and find support for such a strategic re-evaluation.

The most logical next step is to move aggressively as a Task Force into the feasibility work necessary to advance the Breton Sound Diversion and other large projects. In several places, however (most notably on page 11 of the Executive Summary), the following

sentences have been inserted in the Draft Comprehensive Plan that would appear – if they actually reflect existing Task Force policy – to require a modification of the self-defined Task Force charter in order to proceed:

> "The Task Force did not develop – nor did the CWPPRA require – a process for analyzing, designing, or obtaining Congressional approval for large projects beyond the scope of the CWPPRA Priority Project lists. Implementing legislation for this restoration plan must, therefore, address large project authorization through existing agency processes or by modifying the Task Force's charter."

Up to this point, this has not really been a problem because of the focus on administrative matters. This statement does seem, however, to incorrectly interpret the plain text of P.L 101-646 which states in Section 306 that up to $5 million annually may be spent on:

> "(A) preliminary assessments;
> (B) general or site-specific inventories;
> (C) reconnaissance, engineering or other studies;
> (D) preliminary design work, and
> (E) such other studies as may be necessary to identify and evaluate the feasibility of coastal wetland restoration projects."

Throughout the concurrent planning processes – priority project, basin and comprehensive – we have repeatedly run up against impediments based on the Task Force's inability to acquire or analyze critical data, particularly hydrologic information. The Task Force must now choose whether to decrease the effort devoted to planning to free up money for projects, or get on wlth the feasibility work that can remove such impediments. The first course will prematurely dead-end the program far short of its potential and far short of the goals defined in the Act. The second course will establish a flow of credible project concepts upon which to build the case for a continuation and expansion of funding. Information developed in the course of feasibility work will also greatly improve priority project selection, engineering and construction. Additionally, much greater emphasis must be placed on actively building public support and confidence to the level necessary to carry controversial large-scale projects through to implementation.

ACTION REQUIRED:

1. Examine existing Task Force charter and change as necessary to conform to law and redefined mission. Recommend that the Executive Summary of the draft Comprehensive Plan end with recommendations for "point forward" actions. Specifically, we recommend that the Task Force's immediate mission be reoriented toward undertaking or facilitating one or more key feasibility investigations of the "big picture" concepts identified in the Solutions section.

2. The Task Force's public outreach efforts should be reviewed and revised to enhance the flow of information to and from the public and scientific community. A specific strategy for developing and nurturing a national constituency for restoration of Louisiana's coastal wetlands should be defined as an important part of the outreach effort.

3. Proposed budget priorities for the coming year should be reviewed and brought into conformity with a redefined mission. The two task categories currently proposed are (a) priority project selection and (b) revision of basin plans. We recommend that the Task Force consider a third task involving initiation of reconnaissance level feasibility work on one or more of the large regional concepts identified in the Solution section.

The level of effort necessary for priority project selection is relatively well understood at this point and should not undergo a significant increase unless additional planning tools are to be introduced that will greatly increase credibility and certainty of success and result in a reduction in project design and construction costs.

Regarding the second task, the Task Force itself is understandably uncomfortable with existing basin plans but should not underestimate their current value as a benchmark of where we are today. They provide a menu of potential projects and initial restoration concepts more or less favored by agencies and the public. We are concerned that the Task Force as it currently operates will in the next year be able to improve only marginally upon these plans in the absence of any new effort to integrate available but -- to this point -- largely underutilized information and standard technical planning tools like reconnaissance-level hydrodynamic models. A major task force effort to revise the basin plans at this stage would represent a self-imposed mission not called for by the Act, nor expected by the public beyond whatever comments have already been received in response to public notice.

The Act does not preclude modifications to the Plan at any time (Section 303(b)(5)), but specifically requires an "evaluation" within three years of the submittal of the original plan (Section 303(b)(7)), that is, by November of 1996. A case can therefore be made that a major revision of basin plans should be put off for a couple of years while planning tools and information necessary to test the assumptions and prioritize the proposals in the existing basin plans are developed in the course of regional feasibility work directed at some or all of the concepts identified in the Solution section of the draft plan. For example, plans that call for diverting large amounts of Mississippi River water and sediment into adjacent basins cannot advance further without at least a cursory investigation of the availability of such resources. Without such an investigation, diversion projects will be sidelined indefinitely while other potentially less effective approaches move forward by default.

Accordingly, we recommend that a new task category be added and funded -- perhaps with some of the money currently proposed for basin plan revisions or alternatively with remaining funds -- that has the potential to move the process ahead. We do not recommend a retreat from the project orientation that is required by the Act, only that the projects to be considered be large enough in scope that the information the feasibility process generates will supply missing elements necessary to support a substantial advance in basin-level planning in all or most basins within the schedule established in the Act.

RESPONSE 6.1: This letter was submitted to the Task Force for its consideration. The Coalition is not seeking a response at this time.

CoastWatch

The North Shore CoastWatch • an affiliate of the Coalition to Restore Coastal Louisiana

August 30. 1993

Colonel Michael Diffley
New Orleans District Engineer
c/o Mr. Richard Boe
EIS Coordinator
CELMN-PD-RS
U.S. Army District Engineer District. New Orleans
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Comments. Draft Louisiana Coastal Restoration Plan Environmental Impact Statement

Dear Colonel Diffley:

These comments are submitted jointly by the members of the North Shore CoastWatch Pontchartrain Basin Draft EIS Working Group. on behalf of the following groups: Lake Pontchartrain Basin Foundation. Honey Island Group Sierra Club. Citizens for a Clean Tangipahoa. League of Women Voters of St. Tammany. Lacombe Environmental Action Project. Three Rivers Basin Foundation and the Tickfaw River Basin Group.

The premises of the coastal restoration initiative are inarguable: (1) coastal wetlands are among the most productive ecosystems on earth and are of national and even global importance (for example. Louisiana's coastal wetlands support a commercial seafood harvest of $1 billion annually. comparable in volume to that of the entire Atlantic seaboard). and provide critical hurricane protection, water filtration and nesting grounds: (2) these wetlands are being lost at an alarming rate (80% of all U.S. coastal wetlands loss, ~25 square miles yearly) through natural and human induced processes: and (3) coastal wetlands destruction and loss of the irreplaceable way of life these wetlands support can be slowed or stopped.

The Congress, through enactment of the Coastal Wetlands Planning. Protection. and Restoration Act (CWPPRA). has directed an interagency task force led by the Army Corps of Engineers. to file and follow a comprehensive plan to accomplish CWPPRA's goal of coastal protection and restoration. It is in the planning

that the task force has strayed from Congress' vision and mandate.

Briefly. the overall plan lacks the following. which we believe are essential to a workable coastal restoration plan (our comments and objections are discussed in detail below). (1) appropriate review; (2) meaningful citizen participation: (3) evaluation of ongoing regulatory processes: (4) accountability: and (5) specific solutions.

We believe that the Lake Pontchartrain Basin plan is deficient for the following reasons (also discussed in detail below): (1) it does not address the basin's major land loss issues; (2) over-reliance on hard structures in open water: and (3) it fails to address the EPA plan for restoration.

Detailed comments'on the EIS:

7.1 (1) Appropriate review. We are concerned that the task force is dominated by agencies which both propose and will implement specific projects. This has led to an over-reliance on and preference for structural solutions above all others. Because the Louisiana coastal restoration plan is estimated to cost at least $1.4 billion in U.S. taxpayer-generated funds. and purports to solve a problem of national importance. we urge formation of a national peer review panel to evaluate the entire restoration plan. This panel should bring together engineers and scientists and the nation's best planners and creative thinkers. The goal should be clearly defined. and the ultimate question should be answered: are we really using the best means to achieve this goal?

7.2 (2) Meaningful citizen participation. A workable coastal restoration plan requires both a scientific and commonsense approach. Put bluntly. if the public turns thumbs down. the effort is doomed. Success requires ground-up support. Thus far. the public has been forced to assume a reactive role due in large part to the task force's lukewarm public education effort. We recommend formation of a proactive public outreach committee made up of individuals familiar with coastal issues but. more importantly. who can relate to the resource users--ordinary citizens--and make them part of the coastal restoration team. (See comments on the basin plan below).

RESPONSE 7.1: We have no plans to form national peer review panel. We believe that many of the most knowledgeable coastal wetland scientists in the U.S. are associated with universities in Louisiana. The Task Force has attempted to involve the scientific and academic community of Louisiana in the planning process through available authority. The result has been less than what some in the scientific and academic community have desired. The Task Force intends to continue seeking and using the expertise of the scientific and academic community of Louisiana via a cooperative agreement between the EPA (representing the Task Force) and the academic community.

The W. Alton Jones Foundation is funding a panel comprised of seven eminent wetland scientists and engineers. This group will assess existing scientific knowledge concerning wetland loss and restoration in coastal Louisiana. The panel will determine what actions will assure the long-term continuance of Louisiana's extensive coastal wetlands.

Additionally, through expanded public outreach and widely available monitoring data it is expected that the scientific and technical communities will be better able to participate in the CWPPRA process.

RESPONSE 7.2: We believe that the public involvement program has been successful in identifying significant opportunities for coastal wetland restoration (see Section 5 of the EIS). Most of the proposed projects contained in the Restoration Plan were generated through public involvement.

The Task Force is instituting a new public outreach program that will, via newsletters, mailings, and regular press releases and conferences, notify the public of the status of the restoration program, hearings, meetings, and the expenditure or commitment Of restoration funds. Additionally, the Citizen Participation Group has been reconstituted so as to provide regular public input.

(3) Evaluation of ongoing regulatory processes. Activities in the coastal zone are regulated by numerous local. state. and federal programs. Many of these regulatory schemes. as implemented; and the cumulative effects of past and present projects. are at serious odds with the goal of coastal and wetlands restoration. The plan must include means for independent. honest data gathering and review, particularly the Clean Water Act Section 404 (0.03% permit denial rate in the New Orleans District) and Coastal Zone Management Act (0.00% permit denial rate in Louisiana). so that the left hand (permitting) and the right hand (restoration) act in concert. Compliance, mitigation. and enforcement must be monitored in the "real world." as well as on paper. This is side-stepped in the EIS. and must be addressed head-on for consistency with CWPPRA.

7.3

(4) Accountability. We have been informed that at least $10 million has been spent on the planning process to date. The programmatic EIS must state a method for review of issues addressed in paragraphs 1 through 3 above and the efficacy and cost-effectiveness of the entire program. Timetables for goals must be set. with at least a yearly assessment of achievements. Timetables must also be set for each project. with a similar accounting and review period.

7.4

(5) The programmatic EIS is generic. The public has been asked to comment on the EIS generally and specific basin plans. The EIS is inadequate for analysis of any specific project as it relates to an overall. comprehensive restoration plan or to the plan for each basin. For example. the EIS states that "teams eventually combined the best approaches of all approaches (alternatives) considered for each basin into the basin restoration plan. In other words. virtually no projects or Proposals were eliminated." EIS-26. Proposed projects were then grouped into 13 major types. The project types were not evaluated for cost-effectiveness or according to basin location or hydrology or land use. Hardly a plan. Also. this leaves no room for non-structural. "non-project" solutions such as acquisition or land-use change incentives. which may in some Cases turn out to be the best means for achieving CWPPRA's goals.

7.5

RESPONSE 7.3: Section 304 of the CWPPRA provides for development of a Conservation Plan which shall have a goal of achieving no net loss of wetlands in the coastal areas of Louisiana as a result of development activities. As stated in section 2.2.2. of the EIS, regulation of developmental activities is covered under a separate section of the CWPPRA (Section 304), and therefore will not be discussed in this EIS.

The plan acknowledges that restoration efforts will have to be based on real world conditions, which would include taking cognizance of activities and projects undertaken oetside of CWPPRA. These factors will be addressed to some extent in the Conservation Plan, but will also need to be the subject of periodic review.

RESPONSE 7.4: The CWPPRA provides for up to $5 million to be spent each year for planning purposes. Approximately $10 million was expended during the first two years of funding. The CWPPRA requires the Task Force to submit an annual status report to Congress on all previously approved projects. These reports are available for public review. Also, please see Response 7.2, above.

RESPONSE 7.5: The EIS is not intended for the analysis of any specific project, but rather to disclose the types of impacts that can be expected from the various types of projects that may be implemented.

Several projects have been eliminated in each basin plan. Some projects interfered with other projects and others were less effective than the selected projects.

Acquisition of lands or land-use change incentives are not the focus of the Restoration Plan as provided for in the CWPPRA. This type of project is defined as a coastal wetlands conservation project, specifically provided for under Section 305 of the CWPPRA; however, Section 306(b) prohibits the use of CWPPRA funds for coastal wetlands conservation projects in Louisiana.

Detailed comments regarding the Lake Pontchartrain Basin Plan:

As noted above. given the generic tone of the EIS. we are uncertain how to comment meaningfully. We ayree with CWPPRA's goals. and believe that the $135 million (not including the Bonnet Carre Mississippi River Water Diversion) slated for the basin could go a long way toward a valid restoration program. but you just can't get there from here.

7.6 (1) a) The plan does not address the basin's major land loss issues: subsidence. and wetlands loss from development. and increased salinity. Acknowledging the hydrology and land use patterns of this basin is critical to any meaninful plan fo restoration. This is ignored in the Pontchartrain Basin an for re plan b) the EIS fails to address the need for sediment rather than water diversion; c) the obvious need for closure of the MRGO; d) and the fact that ship channels are still being cut and rivers and streams are still being altered. Also. there is virtually no restriction on destruction of existing wetlands. Failure to rectify ongoing destruction of coastal areas in a restoration plan is inconsistent with CWPPRA's mandate.

7.7 (2) a) We are concerned about the plan's reliance on hard structures in open water. If. as the EIS states. the goal is to use "natural" processes for coastal restoration. we tail to see the logic in filling the shores of Lake Pontchartrain with rocks. There are certainly more innovative. less destructive alternatives available. and we suggest that the task force contact the scientific comnunity and local citizens for information about numerous "soft" alternatives (including Project Yuletide) and state-of-the-art techniques. b) Addition lly, the plan does not address c) creation of artificial marsh. a marsh restoration process, or d) the issue of water contamination.

7.8 (3) The plan fails to address the EPA-sponsored Comprehensive Management Plan presently underway for restoration of the basin. The draft CMP has been prepared with intensive involvement from the scientific community, agencies, and local citizens, at a cost of $500,000. a) The EIS does not address the issues or proposed solutions in the EPA plan. In fact, the two documents vary a great deal in both approach and proposed implementation. The CMP is not even footnoted in the EIS. This points out the lack of interagency communication and the task force's unwillingness to

RESPONSE 7.6:

a.) The major roles that subsidence and salinity play in current wetland losses are described on page 11 of the Pontchartrain Basin appendix. The role that development has played in past wetland losses is discussed on page 15 of the appendix.

b.) One sediment pumping project was proposed in the draft plan. The final plan includes three sediment import projects under the long-term critical category.

c.) As described on page 10 of the Pontchartrain Basin appendix, the MRGO is an economically viable waterway. As described on page 23 of the appendix, bank stabilization is the most cost effective way to solve the MRGO erosion problem.

d.) Destruction of existing wetlands for development has slowed drastically since 1980. The state, in coordination with local governments, industries, and private landowners, has reduced wetland losses from permitted activities from 3,000 acres per year in 1980 to less than 200 acres per year in 1990.

RESPONSE 7.7:

a.) A demonstration project to compare several methods of hard and soft shore protection is proposed. As we learn more about which structures are most cost effective for the various site-specific conditions, these will be utilized as appropriate in other shoreline protection projects.

b.) One of the first priority project list projects to be implemented is creation of 204 acres of artificial marsh in the LaBranche wetlands. The basin plan proposes to use all of the MRGO dredged material between the GIWW and the jetties in Breton Sound to create 1,330 acres of marsh over the next 20 years. Other marsh creation projects are also included in the plan.

c.) We are uncertain what is meant by this comment. The basin plan proposes a number of marsh restoration processes such as shoreline protection, hydrologic restoration, marsh management, etc. that would create or preserve 17,325 acres of marsh and 3,597 acres of swamp over the next 20 years.

d.) Dealing with water pollution is not a CWPPRA mandate. However, projects that would examine the feasibility of creating marsh to treat stormwater runoff are proposed in the final plan.

7.8 - nt. involve outside groups in the planning process. b) The task force is also be missing the opportunity to use the CMP process as the model for citizen/agency interaction in formulation of a the Coastal Restoration Plan.

In summary, the Coastal Restoration Plan has been called the "restoration roadmap for the next generation." CWPPRA should provide the framework to draw together a broad-based coalition of agencies, public institutions, and citizens committed to saving our coast and our way of life. But we must show the taxpayers that we have done our homework and their money will not be wasted. Under the current process and the EIS as drafted, however, and particularly for the Lake Pontchartrain Basin, each 7.9 project will become a Bonnet Carre, pitting the citizens against agencies in an effort that will exhaust all concerned. It is unfortunate that what the task force has proposed for this basin has become not a road map, but a battle plan. It is not too late for CWPPRA to become the salvation it was intended to be, and we, as resources users, citizens and taxpayers, reaffirm our commitment to working with the task force to make the best of what has the potential to be our strongest hope for coastal restoration.

Submitted by:

Terri Bewig

North Shore CoastWatch
165 Swallow Street
Covington, Louisiana 70433
phone/fax (504) 893-8997

cc: Senator John Breaux
Senator J. Bennett Johnston
Coalition to Restore Coastal Louisiana

RESPONSE 7.8:

a.) The EPA-sponsored Comprehensive Management Plan (CMP) for the basin is discussed on page 2 of the Pontchartrain Basin appendix. As discussed on page 2 of the Pontchartrain Basin appendix, many of the same scientists who developed the CWPPRA plan helped develop the CMP. Nearly all the solutions in the CWPPRA plan were unanimously proposed for the CMP by the CMP Renewable Resources Subcommittee. However, the Lake Pontchartrain Basin Foundation (LPBF), who finalized the CMP, chose not to include the Bonnet Carré Freshwater Diversion, numerous shoreline protection projects, or spoil gapping project in the CMP.

b.) As described in the Main Report, a Citizens Participation Group composed of representatives of 17 highly diverse groups was heavily involved in the preparation of the CWPPRA plan. Representatives of groups such as the Coalition to Restore Coastal Louisiana, the LPBF, the University of Southeastern Louisiana, the University of New Orleans, and St. Bernard, St. Tammany, and Orleans Parish representatives helped formulate the Pontchartrain Basin Plan.

RESPONSE 7.9: (To resolve this issue, we met with the author of this letter.) As a result of the meeting and comments by others, we have reduced reliance on hard structures and added projects for marsh creation for stormwater treatment, restoration of submerged aquatics, and hydrologic restoration through spoil bank gapping. We hope that Coast Watch is beginning to regard the plan as an important road map in restoring the Pontchartrain Basin.

BUILDERS • BARGES • DRYDOCKS
DRYDOCKING — SHIPYARD

CONRAD
Industries, Inc.
1501 FRONT STREET • P. O. BOX 790 • MORGAN CITY, LA. 70381
Phones: 384-3060
876-2960
384-9635
Fax: 385-4090

August 17, 1993

Mr. Richard Boe
EIS Coordinator
CELM-PD-RS
U.S. Army Engineer District,
New Orleans
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Gentlemen,

Regarding the plans presented in the Atchafalaya Basin LA Coastal Wetlands Restoration Plan. Let me say that first and foremost the Atchafalaya Flood Control Plan is just that - A Flood Control Project. The primary purpose is to save human beings and their property from severe flooding. This must be a deciding factor in any offshoot ideas.

Granted, the building of a Delta is a worthwhile endeavor: but, please do not give it more importance than the preservation of business on the Morgan City and Berwick waterfronts, where 3500 jobs are at stake and very possibly more during the next major flood.

8.1 Perhaps it is hard to realize, but a project flood would be so devastating to the Morgan City area that it may set this whole area back 50 years.

May I also point out that there is absolutely no plan to avert such a disaster except the one proposed to divert the entire flow of the Atchafalaya River thru the Wax Lake Outlet.

Whether this is feasable both from a cost ratio basis and an engineering standpoint is up to the U.S. Corps of Engineers to decide. I would hope that it is and that it would be put on as top priority.

I am wholeheartedly in favor of coastal preservation and restoration and vish that those who are working so hard will reach a successful conclusion.

Yours very truly,

CONRAD INDUSTRIES. INC.

J. Parker Conrad
President

JPC/lbw

RESPONSE 8.1: Under Key Issues in the Planning Section of the basin report, the issue of flood control is discussed. Also, the impacts of each project on flood control will have to be identified and adverse impacts resolved before implementation.

CONTINENTAL LAND & FUR CO., INC.
909 POYDRAS STREET, SUITE 2100
NEW ORLEANS, LOUISIANA 70112-1051
TELEPHONE 504/586-1718 TELECOPIER 504/581-4398

August 25.1993

U.S. Army Corps of Engineers, CELMN-PD-FE
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Attention: Mr. Richard E. Boe

Continental Land & Fur Co., Inc. (CL&F) owns marshlands in the upper Penchant subbasin of the Terrebonne Basin CL&F and other owners of marshlands in the Penchant Basin entered into a cooperative agreement with the Soil Conservation Service (SCS) to develop a wmprehensive multiuse conservation plan for the Bayou Penchant Basin.

The plan has been modified since the preliminary plan was presented in November of 1992. In fact, certain items listed under the description section of PTE-26, insofar as CL&F marshlands are concerned, have been revised.

1 Until such time as a final comprehensive plan is developed and apprwed by the parties, the description section of PTE-26 should reflect the plan's concepts/goals. We have attached a copy of a revised page 33 wherein our proposed language is reflected in bold type. A wpy of the original page 33 is also attached with the deleted language reflected in brackets. Please incorporate the suggested changes in the final version of the Louisiana Coastal Wetlands Restoration Plan.

2 Additionally, SCS requested our permission to locate the flotant marsh creation/enhancement fencing demonstration project (XTE-54B) on CL&F lands. CL&F is willing to allow SCS to build this project on our lands assuming a location and form of easement can be agreed upon The three proposed sites for XTE-54B discussed during the August 9, 1993 meeting in Houma were selected by SCS to depict the conditions in which the project would be installed. The sites are located in a producing gas field where the operator is currently conducting a workover program and a 3D seismic survey. In our opinion, the aforementioned activities precludes this area from being a suitable site for the project. We will meet with representatives of the SCS to review other possible locations for this project.

For you information. Robert H. Chabreck, Ph.D., will submit additional comments on our behalf regarding the Louisiana Coastal Wetlands Restoration Plan.

Sincerely,

George A. Strain

George A. Strain
Vice President

GAS/ap

RESPONSE 9.1: All recommended changes have been made.

RESPONSE 9.2: In the project description in the report, we state that the project location is "to be selected'.

TERREBONNE BASIN
APPENDIX E

(CL&F SUGGESTED **LANGUAGE** IN BOLD TYPE)

PROJECT DESCRIPTIONS

The **benefits** presented in the following project descriptions **represent gross** estimates based on a rapid estimation procedure developed by the Wetland Valuation Analysis (WVA) committee. which will certainly be revised when each project is analyzed more fully. There was also no provision for full analysis of potential adverse or cumulative impacts.

CRITICAL PROJECTS

ALTERNATIVE C. PENCHANT **SUBBASIN, HYDROLOGIC** RESTORATION

PTE-26 Upper Bayou Penchant watershed management.

Description

Physical **Characteristics.** Project PTE-26 refers to a wide array of measures which collectively achieve the objectives of Alternative C, hydrologic management in the Penchant **subbasin.** At present, none of the measures have been fully defined; however. the planning process is well advanced, and specific measures within this plan are expected to be finalized within the remaining 3-year period of CWPPRA funding. Consequently Project PTE-26 is considered short-term.

The concept of this management plan is to better **utilize** the sediments and nutrients in the basin **by** means of **hydrologic restoration.** Sediments are introduced **to** the **area** via the Gulf **Intracoastal Waterway (GIWW)** and **the Atchafalaya** River. At present, a large **percentage** of these sediments **are not** retained within **interior** marsh areas **because** of rapid water exchange rates. This plan proposes **to:**

1) restore some historic water **flow** patterns through **natural bayous** (distributary channels).

2) allow better distribution and **retention** of sediment-laden waters.

3) increase **freshwater flow** to intermediate and brackish marsh **areas** by utilizing **oilfield** and pipeline canals.

4) provide outlets to reduce flooding during high-water periods.

5) control **outflow velocities** at **major outlets.**

Allan Ensminger
(318) 462-0762

August 28, 1993

Mr. Oscar Rowe
CELMN-OD-FE
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Rowe;

As representative of the Louisiana Association of Conservation Districts on the Citizens Participation Group, I provide the following comments on the Draft Louisiana Coastal Wetlands Restoration Plan, Main Report and Environmental Impact Statement.

A meeting of the Marsh Committee of our Association met on August 23 and 24, 1993 and agreed that the Draft Plan is an acceptable document to address the short and long term problems facing coastal wetlands in Louisiana. We had planned to make a public statement in support of the Plan at the scheduled August 25, 1993 Task Force meeting and will attempt to attend and support the Plan at the meeting set for September 13, 1993.

10.1 Throughout the Draft Plan, frequent reference is made to technical presentations dealing with other than coastal Louisiana wetlands. We feel that an adequate amount of scientific studies and private projects have been conducted in Louisiana to provide guidance for management of our wetlands.

10.2 At the Public meeting held on August 11, 1993 at the District Office of the Corps of Engineers, a representative of the U.S. Environmental Protection Agency made comments which we do not feel accurately reflect the subject of Marsh Management in coastal Louisiana. Many of our members and cooperators have been engaged in meaningful and successful marsh management in coastal wetlands for more than fifty years! We are disturbed that a member Agency of the Task Force would oppose programs that landowners have implemented to protect their properties and enhance natural resource habitat.

10.3 In the oral statement and in the written letter provided to Colonel Diffley by E.P.A., fisheries resources are treated as the only resource that occurs in our wetlands! We do not agree with this position and take exception to the statement "Information presented is inaccurate and misleading." We do agree with their

Wetlands and Wildlife Management Co. · Rt. 2 Box 198 · DeRidder, LA 70634

10.3 Cont. comment "It should be made very clear and emphasized that without effective action to create and restore wetlands the fish and shellfish industry and recreational users may see their resource collapse in a relatively short time; this impact should be quantified as fully as possible." Without a healthy vegetated marshland, fisheries as well as other forms of natural resource organisms will diminish in coastal ecosystems!

10.4 As members of the Task Force throughout the period of time the Plan has been under development, where was E.P.A.? We feel that their comments should be disregarded at this point and the final plan and E.I.S. completed so that coastal protection and restoration work can proceed under P.L. 101-646.

Respectfully Submitted

Allan B. Ensminger

Allan B. Ensminger
L.A.C.D. Member of
Citizens Part. Group

ABE/me
cc. Mr. Warren Harang, Pres.
L.A.C.D.

RESPONSE 10.1: We assume that you are referring to the South Carolina studies on marsh management by DeVoe and Baughman (1986) and Devoe et al. (1986). We believe that is proper to reference these studies, with the cautions which we have included in the EIS. We have also made numerous references to studies conducted in Louisiana.

RESPONSE 10.2: Environmental concerns expressed by the EPA regarding marsh management were in response to research results that they believe should be considered in evaluating impacts of projects proposed for restoration of wetlands.

RESPONSE 10.3: Fisheries resources, as well as numerous other resources, are discussed in the EIS. The fisheries resource is at great risk under present coastal environmental conditions. The plan does not intend to exclude non-fisheries wetland resources. However, since fisheries account for 70-90 percent of the values of coastal marshes, they are given prominence.

RESPONSE 10.4: EPA is specifically mandated under Section 309 of the Clean Water Act to review and comment on environmental impacts of Federal proposals and the EPA is further required to make its comments known to the public. The regulations of the President's Council on Environmental Quality for implementation of the National Environmental Policy Act additionaly require Federal agencies to comment on impactss, and also require that preparers of impact statements assess, consider, and respond to agency comments.

EPA COMMENTS

EPA's comments are arranged in 6 sub-sets as follows. In addition, comments were provided by Dr. Gary Shaffer, Dr. Robert H. Chabreck, and the LSU Center for Coastal, Energy, and Environmental Resources through the EPA. These comments are covered separately. Only the comments designated as 11A, 11B, and 11C below are considered as the EPA's official comments on the EIS.

11A EPA's transmittal letter with Classification of the EIS
11B EPA's letter delivered at the formal EIS public hearing on August 11, 1993
11C EPA's comments on the EIS
11D A review of basin plans by Sherwood M. Gagliano
11E Comments on the EIS by Lee Wilson and Associates
11F A review of the Restoration Plan by Ivor Ll. Van Heerdan, Don Davis, and Mike Barber

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 30. 1993

Colonel Michael Diffley
District Engineer
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Diffley:

The Environmental Protection Agency (EPA) has completed review of the Draft Louisiana Coastal Wetlands Restoration Plan (RP) and Programmatic Draft Environmental Impact Statement (DEIS). This review is in accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act and the Regulations of the Council on Environmental Quality (CEQ). Our letter presented at the Public Bearing on August 11, 1993, should be incorporated as part of our comments on the RP and DEIS.

We wish to express our sincere appreciation to you for your leadership as chairman of the Task Force of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). EPA continues to be enthusiastic about the CWPPRA and remains supportive of the action-oriented approach which Congress has mandated for restoration of the nationally significant coastal wetlands of Louisiana. We are confident that the Task Force will not only turn around the trend of wetlands loss in Louisiana, but contribute to national wetlands restoration, through development of new scientific information and of innovative partnerships between government, industry and the public.

General comments. Our review has given special consideration to: 1) whether the RP and DEIS fulfill the goals, objectives and priorities established at the outset of the planning process; and 2) the scientific and environmental soundness of the plan, and in particular the extent to which we can expect a successful outcome. While we applaud much of what is being proposed, and recognize the severe scheduling problems which have constrained the planning effort, we find the RP and DEIS contain a significant number of deficiencies. Our most substantive concerns, which are summarized below, need to be addressed before the plan and impact statement can be considered as providing an adequate basis for restoration and protection of Louisiana's coastal wetlands.

11A.1 • The CWPPRA plan appears to be a compilation of basin plans with some generalized introductions. To accomplish the CWPPRA objectives, the plan must integrate the plans into a

Printed on Recycled Paper

11A.1 Cont. coherent, coastwide program in Which projects are prioritized in order to optimize long-tern, regional benefits. To date, there has not been effective integration of the basin plans, nor is there a prioritization system which recognizes coastvide needs and the value of promoting natural processes.

- Under natural conditions, sediment accretion was the single most important process for creating wetlands and maintaining existing marshes against subsidence and loss. It is not possible to support a sustainable coastal ecosystem in Louisiana unless the available sediment resources are used to a maximum extent. In principle, the plan agrees with this point, but it does not assign it a proper priority, nor does it set forth an effective sediment management strategy. A successful plan must implement a program to urgently resolve the many conflicts which impede sediment accretion projects, so that there is near-term, large-scale use of river sediments to build new deltas. 11A.2

- The typical basin plan appears to be dominated by a catalog of short-tern, small-scale, defensive projects. These projects seldom consider or take advantage of the natural processes of the Louisiana coast; this is true even for some of the hydrologic restoration projects, which will in fact create new, artificial hydrologic regimes. not restore old ones. The result will be intensive management to maximize the short-term economic productivity of the ecosystem, at the expense of enormous ongoing maintenance costs and continued net land loss. The ecosystem which ultimately results will be far smaller and less productive than the one which exists today. The RP does not demonstrate that this limited. defensive strategy is an effective solution to wetland loss in the Louisiana coast. 11A.3

The DEIS fails to disclose the cumulative adverse impacts of the projects which make up the adopted strategy. The primary purpose for preparing a programmatic EIS is to ensure that impacts of project interactions are addressed. and to consider the overall effect of the CWPPRA projects on the environment of the Louisiana coast. Until this is done, for each basin and for the entire coast, the EIS will not satisfy NEPA objectives. 11A.4

Project benefits continue to be based in significant part upon unsubstantiated judgments about acres enhanced or benefitted, when creation and direct, large-scale protection are really what counts. Little attention is paid to the importance of building computer models that could objectively quantify project benefits and that would afford the Task Force confidence in the selection of projects for funding. Without a long-term focus based on demonstrable benefits, it is likely that future priority project lists will resemble past ones, that is 1 or 2 projects per year per basin, a few 11A.5

RESPONSE llA.l: After receiving comments on the draft report. the Task Force formed committees of their employees, the academic community, and others to revise the basin plans and main report. The basin plans together now form an integrated, coast-wide restoration program. Projects have been prioritized in a consistent way in each basin. The plan promotes natural processes wherever possible in each basin adjacent to the Mississippi or Atchafalaya Rivers. Restoration of fluvial processes is a key objective in these basins.

RESPONSE llA.2: The main report and EIS have been revised to place additional emphasis on the importance of river sediments (or "fluvial processes"). One of the priority tasks to be performed is a study to determine the sediment budget of the Mississippi River below the Old River Control Structure.

RESPONSE llA.3: The numerous "small" projects contained in the basin plans are the result of public input and Task Force agency proposals. It would not be prudent to disregard these proposals without evaluating them, which has yet to be done in a detailed manner. We believe that many of these small, protection-oriented projects would serve a useful purpose and may be the most cost effective manner by which to address wetland problems, especially in areas isolated from river sediments. We agree with you that maximum use of river sediments should be used to create, restore, and protect wetlands, but we recognize that there are limitations on the use of sediments and that protection projects may be necessary to reduce the rate of wetland loss until sediment diversion projects can be implemented.

RESPONSE llA.4: A discussion of the cumulative impacts of the projects that make up the adopted strategy is an impossible task at this stage of Restoration Plan development. At this time, the Restoration Plan consists of a "catalog" of proposals which will be implemented on a priority basis. Many of the proposals overlap each other geographically and many of the proposals are mere conceptual ideas for a given area. There is no way to determine the cumulative effects of conceptual ideas. It is true that a very rough benefits have been estimated for many of the projects contained in the plan, but we are hesitant to display these numbers as facts in the EIS. Discussions of the interactions of all projects proposed in each basin and across the Louisiana coast would be a monumental undertaking which is not possible under time restraints imposed by the CWPPRA for submission of the Restoration Plan and would be too complex for a single EIS.

The EIS outlines the impacts of each project type. Then 'the EIS presents lists of the projects currently proposed for each basin so that readers of the document can see what the overall impacts of the projects would be for each basin.

11A.5 Cont. million dollars each. It is imperative that the outcome of the RP be an implementation strategy which keeps in mind a coherent, overall approach to prioritization.

11A.6 • Even though the CWPPRA recognizes the importance of demonstration projects, we find no master strategy for these projects in the RP. Demonstration projects provide excellent opportunities with limited funding to develop effective approaches and new technologies to meet the specific needs and challenges of wetland restoration. We need a strategy to select demonstration technologies and implement the appropriate projects on a priority basis. In many cases, this may provide opportunities to build interagency and private sector partnerships which will promote long-term restoration.

11A.7 • Usable restoration material is available through maintenance dredging of the navigable waterways. The beneficial use of dredged material should be an active part of any dredging endeavor. The idea that this technique can be used only where feasible and when funding is available, should be reconsidered on a case-by-case basis. Beneficial use of maintenance dredged material for creating wetlands should be diligently pursued as projects under CWPPRA.

11A.8 • EPA is pleased that our previous recommendation to include the scientific/academic community in the CWPPRA process has been implemented by the Task Force. We now suggest that a more formal approach is warranted and recommend that a Science Advisory Board be established for the long-term continual peer review by recognized scientists. This will help to ensure the credibility of Task Force actions and would provide current information and suggestions rather than after-the-fact comments.

11A.9 In summary, unless and until we integrate the basin plans, establish overall priorities, and demonstrate a successful vision, the CWPPRA plan will not be integrated, prioritized, visionary or successful. EPA believes the vision presented in the plan should be of an ecologically complex and largely natural system which can sustain high levels of productivity. To this end, we must integrate the basin plans, prioritize projects based on coastwide and regional considerations, and improve the scientific credibility of project evaluations. And a strong implementation process must be developed, which secures funding adequate to the task at hand. In the process of revision, it will be important to add many maps, charts and tables. The alternative to an effective plan will be an ill-defined accumulation of projects, in which the promise of a restored Louisiana coast has little substance.

11A.10 We request these issues be addressed and responded to in the Final EIS and Final RP, in order that the documents satisfy the

RESPONSE llA.5: We agree that the benefits expressed in the main report contain unsubstantiated judgements about acres enhanced or benefitted. These benefits were formulated by the Environmental Work Group, of which EPA was a member. The group used professional judgement, based on previous experience in determining benefits for proposed projects, to estimate environmental enhancement benefits of projects above and beyond acres of emergent vegetation that would be protected or created. The Wetland Value Assessment methodology, although not a numerical model, is a peer-reviewed method based on numerous habitat models. It has been approved by the Task Force for use in determining benefits of projects proposed for priority project lists.

The Restoration Plan now categorizes critical projects in a similar manner in each basin. They are projects that use key strategies to achieve key objectives. Thus, the Restoration Plan now includes an implementation strategy which provides a coherent overall approach to prioritization.

As a result of discussions among the Task Force agencies and comments received on the draft report, the main report has been revised to include proposals for feasibility studies. It is likely that such studies will include computer models.

RESPONSE llA.6: Several new demonstration projects are included in the final report. We agree that a strategy to select and implement demonstration projects is desirable. If you believe this is a high priority, you should bring it up for discussion of the Task Force, or develop a draft strategy and submit it to the Task Force for its consideration.

RESPONSE llA.7: The final plan includes numerous projects proposing beneficial use of dredged material. Projects for beneficial use of dredged material will be subjected to the same benefit-cost analyses as other projects proposed for funding. The only exception would be for beneficial use projects that would be considered as demonstration projects because of their use of unconventional materials or technologies.

RESPONSE llA.8: Task Force agencies are actively pursuing a method to more fully involve the academic community, mindful of Federal laws governing advisory groups. The EPA is represented in this effort.

RESPONSE llA.9: The Restoration Plan has been revised to reflect a strong implementation strategy. The basin plans have been revised and integrated, critical projects are defined in a consistent manner, and the Restoration Plan presents a vision of successful coastal wetlands restoration.

requirement of the CWPPRA for a comprehensive plan. Full consideration of these matters would lead to a strong endorsement by EPA and a determination of "Fully Responsive" on the Final Plan and EIS. To resolve these comments within time constraints imposed by Congressionally mandated schedules, EPA suggests the Task Force agencies follow the same procedure which ouccessfully began the planning process -- hold a strategic planning meeting and then form an interdisciplinary planning team, including science advisors, analogous to the tears which prepared individual basin plans. EPA is prepared to commit its best effort to this total quality team approach. This integration of the basin plans would close the loop begun at the outset of the planning process and lead to a cohesive and truly visionary plan.

11A.10 Cont.

Detailed comments. EPA's more detailed comments are enclosed. In addition, we are forwarding comments prepared by EPA's contractor, Lee Wilson and Associates, along with comments by Woody Gagliano, an EPA subcontractor. EPA has supported CWPPRA reviews by numerous research scientists in Louisiana. Enclosed with this letter are comments developed by Ivor Van Heerden, Don Davis and Michael Barber; by Robert Chabreck; and by Gary Shaffer. Comments from other scientific advisors ray be submitted directly to you. Also, we believe that a set of substantive comments will be provided directly from Louisiana State University, on behalf of a consortium of academic experts supported by EPA funding. This letter, and the enclosures designated as EPA comments, are the submittals which state EPA's official position.

11A.11

Classification of EIS. We classify the RP and DEIS as EC-2 (Environmental concerns - insufficient information). Specifically, the EPA has environmental concerns regarding: the need to effectively use natural processes, including sediment accretion, as the cornerstone of restoration plan; the need for high priority demonstration projects, predictive modeling and input from a Science Advisory Board, in order to promote environmentally and technically sound projects and to develop innovative technologies; adverse impacts which ray result from projects which promote highly managed ecosystems which are costly to maintain, vulnerable to failure, and incapable of supporting natural diversity; and cumulative impacts, especially from the widespread use of marsh management and hydrologic modification projects implemented prior to adequate NEPA review. We are also concerned that a procedure be adopted and used for NEPA compliance and final decision-making by each Task Force agency, ensuring adequate public review of environmental assessments and EISs.

1A.12

Our classification will be published in the FEDERAL REGISTER according to our responsibilities under Section 309 of the Clean Air Act.

RESPONSE llA.lO: A strategic planning meeting was held on October 12, 1993 in order develop a strategy for revising the report. The meeting resulted in the formulation of two interdisciplinary planning teams (work groups), as proposed in your comment. One team was tasked with revising the basin plans so that they are more consistent and integrated. The other team had the responsibility to edit and revise the main report with emphasis on developing a strategy for implementation of the Restoration Plan. The EPA or its contractors and academic and environmental community representatives were represented on both planning teams.

RESPONSE llA.ll: We have responded to all comments concerning the EIS. Comments submitted by Task Force agencies on other parts of the report (executive summary, main report, and basin plans) have been reviewed and used by the planning teams (discussed in previous response) as they felt it appropriate. The great majority of those comments were editorial in nature. Those comments are reproduced in this document but are not responded to in detail.

RESPONSE llA.12: As described in our responses above and elsewhere in this appendix, we strongly feel that the final Restoration Plan addresses the EPA's stated environmental concerns. Nevertheless, we believe that many of the concerns expressed in this comment are relevant to the Restoration Plan but not to the programmatic EIS. The adequacy of the EIS should not, in our opinion, be based on what one agency's views are on the proper course of action for implementing the Restoration Plan. We believe that the EIS has performed its function by disclosing the potential effects of implementing the various types of projects proposed for the Restoration Plan.

In conclusion, we appreciate the opportunities to reviev the RP and DEIS. Should you have any questions or need of assistance, contact the Regional EIS Coordinator, Norm Thomas, at 214/655-2260. Please send our office five (5) copies of the Final RP and EIS at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, 401 M Street, SW. Washington D.C. 20460.

incerely yours,

S cer ly

Joe D. Winkle
Acting Regional Administrator

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 11, 1993

Colonel Michael Diffley
District Engineer
P.O. Box 6026.7
New Orleans, Louisiana 70160

Dear Colonel Diffley:

The Environmental Protection Agency (EPA) is reviewing the Draft Louisiana Coastal Wetlands Restoration Plan and Draft Environmental Impact Statement (EIS), in accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act. Our official written comments will be provided to you as chairman of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Task Force by August 30, 1993, the close of the required comment period. EPA will rate the EIS and publish comments in the Federal Register in accordance with our mandates.

We have identified several areas of concern in our early review, which are listed here for your information.

11B.1 There is lack of emphasis on "Demonstration" type projects which can lead to development of cost-effective approaches with innovative and better technology that meet the specific needs and challenges of restoration in coastal Louisiana.

11B.2 There should be identification of and specific provision for predictive hydrologic modellingwhich would allow the Task Force to better judge the effectiveness of potential restoration measures, and result in better decision making in the funding and implementation of projects.

11B.3 The plan should provide for a straightforward approach to recognize and act on immediate and major needs wherever they occur, rather than presenting a "broadcast" of projects across the coast. The prioritization process for allocation of resources does not adequately address the need for coastal Louisiana wetlands to continue to provide for the long term fisheries production necessary to help feed the nation; alternative approaches which give preference to this resource should be pursued.

11B.4 It should be made very clear and emphasized that without effective action to create and restore wetlands the fish and shellfish industry and recreational users may see their resource collapse in a relatively short time; this impact should be quantified as fully as possible.

Printed on Recycled Paper

RESPONSE 11B.1: See Response 11A.6.

RESPONSE 11B.2: See Response 11A.5.

RESPONSE 11B.3: See Responses 11A.1, 11A.2, and 11A.3. Alternative approaches (projects) that would give preference to fisheries resources have not been proposed for CWPPRA funding. Any approaches that you believe are appropriate for CWPPRA funding should be submitted for Task Force consideration.

RESPONSE 11B.4: We are not aware of any scientific documentation available concerning the time until a total collapse of the fish and shellfish industry in Louisiana. We have included a reference to Browder et al. (1988) under Section 3.3.6.3. of the EIS. They suggest a decline in shrimp yield may begin about 1995 due to a decrease in marsh-water interface.

11B.5 We are concerned and must raise questions regarding marsh management and judgments made in the EIS on this type of project. Information presented is inaccurate and misleading. Further, long term and cumulative adverse impacts have not been addressed. We do not believe that marsh management practices have been proven to be effective in preserving and restoring wetlands. Certainly projects relating to levees, impoundments. and water control structures, which may impact the fish and shellfish industry should not be priority projects for implementation. Our previous concerns on analysis of this type of project have not been addressed.

11B.6 We believe there is need for the establishment of a science advisory board to help ensure that the decisions of the Task Force are based on most up to date scientific information and analyses.

11B.7 We call on you to ensure that the total plan development and EIS preparation process is participated in by all the member agencies. This opportunity is taken to thank the Task Force for this public hearing and for hearing these initial comments. These and other issues will be addressed in our official comments. And, in accordance with the requirements of NEPA, these comments as well as those of others must be addressed in a Final Impact Statement and Restoration Plan. If it is determined that significant changes are necessary, then a Supplemental Draft Plan and EIS must be provided for public review and comment.

Sincerely,

Norm Thomas

Norm Thomas
Chief, Federal Activities Branch

RESPONSE 11B.5: Although we believe that the draft version of the report treated marsh management in a fair and unbiased manner, we have substantially revised the report based on comments received. You are aware that some Task Force agencies feel strongly that marsh management should play an important role in coastal wetlands restoration, especially in areas isolated from sediment and freshwater sources. Your previous comments (submitted for the preliminary draft version of the report) were brief and did not address marsh management. Hence, we do not understand the last sentence of your comment where you state that your previous concerns about marsh management have not been addressed.

RESPONSE 11B.6: See Response 11A.8.

RESPONSE 11B.7: The basin plans have been reorganized and now showcase long-term strategies for restoration of natural processes, especially reintroduction of freshwater and sediment from major rivers into the coastal marsh. We do not believe that changes in the EIS have been significant enough to warrant a supplemental EIS.

EPA COMMENTS ON ENVIRONMENTAL IMPACT STATEMENT

GENERAL COMMENTS.

1C.1 The use of natural processes was determined very early in CWPPRA planning to be necessary and at the core of successful restoration of coastal Louisiana wetlands. The EIS should evaluate the project types as to their relation and potential to utilize or maximize the natural wetland restoration processes that exist.

1C.2 Many of the analyses contained in this EIS are appropriate and adequate. However, we are very concerned that information presented as assessment of impacts from the marsh management type of project is misleading, inaccurate, and very promotional of activities in which a few agencies have a vested interest. We believe most benefits are speculative and that clearly significant adverse impacts will occur to valuable marine fisheries. There appears also to be potential adverse impact to endangered species, sea turtles, with loss of access to hundreds of thousands of marsh acres. The potential for marsh loss due to reduced sediment flux and impacts on marsh accretion processes is not addressed. Long term and cumulative impacts are not addressed. It should be clearly noted that the Corps of Engineers made a determination that marsh management activities have potential for significant adverse impacts to the environment and is preparing an Environmental Impact Statement on that type of project to fully analyze the impacts. We are concerned that this type project is shown in virtually every basin as a priority. No permitting of this type project should occur, until fully analyzed, whether or not CWPPRA funded.

1C.3 The EIS must call for development of a sediment budget and a sediment management plan in order to meet the special needs of an area that is recognized to have sediment deficit as a major cause of wetland loss, if successful restoration in coastal Louisiana is to be pursued.

1C.4 Additional needs basic to the planning effort is a freshwater budget and hydrologic modelling applied in every basin.

1C.5 The use of hard structures is an increasingly controversial matter for restoration. For example, adequate analysis is not provided on proposed segmented breakwaters.

1C.6 The National Environmental Policy Act compliance procedures described for projects that are listed by the CWPPRA Task Force for funding are of significant concern to us. The dual process included in this document is a policy that has not and should not be adopted. The Federal action of funding and carrying out restoration should provide for public input to the decision making.

1C.7 The State Conservation Plan provided for in CWPPRA should be explained. CWPPRA provided for funding to the State of Louisiana

RESPONSE 1lC.1: We do not believe that it is necessary to relate project types to natural processes. We agree that projects that would mimic the natural processes of freshwater and sediment distribution ("fluvial processes") should be pursued diligently and implemented where feasible and we have revised the EIS to reflect a preference for these types of projects in areas where they are feasible.

RESPONSE 1lC.2: See Response 118.5. We have revised Section 3.3.1. of the EIS to more accurately state reasons why the USACE is preparing an programmatic EIS on marsh management.

RESPONSE 1lC.3: The main report has been revised to indicate that development of a sediment and freshwater'budget for the Mississippi River below the Old River Control Structure is the priority planning study necessary for long-term commitments of resources. Section 2.3.5. of the EIS has been revised to include discussion of sediment deposition as the natural process of delta development and the need for development of a sediment budget and management plan.

RESPONSE 1lC.4: We are not prepared to commit the CWPPRA to funding hydrologic modelling and freshwater budget studies for each hydrologic basin. Such a commitment of resources and funds would require a Task Force decision.

RESPONSE 1lC.5: We are not aware that the use of hard structures is becoming increasingly controversial. We do know that hard structures can sometimes cause erosion problems when used along the gulf shoreline where they can interrupt the littoral drift process. Segmented breakwaters are covered under the category of shoreline erosion control with structures. We have included additional discussion of segmented breakwaters under the various sections that discuss the effects of this project type.

RESPONSE 1lC.6: The minutes of the August 12, 1991 Task Force meeting contains the following item: 'National Environmental Policy Act compliance for projects on the Priority Project List will be achieved according to each lead Task Force member's existing regulations and administrative procedures. The Task Force voted unanimously in favor of this motion.' The minutes were approved at the September 24, 1991 meeting. This decision by the Task Force pertained specifically to the 1st Priority Project List. Since no further discussions of this topic have taken place at the Task Force level, we can only assume that this procedure is to be followed for projects on subsequent lists and for projects implemented through the Restoration Plan. If you believe this is an improper procedure, we suggest that you request that it be revisited by the Task Force.

to develop a Conservation Plan when requested by the Governor. The Plan is to include measures the State shall take to achieve a goal of no net loss of wetlands as a result of development activities; a system to account for gains and losses of coastal wetlands for evaluating the attainment of no net loss; a program for public education on need to conserve wetlands; a program to encourage
11C.7 Cont. development to use technologies that have negligible environmental impact. When the plan is complete and approved, the cost-share required of the State for CWPPRA implementation will be reduced from 25% to 15%. The required Agreement to be made between the designated State agency (which has responsibility for implementing and enforcing the plan), the EPA (who administers the Grants), Corps of Engineers, and Fish and Wildlife Service, is being developed. The Agreement is also to obligate the State to implement the Conservation Plan.

SUMMARY

The statement that the priority'lists are to consist of relatively small-scale projects which can be constructed within five years", is inaccurate on both parts. Quotes from the Act should be
11C.8 displayed for the public to make their own judgments regarding the arbitrary limits on funding of projects that are evolving with the planning effort. There is nothing to prevent funds to be dedicated for large appropriate projects over multiple years.

The term NEPA compliance should be used rather than just documentation. The public should be given the procedures to be expected of each lead agency and estimated time table as to when to
11C.9 expect detailed information on listed projects. It is also important that all the policies used by the Task Force and committees be included in the EIS for comment and review, especially as there are no implementing regulations for CWPPRA.

PURPOSE AND N E D

1.3. Goals of this Programmatic EIS. Paragraph 4 should include information on the increased funding available to Year 2000. Paragraph 7. The general comments on NEPA made above apply here as well. The federal CWPPRA actions of funding and implementing
11C.10 projects with Federal funds requires NEPA compliance. It would be appropriate for the lead Federal agency and for the Corps with its 404 permitting action to be a cooperating agency, not the procedure proposed here.

ALTERNATIVES

NO ACTION (WITHOUT CWPPRA)
This section appears to be stating that restoration will occur with CWPPRA about as well as without CWPPRA. The type of restoration projects, the resources, and their performance should be described
11C.11 for the various programs that exist or would likely exist without CWPPRA. A comparison of time required for implementation of comparable efforts would be useful.

RESPONSE llC.7: We have included the information contained in your comment under Section 2.2.2.

RESPONSE 11C.8: The statement in the EIS has been revised to more accurately reflect the language of the CWPPRA.

RESPONSE llC.9: We have substituted "compliance" as suggested. We believe that timetables for development of detailed information on listed projects is inappropriate at this time. The policies that have been adopted by the Task Force and its committees have not been synthesized into a document suitable for public disclosure in this format. All policies and other information regarding the Task Force are available to the public through Freedom of Information Act procedures.

RESPONSE llC.lO: We have included the information about increased funding, as requested. As for NEPA compliance, please refer to llC.6.

RESPONSE llC.ll: We believe we have stated properly that some efforts towards coastal restoration will likely occur without the CWPPRA, but that the CWPPRA offers the only hope towards a comprehensive coastal wetlands restoration program. We have also described the types of projects and specific projects that would be implemented. We have rearranged the referenced section of the report to emphasize the importance of the CWPPRA.

ALTERNATIVES CONSIDERED IN DETAIL

11C.12 2.3.2. MARSH MANAGEMENT. The information that the Corps of Engineers has made a determination that marsh management activites may have a significant adverse impact on the environment and is preparing an Environmental Impact Statement should be added here. The present status should be given as well as disposition on any permit applications in the interim.

11C.13 This entire. section requires reconsideration and revision. Statements of impact should be objective and based on scientific understanding, actual measurement and analysis. The last sentence of paragraph 6 should be revised to state the uncertainties involved when attempting to use these practices to deal with wetland loss, or, add 'however, the practice is not proven to be effective st reducing or offsetting marsh loss".

11C.14 2.3.2.1. Passive Management. Clarification of the first paragraph is needed, what is meant by 'buffering some relatively minor environmental problems"?

11C.15 **Paragraph 5. Boat bays are seldom used, this statement gives a false impression. "Modern" structures are not apparently "management effective". While the actual intent may be different, the statement does indicate that there is constriction of water movement, effects on soil growing conditions, and reduction in the sediment dynamics from the modern structures. It implies a reduction in these effects, but none are quantified for determination of whether the potential reduction of bad results in less than bad. The statement that structures can be placed to shunt sediment laden waters to sediment deficit areas is not demonstrated.**

11C.16 The dismissal of passive management as unimportant because such specific projects are not likely to be developed under CWPPRA, is misleading. The management strategy usually contains phases with the maintenance phase having structures operated essentially as fixed-crest weirs, and the associated adverse impacts of passive management apply.

11C.17 The unavoidable impacts must include decrease in sediment deposition (Reed, 1992).

11C.18 2.3.2.1.1. Fixed-crest Weirs. Herke (1987) conducted a long term study on this type structure which should be included. Findings should be stated including that production was reduced up to 93% compared to a control area.

11C.19 2.3.2.1.2. Slotted Weirs. The last paragraph should be deleted, or Paragraph 1. Quantify the adverse effects on marsh soil conditions (nutrient availability) and the reduction of sediment when

RESPONSE 11C.12: We have moved the discussion of the USACE's preparation of a programmatic EIS on marsh management in Louisiana to Section 3.3.1. Since work began on the marsh management EIS, permit applications for marsh management have been processed to a decision. We do not believe it is appropriate to give an accounting of those permit actions in this document. That information will be included in the marsh management EIS.

RESPONSE llC.13: We believe that the section accurately describes what is involved with marsh management, not what the effects may or may not be. All of the effects of marsh management, previously included in this section, have been moved to Section 3, where we discuss the findings of studies and observations about marsh management that are available.

RESPONSE llC.14: We have made the referenced sentence clearer as to the desired effects.

RESPONSE llC.15: The information in the referenced paragraph has been restructured and is now contained in Section 3. We believe that the information portrays logical assumptions, based on currently available studies and literature.

RESPONSE llC.16: Passive management does not consist of phases. We have recognized that active management contains phases, the effects of which are discussed in detail.

RESPONSE llC.17: We have added the reference to Reed (1992) under Section 3.3.2.3.

RESPONSE 11C.18: Herke (1987) is referenced in Section 3.3.6.3.

11C.19 Cont. restricted to moving through the weir. Note also that the reduction to estuarine-dependent fishery production is significant.

2.3.2.2. Active Management. Paragraph 1. This section should address the uncertainties for success and the many variables that can impact on this type of activity, in addition to the inherent potential for failure due to the long term loss of sediment input and the adverse impacts on sediment accretion process in cases where some input of sediment occurs. The potential for drawdown phases to alter soil conditions with compaction makes future drawdowns more unlikely to succeed. Additional information on drawdown:

11C.20

-Drawdown has been used in many areas outside Louisiana to alter species composition of emergent vegetation. These are not persistent after reflooding and are maintained by repeated drawdowns.
-Drawdown is effective in promoting seed germination if soils remain moist and not subject to intense drying.
-In brackish soils, drawdown can cause changes in salinity and soil chemistry which are detrimental to vegetation.
-There is little evidence to show any effective increase area of cover or even vigor of emergent vegetation.

11C.21 2.3.3. HYDROLOGIC RESTORATION. The historic patterns and rates of hydrologic exchange should be explained. Hydrologic restoration actually is likely to set up a new hydrologic system within a relatively small area of wetlands.

11C.22 The phenomena of tidal scour should be detailed with scientific data. Studies by Wang (1993) should be used which show that overmarsh flow rates are insufficient to resuspend sediments from the marsh surface.

11C.23 Some of the features of hydrologic restoration as described here are similar to marsh management and would have the same adverse impacts from those features.

11C.24 2.3.5. SEDIMENT DIVERSION. The discussion on limitation of sediment points to the need for a factual sediment budget.

11C.25 2.3.6. FRESHWATER DIVERSION. A detailed study and report should be provided regarding the limits on freshwater available from the Mississippi River and distributaries. Information provided is very vague.

11C.26 2.3.7.OUTFALL MANAGEMENT. Information on outfall management plans which are being developed indicates that features of marsh management (levees, impoundments, control structures) will be included which would have the same types of impacts as marsh management.

11C.27 2.3.8. MARSH CREATION WITH DREDGED MATERIAL. The "red mud" should be described as earth sediments derived from top soil that contains

RESPONSE 11C.19: We have moved the last paragraph to Section 3. We believe that our inference is valid. It is reflected in the assumptions made for the Wetland Value Assessment methodology, specifically in the variable that accounts for access of fisheries and exchange of water and sediments.

RESPONSE 11C.20: We have moved all discussion of effects to Section 3 where we believe the major uncertainties and potential adverse effects of marsh management have been adequately disclosed.

RESPONSE 11C.21: It would appear from your comment that you are asking for a treatise on the historic hydrology of coastal Louisiana. Such discussions are beyond the scope of this EIS. We disagree with your comment that hydrologic restoration is likely to set up new hydrologic systems within relatively small areas of wetlands. Hydrologic restoration projects attempt to restore historic hydrology and many proposed projects (including one on the 1st Priority Project List) provide benefits to tens of thousands of acres of wetlands.

RESPONSE 11C.22: The term "tidal scour" is used to describe the effect that tidal water flow has on highly organic soils and flotant marshes found in the lower salinity areas of coastal Louisiana. It is common knowledge that tidal flows can remove organic material which supports live emergent vegetation and export it to the open waters of higher salinity areas.

RESPONSE 11C.23: We agree that some of the features of hydrologic restoration projects can also be incorporated into marsh management projects, but we disagree that the projects would have the same effects. We believe that the discussions presented in Sections 2.3.2. and 2.3.3. are sufficient to distinguish between the two project types and that Section 3 adequately assesses the differing levels of effects.

RESPONSE 11C.24: We have included a sentence stating that such a study is a priority.

RESPONSE 11C.25: We have included a sentence about the necessity for a study of freshwater and sediments in the Mississippi River.

RESPONSE 11C.26: We disagree that the outfall management projects, as currently proposed, would have the same or similar effects as marsh management. The methods by which these two different types of projects attempt to restore emergent vegetation are completely different and the two types of projects would be used in different areas. Marsh management would normally be used in areas isolated from freshwater and sediment input, whereas the opposite is true for outfall management.

11C.27 bauxite ore and has been processed for removal of alumina. The Falgout Canal South (TE-20) is also a proposed demonstration of a prototype for a regional system to mine, deliver, and distribute river sediment via pipelines and spray nozzle application. The XTE-43 demonstration project is titled Red-Mud Wetlands Restoration. XTE-66 is the Sediment System: Distribution Demonstration project using gravity flow of various sediments from perforated pipeline application.

11C.28 2.3.9. BARRIER ISLAND RESTORATION. The increasingly proposed use of segmented breakwaters for barrier island restoration will require significantly more information development, as well as modelling and engineering, than has been conducted at present. Potential adverse impacts include scouring, sediment starvation of other areas dependent on littoral drift for maintenance, potential for erosion on islands due to effect of waves that overtop barriers, as a few considerations to be made.

11C.29 2.3.10. SHORELINE EROSION CONTROL. Revise the last statement; breakwaters are not preferred even with these conditions - there are many other consideration to be made. See above comments.

11C.30 2.3.11. SHORELINE EROSION CONTROL WITH VEGETATION. If any of these species are preferred by nutria, the information should be included for possible avoidance.

AFFECTED ENVIRONMENT - ENVIRONMENTAL EFFECTS
SIGNIFICANT RESOURCES AND EFFECTS OF ALTERNATIVES

11C.31 3.3.1. INTRODUCTION. The third paragraph should be revised; it is very speculative and leading. The EIS should include this example of project type as one that will need extensive monitoring in order to obtain the CWPPRA required scientific evaluation. There are many variables that may impact on a given project of this type that withe present monitoring set up, if a project is successful, the reason will be unknown; the same is true if the project fails. Nothing new will have been learned. The statement here calling marsh management the most common form of restoration project is misleading: most common use has been for wildlife and waterfowl and hunter access. Data on actual success of restoration should be included.

11C.32 3.3.2. COASTAL MARSH. The approach to no-action should be reconsidered. Statements on the historical success of the other program restorations should be included, as well as level of funding and speed of implementation. The significant potential for CWPPRA should be expanded on, as well as the unique opportunity for speedy and positive effort.

11C.33 3.3.5.3. Marsh Management. Paragraph 1. The first sentence should be qualified in view of the uncertainties. In the third paragraph, the first sentence is misleading. If the rest of the paragraph is indicating that this type of project will be utilized for specific species management and recreation, then that is not meeting the

RESPONSE llC.27: We believe that referring to spent bauxite ore as "earth sediments derived from top soil" would be somewhat misleading. We have corrected our reference to the red mud demonstration project and have included the other demonstration projects that are referred to in your comment.

RESPONSE 11C.28: Barrier island restoration, as described in the EIS, does not include the use of hard structures. We have included a discussion of the need for studies on the suitability of segmented breakwaters for erosion control along the gulf shoreline (including barrier islands) under Section 2.3.10 (Shoreline Erosion Control with Structures). We have also addressed the potential for negative effects from the use of hard structures along the open gulf shoreline under Sections 3.3.2.10. and 3.3.2.11.

RESPONSE 11C.29: We have rearranged this section to distinguish between protection of inland shorelines and gulf shorelines. Many of the concerns over using hard structures along the gulf shoreline are not applicable to hard structures used for protection of lake, bay, and canal shorelines.

RESPONSE llC.30: None of the species mentioned for erosion control or revegetation efforts are preferred food for nutria. Nutria will, however, eat nearly all species of vegetation when they become overpopulated.

RESPONSE llC.31: We have added a degree of uncertainty about marsh management as per your request. There is nothing in the referenced paragraph about the CWPPRA monitoring program.

RESPONSE llC.32: Most of the information that you suggest adding to this section is contained in Exhibit 4 to the main report which lists all of the programs related to coastal wetlands in Louisiana. We have included a reference to Exhibit 4.

RESPONSE llC.33: Your comment refers to Section 3.3.2.3. The first sentence of paragraph 1 has been revised and relocated to the end of the paragraph. The degree of uncertainty is irrelevant at this point in the narrative; at this point we are only discussing management alternatives. The sentence in the third paragraph appears now in the second paragraph. We did not believe that the sentence you question was misleading, however additional examples are presented to clarify the meaning of the sentence.

11C.33 Cont. goals of CWPPRA.

11C.34 Paragraph 4. The study of Sweeney (1990) found that no passively managed areas produced net gains in marsh area. The information should be included.

11C.35 Paragraphs 15 and 16 and 17. Straightforward statements are needed in order to make the points. This is vague. The statement that marsh plants can withstand stressful changes for short marsh periods without lasting ill effects should be referenced for the scientific data: the discussion is on soils which do not change rapidly. Paragraph 18 should also be referenced.

11C.36 The discussions overall lack discussions on sustainability of any potential benefits. It also has failed to address the impacts to areas outside of and adjacent to marsh managed areas. Sediment accretion processes are not addressed.

11C.37 3.3.2.8. OUTFALL MANAGEMENT. Revise the statement on benefits to point out that outfall management has not been conducted. Since the plans at this point (Caernarvon) seem to include levees, structures, impoundments to retain water, for example, it appears the impacts of marsh management would apply to this discussion.

11C.38 3.3.2.9. MARSH CREATION WITH DREDGED MATERIAL. Add "on the short term" to the conclusory sentence. State how marshes created naturally (such as at mouth of Atchafalaya River) compare with marshes created with dredged material.

11C.39 3.3.2.10. SHORELINE EROSION CONTROL WITH STRUCTURES. Segmented breakwaters require much more information for a determination of direct and associated impacts; for example, the potential for sediment deprivation of other areas may be observed.

11C.40 3.3.5. WILDLIFE RESOURCES. Paragraph 5 should be revised. CWPPRA projects are to focus on restoring and creating emergent vegetation. The possibilities described here could be in conflict: therefore, not meeting the goals of CWPPRA.

3.3.6. FISHERIES RESOURCES

11C.41 3.3.6.1. Existing Conditions. The description of causes in the third paragraph should be revised to include subsidence and inundation. The role of 'saltwater intrusion" as being the thing that killed the swamp is not clear. The EIS should be consistent with the "causes section of the Plan.

11C.42 3.3.6.2. No-Action. Effort should be made to obtain information on timing of expected collapse.

11C.43 3.3.6.3. Marsh Management. The presumption that estuarine fish are beneficially impacted from a potential increase of submerged aquatic vegetation and emergent vegetation does not appear plausible if access is eliminated. The range of losses found by

RESPONSE 11C.34: We have added the reference to Sweeney et al. (1990).

RESPONSE 11C.35: We have restructured these paragraphs to make the discussion clearer and more to the point.

RESPONSE 11C.36: Sustain-ability of any restoration project in the long-term is uncertain. It is not necessary to mention this for every project type. We agree with the second sentence of your comment. The narrative points out the inconclusive effects of management within the managed areas; far less is known of the effects outside of managed areas. We do not believe it is appropriate to hypothesize about the potential for such impacts. Contrary to your comment, we have discussed sediment accretion processes.

RESPONSE 11C.37: There is a statement under Section 2.3.7. that no outfall management projects have been built. It is not necessary to repeat it in the referenced paragraph. As stated previously, we do not believe that the impacts of marsh management apply to outfall management. Both have a potential for reducing migratory estuarine fisheries access, but to differing degrees.

RESPONSE 11C.38: We have revised this section to indicate that marsh created with dredged material becomes increasingly similar to natural marsh as its age increases.

RESPONSE 11C.39: We have included additional information concerning potential impacts of segmented breakwaters used along the gulf shoreline.

RESPONSE 11C.40: Projects are not precluded from enhancing animals species populations or habitats although, we agree, the thrust of the CWPPRA is to address loss of vegetation.

RESPONSE 11C.41: There is nothing in the referenced paragraph about saltwater intrusion being the "thing that killed the swamp". We deleted the phrase about saltwater intrusion destroying fresh marsh vegetation.

RESPONSE 11C.42: See response to 11B.4.

1C.43 Cont. Herke should be included as it is significantly more than 50%.

1C.44 3.3.6.7. Outfall Management. This section should be revised to include the adverse impacts which would occur from the marsh management features of outfall management.

3.3.7. THREATENED AND ENDANGERED SPECIES

1C.45 3.3.7.3. Marsh Management. The last statements on sea turtles occurrence should be revised and utilize the information from the Rabelais studies, and additional information available from NMFS at St.Petersburg, Florida.

1C.46 3.3.7.10. Barrier Island Restoration. EPA has consulted with the FWS and with NMFS on the threatened and endangered species associated with Isles Dernieres, Phase O and I. NMFS concurred with the EPA determination that no adverse impact would occur to sea turtles from restoration utilizing sediment and vegetation. The consultation did not include any potential use of hard structures such as segmented breakwaters as are potentially proposed by DNR for restoration at Raccoon Island. Whiskey and Trinity Islands.

1C.47 3.3.7.15. Herbivore Control. Explain the statement that long-term beneficial effects would be expected from preservation of wetlands.
It appears the impacts should be related to the measures to be used for control.

3.3.9. WATER QUALITY.

C.48 3.3.9.1. The statement on cause of wetland loss should be revised. Increased salinity levels in wetlands is only a part of the analysis and is largely a symptom.

3.3.10. NATIONAL WILDLIFE REFUGES, STATE WILDLIFE MANAGEMENT AREAS, AND NATIONAL PARKS

C.49 The effects (beneficial and adverse) of all the project types except barrier island restoration should be the same as the impacts for coastal marshes and/or swamps. Sediment diversion involves potential losses to sea grass beds on refuges as well. Mitigation would be a significant consideration.

3.3.11. PROPERTY OWNERSHIP AND VALUES

C.50 3.3.11.1. The question of ownership of new land is important and should be thoroughly addressed and included in the EIS.

3.3.16.2. BUSINESS AND INDUSTRY

C.51 3.3.16.2.2. No Action. Reference should be made to Figure 1 in the Executive Summary for a graphic realization of the relocations required for individual, families, and communities,

RESPONSE llC.43: Nowhere do we state that access of estuarine fisheries species into managed areas is eliminated, but we have clearly stated that estuarine fisheries populations may be reduced. We have included information on the reduction in fisheries resources as found in studies by Herke and others.

RESPONSE llC.44: We believe the section is adequate as written.

RESPONSE llC.45: The sentence referenced in your comment is based on reviews of numerous publications on sea turtles conducted for preparation of biological assessments for USACE projects. The NMFS has offered no comments on this statement.

RESPONSE llC.46: We have included a statement about the potential for segmented breakwaters affecting endangered species under Section 3.3.7.11.

RESPONSE llC.47: The statement you refer to means that efforts to reduce populations of herbivores (nutria and muskrat) that have become overpopulated would benefit wetlands and thereby have beneficial effects on the threatened and endangered species that depend on the wetlands for their life requisites.

RESPONSE llC.48: We have revised our statement to indicate that saltwater intrusion often contributes to wetland loss, but is not the sole cause.

RESPONSE llC.49: Section 3.3.10. is meant to give the reader an overview of the extent to which projects proposed in the Restoration Plan may effect existing refuges, management areas, and parks. We mention in Section 3.3.10.6. that diversion of the Mississippi River into Breton Sound would have the potential to effect seagrass beds in the Breton National Wildlife Refuge. Mitigation for CWPPRA has not been brought up before. It is our opinion that projects implemented through the CWPPRA should produce positive net environmental effects and that mitigation would not be necessary. If the positive effects of a project don't outweigh the negative effects then it shouldn't be built. While projects should be designed to minimize negative environmental effects and include environmental enhancement features where appropriate, it seems absurd that environmental enhancement projects would require compensatory mitigation.

RESPONSE llC.50: We have included much of Louisiana Attorney General's opinion 92-472 which should clarify the issue.

11C.51 Cont. infrastructure lost, individual and industrial property lost in less than 50 years if the shoreline exists at the location predicted.

3.3.16.3. COMMERCIAL FISHING AND TRAPPING

11C.52 3.3.16.3.3. Future With CWPPRA Projects. The statement here has not considered the many adverse impacts to fisheries likely to occur from the marsh management, outfall management, and in some cases the projects called hydrologic restoration. The claim that commercial fishing would benefit cannot be made. A display of the acreages affected by these activities indicates a significant cumulative impact.

3.3.16.8. DISPLACEMENT OF PEOPLE AND BUSINESSES

11C.53 3.3.16.8.2. No Action. Again note the map, Figure 1, in the Executive Summary, to estimate the dislocations expected when the shoreline is as shown there in less than 50 years.

3.4 CUMULATIVE IMPACTS OF ALTERNATIVES

11C.54 3.4.1. The public should be informed as to procedures for obtaining the specific project NEPA documents that are mentioned.

11C.55 It is very difficult to get any idea of cumulative impacts from this section. The matrix of impacts should be used to total impacts where possible.

COMMENTS: TABLE 1 - SUMMARY OF COMPARATIVE IMPACTS OF PROJECT TYPES

This table is very important and will require revision based on the comments provided above.

11C.56 An important issue to the plan development, as determined in the strategy development very early, is the use of natural systems to obtain restoration of coastal wetlands. The relation of each type project to the natural systems should be included, requiring an expansion of the table.

Specific comments are provided for each alternative project type on the various resources.

NO ACTION

Coastal Marsh. In 20, 50 years will the loss be significant or insignificant?

Submerged Aquatic Vegetation. Consider whether this may be an area where SAV would actually increase as areas break up further inland.

Fisheries. The fisheries present maintenance is natural, possibly

RESPONSE 11C.51: We have included a reference to Figure 1 of the Executive Summary in Section 3.3.2.2.

RESPONSE 11C.52: We have included an additional paragraph which discusses the potential for negative effects from certain types of projects.

RESPONSE 11C.53: We have included the information that you requested. We have also included a table and additional information on the possible dislocations that may be necessary if no action is taken.

RESPONSE 11C.54: As far as we know, no procedures or guidelines have been developed by the Task Force or any of its committees for public disclosure of project-associated NEPA documentation. At this point, we can only suggest that anyone who wants to receive NEPA documents on CWPPRA projects should specifically request to be included on all mailing lists. We have added this suggestion to our discussions in Section 1.3. We are compiling a mailing list of those to whom the draft EIS was sent, plus those who provided comments. This list will be made available to all Task Force agencies for their use in distributing NEPA documents if they so desire.

RESPONSE 11C.55: See Response 11A.4.

RESPONSE 11C.56: The rest of the comments provided in this package are suggested changes to Table 1 of the EIS. We do not believe that relating the various project types to "natural processes" would serve a useful purpose. We believe that sediment and freshwater diversions are an attempt to mimic natural delta processes and should be the preferred action where feasible. We have included this widely-held opinion under the descriptions of these two project types.

We have used the proposed revisions to the table where we felt they were appropriate. Some of the suggestions were too long to be included in such a summary table. We have not specifically responded to individual comments on the table. Some of the comments on Table 1 provided by Lee Wilson and Associates (Comments 11E.1 through 11E.39) are similar to the remaining comments in this package and have been addressed individually.

elevated due to human developments. Revise and also include the information that decline will be rapid after a certain point of degradation is reached.

Threatened and Endangered Species. Add sea turtles to the list. Impact should be'Habitat loss will impact these populations.

Oyster leases. How is the first statement known to be true in all basins - should be checked out. Closure is due to pollution.

Water Quality. How sificant will the few diversion projects be in view of the coast wide problem with salinity? Wetlands provide a natural purification process which will be lost, ambient water quality in the reduced area of wetlands due to runoff will be degraded. Except for the diversion areas, salinity will increase.

Natural Processes. No action will see a continuation of alteration and additive fragmentation.

MARSH MANAGEMENT

Coastal Marsh. The second statement is inaccurate and should be made factual; scientific data should be used. The loss of sediment and impacts on marsh accretion should be included. Subsidence will not be offset.

11C.56 Cont.

Cypress Swamp. State the potential adverse impacts.

Wildlife Resources. Marsh management does not create new marsh, so if successful only the present habitat value would be retained, and not increased.

Fisheries Resources. Fishery production is adversely affected; populations of marine species have not increased. Detail the impacts on access. State that potential for significant cumulative impacts can be demonstrated utilizing the acreage that would be leveed and controlled for access and the percent losses which have been demonstrated to occur.

Threatened and Endangered Species. Significant cumulative impacts may occur to sea turtles with loss of the access for the organisms and reduced input to food to estuarine food chain. NMFS Endangered Species Office has pointed out need for consultation on the potential impacts to sea turtles.

Water Quality. Impacts to the adjoining marsh areas provide for a potential reduction in water quality on a more regional basis. These effects should be addressed.

Wildlife Refuges. Effects of potential land loss, loss to fisheries production, etc. would be same as to coastal marsh and swamps, depending on the area.

Property Ownership.

Land value would decrease with increased loss.

Flood Protection. Managed areas will provide less buffering effect for storms.

Navigation. Delete last sentence. Boat bays are not commonly used.

Water levels for transportation in the project areas may be adversely inundating marsh areas.

Recreational Opportunities. Fishing for migratory species likely will be reduced.

Socioeconomics. Adverse impacts to commercial and recreational fishing. Does the existing statement mean that hunting and trapping income would increase for the landowner?

11C.56 Cont.

Natural Processes. Works against natural system.

HYDROLOGIC RESTORATION

Coastal Marsh. Benefit related to tidal scour is questionable. Delete until issue is addressed.

Refuges, Areas, Parks. Same question on tidal scour is pertinent.

Flood Protection. Flood protection should be benefitted if channelized flow is reduced and natural flow over marshes is obtained.

Natural Processes. Restores natural system to some extent.

Comment Package 11D

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX A
PONTCHARTRAIN BASIN

Sherwood M. Gagliano
August 22.1993

General Comments and Recommendations -

The report is well done, but the alternatives selected fail to deal effectively with three major problems in the Pontchartrain Basin: 1) marine tidal invasion through the MRGO; 2) maintenance of the land bridge between Lakes Pontchartrain and Borgne, and; 3) restoration of overbank freshwater introduction into the upper basin.

The Mississippi River-Gulf Outlet should be closed at Bayou LaLoutre.

A fresh water diversion should be constructed from the Mississippi River into the upper end of the Blind River drainage in the Lake Maurepas fresh swamp basin instead of the proposed Bonnet Cam location.

There should be one or several soft shoreline pilot projects utilizing different materials and designs before major expenditures are made for rock breakwaters along muddy shorelines.

Lake Pontchartrain Basin, Specific Comments -

11D. PONT1 pp. 16-17 Alternative C, Bonnet Carre Diversion plus M R G O Bank Stabilization/Marsh Creation. - The Mississippi River-Gulf Outlet (MRGO) is the single greatest cause of land loss in the Pontchartrain Basin. Losses related to the MRGO are ongoing and cumulative. Several alternatives were considered which address this problem. The one chosen (Alternative C), does not provide a realistic solution. Closure of the MRGO is the only effective remedy. A solution to a problem is only cost effective if it works.

11D. PONT2 p. 17 The area of the Pontchartrain Basin with the greatest need for restored overbank flooding is the swamp area in the upper end of the basin around Lake Maurepas. The Bonnet Carre diversion is the major project in the basin proposed for freshwater introduction (primary purpose of freshwater diversion is to compensate for loss of overbank flooding due to flood protection levees). The Bonnet Cam diversion will direct the overflow water into the wrong area of the basin. The fresh water swamps of the Yaurepas area will derive only minimal indirect benefits from a diversion at Bonnet Cam. The major benefits of Bonnet Carre are fisheries enhancements in the lower Pontchartrain Basin and Mississippi Sound. While these are worthy objectives, the cost benefits of a freshwater diversion at Bonnet Cam are questionable, particularly in reference to wetland benefits. The appropriate place for a freshwater diversion designed for wetland benefits in the Pontchartrain Basin is into the swamps of the upper Blind River drainage.

11D. PONT pp. 26-27 A large amount of money is proposed for protection of soft shorelines in the upper end of Lake Pontchartrain and around Lake Maurepas. The rock breakwater structures proposed are expensive and may not be feasible. The sediment in most of the project areas is too soft to support this type of structure. These structures are unproven in this setting. There should be one or several soft shoreline pilot projects before major expenditures are made for this purpose.

11. PONT4 p. 27 Preservation of Pontchartrain/Borgne Land Bridge (Feature 3). - Not enough priority is placed on protecting the critical barrier between Lake Pontchartrain and Lake Borgne. The cost effectiveness evaluation utilized falls shon in establishing priority for restoration and protection of the wetlands in this critical barrier.

11D. PONT5 pp. 28-29 Wetland restoration and creation in salt marshes of the lower basin should have low priority.

RESPONSE 11D.PONT1: The Bonnet Carre Freshwater Diversion deals not only with the high salinity aspect of marine tidal invasion, but also provides nutrients (and some fine-grained sediments). As described on pages 23-24 of the Pontchartrain Basin appendix, the diversion, plus the bank stabilization of the MRGO, are more cost effective than closing the MRGO, an economically viable waterway.

RESPONSE 11D.PONT2: In the final plan, two small freshwater diversions are proposed for the upper basin (Bayou Manchac and Blind River). The USACE considered and eliminated Blind River (during the Mississippi-Louisiana Estuarine Areas Feasibility Study) as a site for a major freshwater diversion because of the cost of the massive number of relocations necessary. In addition, the necessary outfall channel would cause extensive environmental damage to cypress-tupelo swamp.

RESPONSE 11D.PONT3: A demonstration project (XPO-92) to compare several methods of hard and soft shore protection is proposed. As we learn more about which structures are most cost effective for the various site-specific conditions, these will be utilized as appropriate in all shoreline protection projects.

RESPONSE 11D.PONT4: The plan identifies preservation of this land bridge as a key strategy and 9 short-term critical projects are proposed to prevent the loss of this barrier to marine influence. Cost effectiveness is not the only criteria for project selection.

RESPONSE 11D.PONT5: We do not agree. Opportunities for marsh creation should not be ignored. The material dredged from the MRGO provides a significant opportunity to create marsh in the lower basin.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX B
BRETON SOUND BASIN

Sherwood M. Gagliano
August 20,1993

General Comments and Recommendations -

This is the most suitable hydrologic unit along the Louisiana coast for initiating controlled freshwater diversions and controlled delta building.

The selected plan consists of: 1) managing outfall from existing freshwater diversions; 2) repairing of barrier ridges and controlling water flow between ridges; 3) enhancing overbank flow below Bohemia; 4) building a new subdelta lobe, and 5) buildiig new barriers. This is a dynamic, well balanced plan appropriate for the setting and processes of this basin.

11D. BRET1 The outfall management plans for the various diversions and the proposed subdelta should be based on a long term conceptual plan for the succession of landform, vegetation, and process changes that will unfold as the diversions progress. Projections should be made of future geography and habitat conditions. The plan should include provisions for channel training.

11D. BRET2 The operational plan should include real time monitoring of process parameters (discharge, hydrology, water levels, tides, water quality, sediment transport, temperature. etc.). This data should be used in conjunction with computer models as the basis for operating water control structures.

11D. BRET3 A feasibility study of the relocation of the Mississippi River into Breton Sound should be conducted. This diversion location should be compared with other alternative subdelta locations within the Breton Sound Basin and other areas. The proposed re-muting of the navigation entrance of the Mississippi River to Breton Sound should be compared to a new entrance on the east descending bank in the vicinity of Empire, Louisiana A commitment of 70 percent of the Mississippi River flow to this subdelta would preclude other smaller subdeltas in other critical areas.

11D. BRET4 The report should include references.

RESPONSE 11D.BRET1: This thought has been incorporated into the description of uncontrolled sediment diversion (PBS–4) on page 22 of the Breton Sound Basin appendix.

RESPONSE 11D.BRET2: The CWPPRA monitoring protocol will be used to finalize monitoring during feasibility studies.

RESPONSE 11D.BRET3: A feasibility study will be conducted on all diversions sites to determine the optimal basin and site or sites.

RESPONSE 11D.BRET4: References have been included.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX C
MISSISSIPPI RIVER DELTA BASJN

Sherwood M. Gagliano
August 20, 1993

General Comments and Recommendations

The most fundamental question regarding this unit is whether or not the lower delta should be maintained as a primary area of delta building. The delta building process is very inefficient in the lower delta area because: 1) the lobe extends out into deep water beyond the edge of the continental shelf; 2) foundation conditions are soft (the lobe is building out over a thick platform of poorly consolidatedclays which tend to slide and squeeze from the weight of new sediment added by the river); 3) the lobe is exposed to marine processes on three sides, and; 4) subsidence rates are very high (in excess of 4 feet per century and the highest found in coastal Louisiana). The modem birdfoot lobe is an anomaly. Most prehistoric lobes had broad, fan shaped configurations and built into shallow inner shelf areas.

11D. MISS1 The report indicates that "The objective for this basin is to distribute the flows and sediment in the Mississippi River for the purpose of creating and sustaining wetlands in the most effective manner possible." The recommended alternative would achieve this objective. However, the recommended alternative may preclude controlled subdelta building in other areas of the deltaic plain.

11D. MISS2 The selected alternative is for uncontrolled diversion of the river for creation of a new delta. while maintaining navigation at the present location and managed retreat of the existing delta. This alternative must be compared with the alternative presented for Breton Sound, which calls for a new navigation channel and delta building into Breton Sound. It should also be compared with an alternative for a new navigation channel on the right descending bank of the Mississippi River in the vicinity of Empire, Louisiana and reallocation of flow to smaller controlled subdeltas at various locations across the deltaic plain.

11D. MISS3 A major study effort, including modeling, is needed to fully evaluate various alternatives for reallocation of Mississippi River flow and transported sediment

11D. MISS4 References are inadequate. The list is not consistent with the wealth of factual data presented in the report.

RESPONSE 11D.MISS1: The subject of resource availability and of where and how much of those resources can or will be diverted will be one of the primary topics addressed in the feasibility study of river diversion proposed in the basin plan. This topic may receive individual attention for study as part of the continued planning process under the CWPPRA.

RESPONSE 11D.MISS2: While no specific site alternative for relocation of the Mississippi River navigation channel was presented in this report, the basin plan has been modified to reflect pursuit of a study which would include all viable alternatives for an uncontrolled large-scale diversion, with and without a lock or new navigation channel.

RESPONSE 11D.MISS3: Studies of both major diversion feasibility and flow and sediment availability are envisioned as a result of this plan. These studies will include appropriate levels of model investigation.

RESPONSE 11D.MISS4: The bibliography for the basin plan has been expanded to include the reports and studies which provided the basis for the 1990 USACE report on the diversion of the Mississippi River. That report served as the primary data source for the writing of the basin plan. Other proposals received during the plan formulation process have also been included.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX D
BARATARIA BASIN

Sherwood M. Gagliano
August 23,1993

General Comments and Recommendations -

11D. BARA1 This is a large, resource rich, complex hydrologic unit. The main threat and problem is advanced marine tidal invasion through the center of the estuarine basin. This includes erosion and breakup of the barrier islands and Gulf shore and breakup of land bridges which provided hydrologic controls across the basin. High subsidence rates throughout the middle and lower basins are a major factor in driving the marine invasion.

11D. BARA2 Basin objectives include: 1) increase freshwater, nutrient, and sediment input; 2) maintain and restore the central basin marsh belt; 3) maintain existing barrier island chain; 4) maintain fringe marshes. and; 5) reduce tidal exchange between the lower and upper basin.

11D. BARA3 The alternative selected (Alternative E) includes freshwater diversion, hydrologic management, and long term introduction of Mississippi River water into Bayou Lafourche. It also calls for barrier island restoration and sediment diversions. Outfall management of the diversions is recommended. The projects which make up this alternative address all of the problems and objectives.

11D. BARA4 Several of the objectives may be difficult, if not impossible to achieve. There are no readily available sand sources to restore the barrier islands and Gulf shore across the central part of the basin seaward perimeter. An inland retreat of the Gulf shore is likely. The land bridge across the middle of the basin may be further stressed if the barrier islands and Gulf shore continue to break up.

11D. BARA5 As marine invasion and erosion progress stabilization and restoration of features like the central marsh belt becomes more difficult A contingency plan for building a storm barrier across the central marsh belt should be developed in the event that banier island restoration and stabilization of the central marsh belt fails.

RESPONSE 11D.BARA1: We agree with these statements are we have conveyed these thoughts, though perhaps not as succinctly, in the Problem Identification section of the Barataria Basin appendix.

RESPONSE 11D.BARA2: Basin objectives have been rewritten, stressing the need for fluvial input, hydrologic management, and barrier island nourishment.

RESPONSE 11D.BARA3: The Plan Formulation section has been rewritten so that strategies, not alternatives, are stressed. However, all of the problems and objectives are included in the selected plan.

RESPONSE 11D.BARA4: The difficulty of implementing some projects is acknowledged.

RESPONSE 11D.BARA5: Strategy 4, Interior Barrier Islands, would qualify as a contingency plan. Although not selected, this strategy could be emphasized later if the need arose.

11D. BARA6 A sediment management plan for the barrier island and Gulf shore arcs at the seaward end of this basin should be developed It should be based on the dynamic sand budgets of these features. It must be based on process parameter data related to wave energy. longshore currents, sand size and sorting, sand movement, etc. All projects for beach and barrier restoration, jetties. breakwaters and other features should be evaluated in reference to the managment plan.

11D. BARA7 Erosion control projects along muddy shorelines should be approached on a pilot project basis. There is presently no proven technique for stabilizing this type of shoreline.

11D. BARA8 Project XBA-63, Central Basin Tidal Drag Enhancement, is a major component of the recommended plan for this basin. It has an estimated cost of $16,782,060. This project is a problem statement rather than a well defined project that proposes a feasible solution. This project should be viewed as a research project or reconnaissance level study. The proposal is to form a protective barrier across the center of the basin with stabilized passes controlling water exchange between the upper and lower basins. This will require some closures, as recommended.

11D. BARA9 Rip rap constrictions in tidal channels may simply cause localized hydrologic jumps, and may have little effect in diminishing the volume of water moving through the channels.

RESPONSE 11D.BARA6: A barrier island feasibility Study will likely be initiated in the near future. The study should addresd wave energy, long-shore currents, sand size and sorting, sand movement, etc.

RESPONSE 11D.BARA7: Several shoreline protection projects have been proposed for different salinity types. The Lake Salvador Shoreline Protection project (BA-15) was funded on the Third Priority Project List. This demonstration project will compare the effectiveness of different types of shoreline protection on a soft shoreline in a low salinity marsh. The Oyster Reef Demonstration Project (PBA-50) has been, and will continue to be, a candidate project.

RESPONSE 11D.BARA8: The project description states that the project is conceptual and that a feasibility study must be conducted before construction planning could begin.

RESPONSE 11D.BARA9: The point that you make is stated as a key issue in project XBA-63 and is discussed in the Problem Identification Section on page 10 of the basin appendix.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX E
TERREBONNE BASIN

Sherwood M. Gagliano
August 24, 1993

General Comments -

11D. TERR1 The plan as presented in this document is comprehensive and ambitious. The overall program recommended addresses the problems and will ultimately result in a favorable coastal zone configuration, but the time frame f a implementation may be too long f a some aspects of the problem.

This is the most threatened area along the Louisiana coast. Coastal erosion in the Terrebonne Subbasin has reached a critical and urgent level. Time required for solutions proposed in this report is too great. Development of a short term contingency plan to protect this segment of the coast should be included as a critical project.

11D. TERR2 It is questionable whether one of the major objectives, to create new wetlands on a large enough scale to offset regional losses, is achievable.

11D. TERR3 The barrier restoration plan needs a "second opinion." The magnitude of the barrier island restoration program recommended, and the cost of the program, suggests that objective. non-local, coastal engineers be utilized to evaluate the overall concepts and the specific project designs.

11D. TERR4 Additional quantitative process data (hydrology, tidal, bathymetry, water chemistry, sediment transport, wave energy, along shoredrift, etc.) data is needed as a basis for long term management and project design.

11D. TERR5 Subsidence is one of the major process factors causing shoreline erosion and wetland loss in this hydrologic unit More specific geotechnical data is needed related to the location of faults, the rates of subsidence, the depth to the Pleistocene and related parameters.

References should be included.

RESPONSE 11D.TERR1: Marsh management, hydrologic restoration, small-scale marsh creation, and saltwater intrusion barrier projects across the subbasin, as well as barrier island protection have all been designated as critical (see Planning Objectives page 15 of the Terrebonne Basin appendix and Rationale for Selected Plan on page 23).

RESPONSE 11D.TERR2: This point has been more directly acknowledged in the report (see descriptions of Strategies 5, 6, and 7 under Strategies Considered, pages 20-22 of the Terrebonne basin appendix; Rationale for Selected Plan, page 23; and Critical Long-Term Projects under Implementation, page 34).

RESPONSE 11D.TERR3: A sentence expressing this concern was added under description of barrier island restoration Strategy 2 (page 18).

RESPONSE 11D.TERR4: The need for additional data is emphasized in descriptions of each strategy (see Strategies Considered, page 15) and in the Rationale for Selected Plan.

RESPONSE 11D.TERR5: Such information was amassed during the planning stage and was used in planning and evaluating some projects (especially specific subsidence rates); however, such details were not summarized in the basin plan as a concession to limitations on length of the report. The importance of this type of information for site specific planning has been acknowledged in Problem Identification, Geomorphology and Hydrology, page 5.

11D. TERR6 A feasibility study of a diversion through Bayou Lafourche or in the vicinity of Bayou Lafourche to provide sediment input into the Terrebonne Subbasin is needed.

11D. TERR7 Studies and pilot projects to develop effective management of floating marsh. herbivore control, and hydroperiod restoration in cypress swamps are needed.

11D. TERR8 As in other hydrologic units, pilot projects W test alternative designs and materials for erosion protection along soft, muddy shorelines are needed.

11D. TERR9 Additional work is needed to resolve differences of opinion within the technical and scientific community of environmental and coastal managers regarding: 1) marsh management, and; 2) ingress/egress of estuarine organisms.

RESPONSE 11D.TERR6: A sentence expressing this was added under the description of Strategy 6 (see Strategies Considered, page 21).

RESPONSE 11D.TERR7: These needs were added to Key Issues in Planning, page 38.

RESPONSE 11D.TERR8: This was added to Key Issues in Planning, page 38.

RESPONSE 11D.TERR9: This need was discussed in Key Issues in Planning, page 38.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX F
ATCHAFALAYA BASIN

Sherwood M. Gagliano
August 20, 1993

General Comments and Recommendations -

11D. ATCH1 This is a concise, well done report. The recommendations are all feasible. The program as presented addresses the key problem of reduction in efficiency of the delta building process as the result of maintenance of navigation and manipulation of flows through the two major outlets. The plan proposes sound principals of management of delta growth and maximizing wetland building.

11D. ATCH2 An increase in the flow allocation to the Atchafalaya River may preclude subdelta building in other critical areas. Atchafalaya flow increase should be viewed as a short term measure. Flow should be throttled back as subdeltas in other areas come on line.

RESPONSE 11D.ATCH1: Comment noted.

RESPONSE 11D.ATCH2: Comment noted. A study of the Old River Project, mandated by the CWPPRA, and the sediment budget study described in the main report will determine the best use of the flow and sediment from the Mississippi River and will include an assessment of long-term and short-term measures to accomplish optimal use.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX G
TECHE/VERMILION BASIN

Sherwood M. Gagliano
August 25, 1993

General Comments and Recommendations -

Problems are not unlike those of most small estuaries along the Gulf and Atlantic coasts. The problems are localized shoreline retreat and wetland loss and degradation.

11D.1 The problem statement should include a discussion of projected environmental changes resulting from continuous secondary influences of Atchafalaya delta building and outflow.

The report lacks a statement of objectives. The inferred objectives are to reduce shoreline erosion and marsh loss and to protect the integrity of the system.

The selected plan includes: 1) shoreline protection; 2) sediment trapping; 3) hydrologic restoration, and; 4) management of Atchafalaya River freshwater and transported sediment. Most of the objectives can be achieved through implementation of the proposed plan and projects.

11D.T/V2 It is questionable whether complete control of shoreline erosion can be achieved with proposed projects.

There should be one or more soft shoreline and bankline pilot projects utilizing different materials and designs before major expenditures are made for rock breakwaters.

The report should include references.

11D.T/V3 Process parameter data is needed from this hydrologic unit. A process-form model should be developed

RESPONSE 11D.T/V1: The information that you requested has been added.

RESPONSE 11D.T/V2: Complete control of shoreline erosion was dropped as a goal of the basin plan.

RESPONSE 11D.T/V3: The existing geomorphology of the basin was presented in context with the delta lobe cycle of the Mississippi River, including past and predicted future conditions. Strategies were prioritized according to their compatibility with this landscape-level process.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX H
MERMENTAU BASIN

Sherwood M. Gagliano
August 20, 1993

General Comments and Recommendations -

11D. MERM1 Hydrologic management and marsh management have been practiced in this area since 1913 or before. Wetland conditions demonstrate that the approach taken has worked, but localized problems indicate that the hydrologic management system needs some updating and fine tuning.

The Fresh Water Bayou Locks serve as a model for water control at the seaward end of navigation channels that cut across the coastal wetlands. This project demonstrates that the approach is feasible and effective.

The fundamental question of whether excessive marsh flooding is caused by drainage blockage and improper operation of water control structures, or by subsidence, must be answered.

11D. MERM2 A clearer statement of the natural system dynamics of this hydrologic unit needs to be developed as a basis for long term management. The report should recommend additional research and measurement of process parameters (hydrology, water chemistry, tides, subsidence, etc.)

A project should be defined for real time water level monitoring, hydrologic modeling, and real time management of water control structures based on models and monitoring.

11D. MERM3 The report should include references.

RESPONSE 11D.MERM1: We acknowledge that hydrologic and marsh management systems can be implemented properly to restore, protect, and enhance marshes in the coastal zone and in this basin in particular. This basin has some large hydrologic restoration projects in place (i.e. the Freshwater Bayou Lock) in the form of the existing lock system which can be used as examples for similar projects in other basins with large canals that disrupt natural hydrology. However, we acknowledge that the existing locks may be causing too much water to be impounded in the Lakes region located above Highway 82.

RESPONSE 11D.MERM2: The basin plan and existing hydrologic data indicates that a significant amount of the water level problem in the Lakes Subbasin is caused by the lock system surrounding White and Grand Lakes. Subsidence is contributing to the high water problem. The recent USACE "Grand and White Lakes Study" indicated that it would be difficult to lower water levels with existing structures because of Gulf of Mexico tidal influence which prevents movement of water to the south most of the time. There are also other studies which suggest that the locks are large contributors to the ponding or high water level situation in the Lakes Subbasin. The USACE, Waterways Experiment Station has developed a hydrologic model of the basin. The "projects" recommended are construction or demonstration projects and not "research" projects in keeping with the general intent of CWPPRA.

RESPONSE 11D.MERM3: Additional references have been included.

Mermentau Basin Specific Comments

11D. MERM4 p. 1 Water control for marsh management goes back to at least 1913, when the Schooner Bayou Lock was built to control movement of salt water into the old Inland Waterway.

MERM5 pp. 1-5 The natural system model has been poorly defined and developed. This is a reflection of the paucity of definitive research in the area. The evolution, processes, and general understanding of White Lake, Grand Lake and the Mermentau River have not been adequately studied.

pp. 2-3 Concise description of existing projects.

p. 3 This area has the only example of a navigation canal cutting across the coastal zone that has been fitted with a lock at the seaward end. The Freshwater Bayou lock demonstrates that this approach is feasible and that it works.

11D. MERM6 p. 4 Existing conditions

The area consists of a large hydrologic management experiment The marshes in this basin are generally in better shape than in the other hydrologic units. The condition of the marshes is a tribute to management

p. 9 Periods of prolonged high water have been cited in much of this unit as the cause for marsh deterioration and loss. The cause of the excessive flooding has been attributed to blocked drainage and improper operation of water control structures. This explanation may be partially correct, but subsidence is undoubtedly a major contributing factor.

11D. MERM7 p.14 The report states that "...the focus in the Mermentau Basin must be on prevention and restoration rather than on creation." This is a realistic goal. The overview of Basin Strategy is good.

RESPONSE 11D.MERM4: We agree that the Schooner Bayou Lock is a hydrologic restoration project, but it is not a marsh management structure. The CWPPRA definitions for hydrologic restoration and marsh management include locks and similar structures under the category of hydrologic restoration. For purposes of the CWPPRA Restoration Plan, we define marsh management as being either active or passive manipulation of water levels for the purposes of restoring, protecting, or enhancing marshes. The lock was installed to prevent saltwater intrusion into White Lake primarily for agricultural purposes, with saltwater intrusion prevention benefits to the marshes as a secondary benefit.

RESPONSE 11D.MERM5: Please refer to Response 11D.MERM2.

RESPONSE 11D.MERM6: We agree that the Mennentau Basin marshes are in better shape than marshes in most other basins. The existing marsh management projects in the two subbasins, coupled with the lock system that functions as a large hydrologic restoration system has enabled these marshes to be protected from saltwater intrusion and tidal scour from the early 20th century to the present. However the locks may also be causing increased water levels at the present time which may be exaggerated by subsidence.

RESPONSE 11D.MERM7: We agree. This basin is in a sediment-starved area of the Louisiana coast except for the accretion of mud that is occurring along the Gulf shoreline from Freshwater Bayou Canal to the eastern end of Rockefeller Refuge.

A REVIEW OF
LOUISIANA COASTAL WETLANDS RESTORATION PLAN
APPENDIX I
CALCASIEU/SABINE BASIN

Sherwood M. Gagliano
August 20,1993

General Comments -

A natural systems dynamics model should be developed for this hydrologic unit as a basis for long term management. The report should recommend additional research and measurement of process parameters (hydrology, water chemistry, tides, subsidence, etc.)

11D. C/S1 A system of real-time monitoring of water level and salinity should be developed for the Cameron-Creole watershed area. It should be used m conjunction with a computer model of the hydrology and water chemistry to provide the basis for operating automated water control structures. This should serve as a pilot area for an instrumented/automated hydrological management program

Feasibility of navigation locks at the mouths of the Sabine and Calcasieu Ship Channels should be investigated m the event that Perimeter Control Restoration (Alternative B) does not work.

Calcasieu/Sabine Basin Specific Comments -

11D. C/S1 Cont. pp. 4-5 The roles of the Sabine and Calcasieu Riven and their estuaries are not adequately considered. Water circulation through the Sabine and Calcasieu Navigation Channels and their effect on the GIWW is poorly understood As in the Mermentau Basin, a good physical process-form model remains to be developed. This needs to be listed as a research objective.

p. 11 The report recommends that water control structures in the Cameron-Creole Watershed project should be automated to improve management. This is an excellent recommendation that should be applied to a number of other projects throughout the coastal zone.

11D. C/S2 pp. 12-13 Alternative B (Perimeter Control Restoration) and parts of Alternative C (Interior Restoration) were selected and recommended in the report. This is an appropriate choice.

pp. 14-15 Good presentation of alternatives.

11D. C/S3 pp. 24-50 Project descriptions are too abbreviated. The projects are too fragmented. Small projects should be consolidated and discussed collectively. For example, the eight erosion control projects along the GIWW should be grouped into one or two projects with consolidated budgets and evaluation.

RESPONSE 11D.C/S1: The studies and modelling that you suggest could be added to the list of feasibility studies that need to be done for larger projects.

RESPONSE 11D.C/S2: Concur.

RESPONSE 11D.C/S3: The descriptions of these projects have been expanded.

Comments on Environmental Impact Statement
for Restoration Plan
Lee Wilson & Associates

Comments on content

Page	1	Line	
3	2	9	Delete sentence "All project types except herbivore control are structural" measures'. It is not clear why this sentence is included, or what constitutes a "structural measure*. For example, how is "shoreline erosion control with vegetative plantings" a structural measure while herbivore control is not?
4			The approach of summarizing the effects of each category of project type by major resource category in a table (Table 1) is very good. However, the content of the table requires substantial expansion and correction. There are a number of broad issues that, on the whole, are poorly represented.

The relationships and impacts, either beneficial or adverse, of each project type to long-term restoration, i.e., to sustainable solutions that at least approach the goal of no net loss, is missing from the table. This should be added as a row, perhaps titled Natural Ecology.

There is, at best. a very weak impression given of any positive impacts associated with creating marsh, either by larger scale "delta building" processes (e.g., diversions) or by small scale sediment placement. It leaves the impression that little is gained by creating marsh compared to protecting existing marsh. No positive functional value of created marsh is mentioned. For instance, the water quality improvement and storm surge protection functions of marshes are not attributed as a benefit of created marsh. It is very important, especially in the EIS, that the reader be left with a full understanding of the beneficial as well as the adverse impacts of alternatives.

Many potential adverse impacts are also ommitted from the table. Specific examples will be discussed below; however. it is a flaw that prevents the table from tranmitting a complete and dynamic picture of the comparative impacts of the various project types.

Specific comments on content of EIS Table 1 follow.

RESPONSE llE.l: We have eliminated this sentence, as suggested.

RESPONSE llE.2: The suggestion to relate the various project types to'natural ecology" is similar to Comment llC.57. Your comment suggests that projects that would more closely mimic natural "ecology" or'processes" should be preferred over projects that would rely on more structural measures, with the underlying reason being that natural processes would promote a more natural ecology and be more likely to provide long-term, sustainable solutions. We agree with this general concept. We also believe that there are only two types of projects that could be considered as contributing to natural processes: freshwater diversion and sediment diversion. All other projects, in our opinion, do not promote natural processes. Pumping sediments through pipelines and hardening shorelines is not natural. In the text of the EIS we have identified diversions as attempts to restore natural processes, but we have not included this information in the table.

We have modified many of the blocks within the table to more equally display positive and negative effects and to accommodate comments as much as possible. Please understand that this is only a summary table of the discussions contained in Section 3 of the EIS and that it is not necessary to include all of the positive and negative effects of the projects. Responses to your specific comments are as follows:

Comments on content of EIS Table 1

No Action

11E3 Coastal Marsh - the rate of loss may decline in the future, but indicate whether total losses would be large. significant, insignificant, etc.

11E4 Submerge Aquatic Vegetation - to some extent. as marsh loss progresses inland. the areas that support SAV would also migrate, rather than be wholly lost.

11E.5 Fisheries Resources - fisheries are not being "artificially maintained* - delta degradation with increase in estuarine habitat and export of organics from the marsh to the estuary are natural processes (although degradation processes are accelerated by man's activities and natural renewal processes are interferred with). Perhaps substitute the following - "Fisheries populations and harvests flourish as marsh initially degrades, and as estuarine (shallow water) areas open up and organic export from the marsh to the estuary is high. However. as marsh loss continues past the threshold capable of supporting current levels of fish production, fisheries harvests would decline dramatically."

11E.6 Threatened and Endangered Species - change "Habitat loss could possibly reduce their populations.' to 'Habitat loss would reduce their populations." There should be no question with regard to the relationship.

11E.7 Oyster Leases - change "... leases are closed to harvest for pollution reasons." to "... leases are closed to harvest because of pollution.'

11E.8 Water Quality - move first sentence ("Freshwater diversion projects will restore favorable salinity levels in eastern basins) to the column on freshwater diversions. Why are no other significant water quality effects expected? If wetlands provide a significant water quality function, then it must be anticipated that their wholesale loss will have a progressive adverse effect on water quality. Perhaps substitute the following - "As wre and more extensive areas of marshland are lost. the filtering function of the marsh will be lost, and water of increasing turbidity. conductivity. and contaminants content will reach the estuary. Salt water intrusion also will increase."

11E.9 Wildlife Refuges. etc. - what is meant by 'Available funds may not be sufficient to maintain infrastructure"?

Marsh Management

11E.10 Coastal Harsh - stating the marsh management can *enhance" existing marsh is vague. If in some cases marsh management reduces stress on vegetation and so increases its vigor. the associated resistence to

RESPONSE 11E.3: We have indicated that the rate of marsh loss would remain significant.

RESPONSE llE.4: Most SAV occurs in the fresh and intermediate marshes. We believe the overall extent of SAV would be reduced with continued marsh loss and saltwater intrusion.

RESPONSE llE.5: Your suggested substitution is too long for a summary table. We agree that "artificially maintained" is not the best choice of words and have substituted other language.

RESPONSE llE.6: While we agree that suitable habitat is critical for wildlife populations, we disagree that a blanket statement can be made as suggested. By definition, populations of these species are critically below their historic levels. In some cases, especially for those species mentioned, factors other than habitat loss have been primarily responsible for their current predicament. For instance, populations of piping plovers are thought to be so low because of widespread market hunting that extended well into the 20th Century and because of problems with predators and disturbance on their breeding grounds. Continued loss of wintering habitat in Louisiana may not be that critical to the survival and recovery of this species. There may be a threshold at which they may be affected, but at the present time, more than adequate wintering habitat for the birds wintering along the gulf coast is probably available. Similar arguments could be made for other species. We are not trying to slight the importance of Louisiana's coastal wetlands for these species, only that we cannot make a definitive statement that their populations would be further reduced from continued loss of this habitat.

RESPONSE llE.7: We have made the suggested change.

RESPONSE 11E.8: The first sentence of the block is there to indicate that the authorized freshwater diversions (Davis Pond and Bonnet Carre'), which we assume will be constructed under the no-action scenario, will significantly affect the salinity regime of the Barataria and Pontchartrain Basins. The two diversions represent the greatest change in water quality, from a salinity and turbidity standpoint, to be expected in coastal Louisiana under the no-action scenario and therefore shouldn't be moved from where it is. We agree that salinity increases would be expected to continue to occur in areas not influenced by the freshwater diversions and the Atchafalaya River, but we do not agree that continued coastal wetland loss would necessarily mean increased turbidity and contaminants.

RESPONSE 11E.9: We meant that the funds available to the refuges and management areas through their normal funding sources may not be sufficient to maintain the wetlands encompassed within these areas. We have revised the block to make our point more clear.

11E.10 Cont. erosion and increase in organic deposition will be reflected in a decrease in marsh loss rates. It mould be more meaningful to state this directly. Stating that marsh management can cause new marsh to develop is largely inaccurate. This is only rarely the case. Most research (as cited in this EIS) indicates that submerged aquatic vegetation is increased much more often than emergent vegetation (and while SAV is valuable fisheries habitat, etc., the primary objective of CWPPRA is directed toward creation/protection of emergent marsh). It should furthermore be stated that marsh management affects soil properties and accretion by reducing mineral sediment input to the managed area. and thus in the long-te ha does nothing to address subsidence of the marsh, which is usually a major underlying cause resulting in the marsh inundation that is trying to be controlled.

11E.11 Wildlife Resources - since marsh management may protect an area of existing marsh (though not stop loss altogether) but not create new marshland, it would not increase habitat value, but maintain existing levels of value. The exception would be if levees and structures are used to maintain pooling conditions for waterfowl during hunting season. which may increase local use and apparent habitat value, but may have nothing to do with ursh function or preservation. Better habitat for one species doesn't count a'increased habitat value".

11E.12 Fisheries Resources - state specifically what it means to 'restrict access"; i.e., use of that marsh area as fisheries nursery, spawning, and/or feeding grounds is reduced, and production (i.e., the amount of fisheries supported) is reduced. It is also very important to indicate the potential for cumulative, long-term impacts in this regard. That is, compensation or mitigation may be possible for any one individual marsh management area, but if large enough regions of coastal Louisiana were put under ursh management, the cumulative loss of access to habitat (as well as other functions) could be highly significant.

11E.13 Water Quality - turbidity and salinity levels are only lowered within the managed area; the managed area is effectively removed from functional interaction with the surrounding region, and thus would have a reduce function in moderating regional water quality.

11E.14 Wildlife Refuges, etc. - only plans are listed, not effects.

11E.15 Flood Protection - regarding the suggested cumulative benefit, managed marshes should provide less buffer for storm surges than unmanaged marshes. since the levees and structures are there to keep excess water out.

11E.16 Recreational Opportunities - change "Fishing for migratory species may be reduced" to "Fishing for migratory species would likely be reduced'.

RESPONSE llE.lO: We have substituted .invigorate" for "enhance" as suggested. Otherwise, we have let the block intact because we do not believe that it is necessary to go into the details suggested in this summary table.

RESPONSE llE.ll: We have revised the block to read more closely with your recommendations.

RESPONSE llE.12: We have revised the block to be more specific. The effects of all types of restoration projects are cumulative. The more projects of each type that are built, the more effects there are, both beneficial and adverse. It is not necessary to single out marsh management when discussing cumulative impacts.

RESPONSE llE.13: We have included a statement that the effects would only apply within the managed areas.

RESPONSE llE.14: Your comment is true, but the effects of marsh management on refuges and management areas would be fundamentally the same as on privately owned wetlands, assuming that structures would be maintained and operated similarly.

RESPONSE llE.15: Levees, canal banks, and natural bayou banks, and lake rims used to delineate marsh management areas normally have elevations well below developed areas. However, such is not always the case, as in the Cameron-Creole project. We maintain that typical marsh management projects would not increase the flooding potential of developed areas. We have revised the table to state less definitively that marsh management would provide flood protection benefits.

RESPONSE llE.16: We believe that "may be reduced" is more appropriate.

. 11E.17 Socioeconomic Items - add negative impacts of reduced commercial and recreational fishing. These impacts could be long-term and cumulative if large proportions of marsh critical as fisheries habitat are put under management.

Hydrologic Restoration

. 11E.18 Flood Protection - why wouldn't hydrologic restoration - which often reduces channelized flow, increases more natural sheet flow, etc. - improve the marshes ability to buffer storm surges (i.e., reduce the direct, channelized conveyance of storm flow).

Sediment Diversion

. 11E.19 Coastal Marsh - indicate that sediment diversions could be the only approach capable of building enough marsh acreage to substantially offset losses from other sources (or add this to the new row on natural ecology).

. 11E.20 Cypress-Tupelo Swamps - there is no logic to the statement presented (proposed diversions contain swamp, therefore there will be no effects). There could be positive effects - increase inundation and stress on swamps is often a result of subsidence plus the lack of natural sediment input because the major rivers are leveed. Negative effects could include increased flooding if hinderances to drainage exist.

. 11E.21 Oyster Leases - add that the area optimal for oysters would also be shifted; thus total oyster productivity could be maintained or even enhanced, even though oyster areas proximal to the diversion would be harmed.

. 11E.22 Water Quality - add that the creation of large areas of new marsh would greatly increase the water quality benefits for the region. On the negative side, issues of possible sediment (or source water) contaminants would have to be addressed for each project to assure that contaminant or toxicological problems are not introduced to the recieving area.

. 11E.23 Flood Protection - ~~while the~~ diversion of water (with the sediment) itself may create local water level issues and flooding concerns, the new marsh created would function in storm surge and flood protection.

. 11E.24 Socioeconomic Items - large-scale marsh creation will have long-term, regional benefits to fisheries resources as it will extend the time during which the productive marsh-estuarine interactions persist.

RESPONSE 11E.17: We have added a statement on the possibility of negative effects from reduced access of estuarine species into managed areas.

RESPONSE 11E.18: We agree with your comment and have revised the table.

RESPONSE 11E.19: We agree with your comment and have revised the table.

RESPONSE 11E.20: We have modified the table to more closely reflect your comment.

RESPONSE 11E.21: We have modified the table to more closely reflect your comment.

RESPONSE 11E.22: We believe that the major points have been made in the table. We are not aware of any toxicity problems with Mississippi or Atchafalaya River sediments, and therefore do not believe it is necessary to mention.

RESPONSE 11E.23: We have modified the table to more closely reflect your comment.

RESPONSE 11E.24: Your comment is more appropriate under fisheries resources where the information already appears.

Freshwater Diversion

11E.25 Cypress-Tupelo Swamp - adverse impacts from increased flooding and periods of inundation of the swamp could occur if any impediments to appropriate drainage exist in the outfall area.

11E.26 Water Quality - possible contaminants from source water should be checked to avoid adverse impacts to the recieving area.

11E.27 Socioeconomic Items - add that region fisheries harvests may increase, even though shifts in the locale of greatest harvests would occur.

Create Marsh with Dredged Material

11E.28 Coastal Marsh - organic content of soil of created marsh would be lower initially.

11E.29 Oyster bases - what evidence is there that oyster leases adjacent to areas where marsh is created would be adversely affected by "altered tidal flows'.

11E.30 Water Quality - add that the addition of new marsh adds to the net water quality improvement function of marshes in the region.

11E.31 Flood Protection - marsh creation has a direct effect on flood protection by adding marsh capable of buffering storm surges.

Barrier Island Restoration

11E.32 Coastal Marshes - change 'Protection may be provided to mainland marshes" to 'Protection would be provided to mainland marshes".

11E.33 Submerged Aquatic Vegetation - by protecting interior marshes and buffering the energy of the system, barrier island restoration would help maintain SAV in interior marshes.

Erosion Control Structures

11E.34 Coastal Marsh - add that adverse impacts may arise from structures stealing' sediment from downdrift areas, causing an increase in erosion in locations outside of the project area.

11E.35 Wildlife Resources - delete "Breakwaters would have only beneficial effects."

11E.36 Fisheries Resources - delete "Breakwaters would have only beneficial effects." Depending on their placement, breakwaters can interfere with migratory pathways and inshore use by some species of fish.

RESPONSE 11E.25: We agree that adverse impacts could occur, but the possibility would be remote because we would expect projects to be designed to minimize inundation problems. We have included a discussion of this under Section 3.3.3.7.

RESPONSE llE.26: We agree and have included this information under Section 3.3.9.7.

RESPONSE llE.27: Your comment is more appropriate under fisheries resources where it already appears.

RESPONSE llE.28: We have rewritten this block.

RESPONSE llE.29: We have deleted "from altered tidal flows".

RESPONSE 11E.30: Louisiana's estuaries, except for some isolated areas near industrial sites, do not have problems with water quality except fecal coliform bacteria. Circumstantial evidence suggests that the high populations of herbivores occurring in some marshes contribute to the fecal coliform problems. We do not believe that we should suggest that created marshes could improve water quality because we are unaware of any areas proposed for marsh creation where water quality problems exist, except for fecal coliform bacteria.

RESPONSE llE.31: We agree and have included your suggestion.

RESPONSE llE.32: We believe that there are enough uncertainties about the value of barrier islands providing protection that we should not make an absolute statement that barrier island restoration, in all cases, provides protection to mainland marshes. We have changed the "may" to 'can" to indicate that, under the correct conditions, the barrier islands can protect mainland marshes as opposed to saying that they might be able to protect marshes.

RESPONSE llE.33: We believe that our revised write-up in the table captures the point of your comment.

RESPONSE llE.34: We have added the fact that breakwaters can have mixed effects when they are used along the gulf shoreline.

RESPONSE llE.35: Instead of deleting the sentence that you suggest, we have modified it to indicate that breakwaters constructed along the shorelines of lakes, bays, and other inland waters would benefit wildlife.

RESPONSE llE.36: We have added a sentence that mentions that breakwaters in inland areas would have mainly beneficial effects.

11E.37 Threatened and Endangered Species - questions as to whether shoreline or offshore structures could interfere with onshore movement or shoreline use by listed species should be addressed.

11E.38 Wildlife Refuges, etc. - what is meant by "... and sometimes more importantly, by maintaining existing managed areas."? This should probably be deleted.

Terracing

11E.39 Why wouldn't the increase in marsh area directly improve flood control capabilities of marshes in the area?

END OF COMMENTS ON TABLE 1

Comments continue on content of rest of EIS

	Page	1	Line	
E.40	17	5		Section 1.2 needs at least one map.
1E.41	18	1		Need to mention the effect of levees.
1E.42	19	3		Who decided that large-scale projects are ineligible for the priority list?
1E.43	19	5		The list of .significant resources' listed in this paragraph represent the categories for which potential project impacts are summarized. An addition to this list should be made to capture impacts of projects to marsh processes or functions - such as sediment introduction and accretion, marsh creation by natural delta-building processes to offset losses, etc - that are not captured in the categories already listed. The new category night be titled "Natural Ecology".
11E.44	24	3	3	Giving preference to a particular type of project would not be contrary to CWPPRA if it were determined that the project type were a cost-effective approach to the long-term restoration of the Louisiana coast. Indeed. an important need in the EIS is to develop a basis for deciding if, programmatically, some types of projects are commonly more cost-effective than others, irrespective of conventional WVA analyses.
11E.45	25	1	5	The sentence beginning "Coastal wetlands conservation' is confusing. What does it mean that *conservation projects are specifically addressed in a separate section of the CWPPRA (Section 305)" ...? Does it mean that conservation projects have their own EIS? Or does it mean that this EIS only

RESPONSE 11E.37: We have included a discussion of the possibility of structures interfering with listed species under Section 3.3.7.11.

RESPONSE 11E.38: We believe that our presentation in the table is appropriate. The phrase in question is meant to indicate that although shoreline protection projects for refuges and management areas are important for the protection that they provide against shoreline retreat, they often form a more important function by protecting areas that are under some sort of management. An example is the Cameron Prairie project from the 1st Priority Project List. A large area of managed fresh marsh is being threatened by shoreline erosion along the Gulf Intracoastal Waterway. Stabilization of the shoreline will protect hundreds of acres of freshwater marsh from the scouring effects of navigation traffic.

RESPONSE 11E.39: We believe you have misinterpreted the table. We meant that terracing projects would have no direct effect on the ability of flood control systems to perform their function. In the second sentence, we indicate that terracing would serve to reduce storm surge flooding.

RESPONSE 11E.40: We have referenced Figure MR-2 of the main report.

RESPONSE 11E.41: We have added in a brief discussion on the role of levees in contributing to the current loss of coastal wetlands.

RESPONSE 11E.42: This section has been rewritten to address your comment and comments of others.

RESPONSE 11E.43: This is the same comment that was made about the summary table, Table 1. We agree that projects that use "natural processes" or promote "natural ecology" should be preferred over those that would work against nature. We are not aware of anyone who would disagree. The problem is that the natural processes of sediment introduction and accretion can only be carried out in certain areas. There are many isolated areas of the state where some sort of management or protection may be the only option available. We have included discussions under the descriptions of sediment and freshwater diversions about how these projects attempt to mimic the natural process of delta development and are preferred over protection-type projects wherever they are feasible.

RESPONSE 11E.44: In your comment, you make a basic assumption that we know enough about all of types of projects that can be used for coastal wetland restoration to make some determination as to which ones are commonly mote cost effective than others. In reality, most restoration projects have been constructed only recently and there is simply not enough information available for anyone to make a determination of their relative long-term effectiveness. That is the main reason why an extensive monitoring program will accompany the projects implemented under the CWPPRA.

	Page	1	Line	
11E.45 Cont.				concerns itself with CWPPRA Section 305?, and if so, are conservation projects considered in another EIS? Note that the main plan doesn't discuss this matter at all.
11E.46	25	1	8	As with conservation projects, how/where are "developmental activities" evaluated?
11E.47	51			It is indicated that active management can induce plant growth. It sounds as if active management needs to continue indefinitely to maintain this growth. If so, active management must have major long-term energy impacts. Add to the matrix a column entitled "Energy Use" or "Consumption of Resources"?
11E.48	53	5	1	The paragraph beginning "Follow-up studies in the rsh"... should be attached to the preceding paragraph. Any rmation on whether or not the increase in abundance was self aining?
11E.49	53	5	6	This paragraph, beginning "In South Carolina,"... seems to indicate that marsh management can benefit different kinds of ducks (e.g. bottom feeders would benefit from increased submerged aquatic vegetation), but otherwise primary production is little different between managed and unmanaged areas. If all marsh management can do is increase the variety in duck habitat, its application to the goals of CWPPRA is overstated.
				Active marsh management (essentially marsh vegetation farming) is discussed in great detail. Is seems to be a form of micro-managing. Less is said of larger scale, relatively natural approaches which would address the causes of the problems. As marsh management is controversial, some detail is appropriate. However, except where manmade conditions make it necessary to utilize active management techniques, or where active marsh management is utilized for nursery purposes, such techniques do not seem to meet the overall goal of CWPPRA.
11E.50	56	3	14	Another key point would be some indication as too roughly how long it took for a created marsh to mature, and whether there is any difference between a human-created marsh and a marsh "created" naturally (e.g. at the mouth of the Atchafalaya).
11E.51	56	4	7	In 3.3.2.10, recommend clarifying that Isles Dernieres are eroding shoreward, rather than "migrating".
11E.52	56	4	11	Reference "Unpublished studies", it is true that the report by van Heerden, Suhayda, and Kemp is a draft handout to the Terrebonne Basin Team, but what about List and Hansen, 1992, The value of barrier islands: 1. mitigation of locally-generated wind-wave attach on the mainland. Open-File Report 92-722, U.S. Geological Survey, St. Petersburg, FL.

RESPONSE 11E.45: We are simply stating in this paragraph that "projects" whose main purpose is to protect coastal wetlands by obtaining a real estate interest (purchase or easement) are addressed under another section of the CWPPRA. The other section (Section 305) has nothing to do with the Restoration Plan or this EIS. We have attempted to make this clearer in the EIS. As far as we know, no NEPA documents are being prepared for coastal wetlands conservation projects.

RESPONSE 11E.46: The Conservation Plan, which has regulation of developmental activities as its main purpose, is described briefly in Section 2.2.2. As far as we know, no NEPA documentation is being prepared for the Conservation Plan.

RESPONSE 11E.47: Active management relies on gravity flow to manipulate water levels. Hydrologic management of impoundments is a specialized form of management for pre-existing impoundments that relies on pumps. Other types of projects such as marsh creation with dredged material and sommetypes of freshwater distribution projects also rrey on pump and their energy consumption could be substantial. Siinc the costs of energy used for all projects is incl dedd n the pproect cost estimates, we do believe that it is necessary to relatte rojects to "energy use".

RESPONSE 11E.48: This sentence has been deleted.

RESPONSE 11E.49: We believe that active marsh management can do more than increase duck habitat and believe this should be evident in our revised presentation.

Our discussions of marsh management have been shortened somewhat to be more in line with discussions of other project types. We have not, however, deleted any of the major points about marsh management covered in the draft report. We believe that marsh management has a role to play in implementation of the CWPPRA. We do not agree that projects to enhance habitat for wetland-dependent fish and wildlife resources is precluded by the act.

RESPONSE 11E.50: We have included some additional information to clarify this issue.

RESPONSE 11E.51: We have included a sentence that states that the Isles Dernieres are eroding shore-ward instead of migrating

RESPONSE 11E.52: We have deleted "unpublished".

	Page	1	Line	
11E.53	57	6	1	The paragraph on herbivore control is too brief, even when one refers to the description under 'Alternatives", which the text should do. For example. would herbivore control be more effective in some areas than in others. such as on barrier island projects? Are some plantings to be avoided or emphasized? Timing of plantings? Seeds versus shoots?
11E.54	71	6	4	As the last area of seagrass beds in Louisiana, the potential to negatively affect them by PMR-6 seems a significant impact.
11E.55	62	3	1	If the Chandeleur Islands are key to providing suitable habitat for seagrass. would not barrier island restoration potentially benefit sea grass?
11E.56	73	6	1	What long-term benefits to herbivore control would be expected from preservation of wetlands?
11E.57	81	3	6	Sediment diversion represents an example where impacts occur to numerous resources, including possible loss of existing National and State wildlife refuges, sea grass beds and oysters. Check the matrix (Table 1) to see that a11 impacts show up there. For example, the table should include potential impacts from sediment diversion to sea grass bed.
				Would new wetlands created by sediment diversion replace existing refuges that would be lost by PMR-6?
11E.58	81	7	1	While not publicly owned, the Terrebonne Barrier Island Refuge is operated under lease by Louisiana with public funds, and would be impacted by proposed actions on the Isles Dernieres. The Refuge is an important brown pelican nesting area; shouldn't the Refuge be included on Table 3 and at 3.3.10.10? Are there other such areas not included?
11E.59	84	6	3	As a goal of CWPPRA is to create wetlands. a single sentence regarding ownership of new land may be inadequate, especially as the sentence indicates that "it is possible that some conflict will arise". Hasn't more thought been given to this issue? Where land has been lost, does new land belong to the previous landowner? Could some created land be used to compensate for loss of National Wildlife Areas (e.g. Delta NWA)?
11E.60	85	4	1	Do proposed diversions from the Mississippi involve any state or private water rights? Do farmers hold water rights that must be retired?
11E.61	90	5	11	Need to explain to the reader how it is that removing sediment from a river results in increased sediment deposition in the river; and how it is that water depth becomes a problem when river levels are high.

RESPONSE 11E.53: We have expanded our discussion of herbivore control. Some of your suggestions were not applicable.

RESPONSE 11E.54: We agree and have indicated that this could be considered a significant impact.

RESPONSE 11E.55: No proposals have been made for projects on the existing barrier islands east of the Mississippi River because these islands are designated as a wilderness area under the National Refuge System. A long-term strategy in the Pontchartrain basin is creation of barrier islands adjacent to the fringing saline marshes. It is possible that seagrasses may develop on sandy substrates behind those islands. The only other place in Louisiana that we know seagrass has occurred in the recent past is behind the Isles Dernieres. Seagrass beds were extensive behind the islands prior to a hard freeze during the winter of 1983-84. Since that time seagrass has not re-established there. Whether or not restoration of the Isle Dernieres, or other barrier islands west of the Mississippi River, is debatable since there is apparently no seagrass beds existing now.

RESPONSE 11E.56: We meant that herbivore control would benefit threatened and endangered species by helping preserve wetlands that are being stressed by an overabundance of herbivores. We have made the sentence clearer.

RESPONSE 11E.57: We have checked the table and believe that it displayed the major effects possible from sediment diversions. The answer to your second question is unknown at this time. Ownership of any newly created deltas would depend on many factors which are discussed in Section 3.3.11.2.

RESPONSE 11E.58: The Terrebonne Barrier Island Refuge complex should have been included in Table 3. We have included it there and in Section 3.3.10.10.

RESPONSE 11E.59: We have added information contained in a recent opinion of the Louisiana Attorney General's office under Section 3.3.11.1. It is possible that new delta lands formed through a major sediment diversion could be used to compensate for loss of the refuge and management area in the present active Mississippi delta, but the final decision would depend on many factors that are not known at the present time.

RESPONSE 11E.60: We are not aware of any state or privately held rights to Mississippi River waters within Louisiana.

RESPONSE 11E.61: We have included a brief explanation of the reason why sedimentation becomes a problem with decreased river flow and why water depth is a problem when river levels are high.

Page	1	Line	
102	5	1	Here, and elsewhere, the EIS fails to support the assumption that deterioration of the wetlands has a significant economic impact.

a. • For example, this sentence is concerned that commercial fisheries will become increasingly unstable. Yet previously it was stated in several places that commercial (and recreational) fishing was thriving due to the loss of wetlands. Oyster leases are expanding, and oyster fisherman fear impacts from CUPPRA.

b. • And it is not at all clear what wildlife operations are currently unstable; for example, page 106 indicates that *alligator hunting is now legal, and production has increased'. Decreases in the harvest of furbearers is attributed to market conditions, not wetlands deterioration (page 106).

11E.62

c. • How will mineral production and energy activities be affected by wetlands loss; the wetlands are mostly in the way of oil and gas operations, which thrive in the open Gulf.

d. • As stated earlier, flood protection will continue to be upgraded regardless of CUPPRA.

e. • It was indicated earlier that farmers may resist CUPPRA projects (p. 85).

f. *National wildlife refuges vill be eliminated by diversions that vill bury remaining sea grass beds.

g. • Major and minor projects could interfere with navigation.

h. • Employment is driven more by the oil and gas industry (p. 110) than on wetlands deterioration.

11E.63	103	1	1 Again. exactly how vill business and industry be more likely to maintain current levels of activity as a result of CUPPRA?
	105		Need to reconcile prediction of harm to fisheries with current congruence of wetlands loss and increasing catches and values. If there are impacts to area commercial fisheries, they appear to be from competition from Alaska and foreign sources (or from recreational fishing, as indicated on the next page), not from wetlands deterioration. Make the case that fisheries vill benefit in the long-term.

11E.64

RESPONSE llE.62:

a) Section **3.3.16.3.1.** includes published information on the decline of the commercial and recreational fishery as wetlands continue to be lost.

b) In Section **3.3.16.3.2.,** the predicted decline'of commercially harvested wildlife is attributed to the projected loss of nearly 800,000 acres of coastal wetlands in Louisiana over the next 50 years, under the future without-project condition.

c) As wetlands are lost, the cost of mineral extraction would increase. When wells and production facilities are exposed to greater wave energies, there is more maintenance costs and the structures must be designed more sturdily.

d) Section 3.3.16.6.2. describes how it will be more costly to maintain flood protection and other public infrastructure when it is more susceptible to hurricane damage. At the same time, wetland loss will cause a decline in the tax base that must be used to maintain this infrastructure.

e) Comment noted.

f) Loss of some or all **seagrass** beds may be necessary in order to build a significant amount of wetlands to offset losses occurring elsewhere. If nothing is done, many of the wildlife refuges would suffer loss of wetlands.

g) Comment noted.

h) Regardless of what happens with the oil and gas industry, loss of major resources used by significant local industries still implies employment losses; a negative impact to the community.

RESPONSE llE.63: It is not known if the net effect on oil and gas operations will be negative or positive. As a part of an ongoing effort of the CWPPRA, this will be investigated further in an attempt to determine what the net impact is.

RESPONSE **11E.64:** See Response **11E.62a** above.

	Page	1	Line	
11E.65	113	2	1	This section, 3.3.16.4.3, about the general benefits of CWPPRA, and similar sections that follow, is not supported by previous statements of fact.
11E.66	117	8	1	Need to improve discussion of cumulative impacts. one approach could beto summarize and integrate the matrix. See the comments for page 102, for example, which basically address cumulative economic impacts and thus should be dealt with in the Cumulative Impacts section. The EIS should be thoroughly combed for impacts which can be added to the matrix. and particularly any numeric values. The impacts should be 'totaled" for each "resource" and *project effect", to provide the basis for the cumulative discussion. For example, herbivore control appears to benefit all resources, while large-scale sediment diversion appears to impact most resources.
11E.67	General			Where in the EIS do we discuss prospective mitigation measures?

Editorial comments

	1	3	1	Change "a overview" to "an overview".
	1	4	3	Insert a comma after "Also".
	1	4	4	Insert a comma after "considered".
	8			At intersection of "Barrier Island Restoration" and "Threatened and Endangered Species", change "to constructed" to "to be constructed".
11E.68	19	2	7	Change "have" to 'has".
	25	1	7	Change "this Restoration Plan" to "this EIS"?
		4	7	Change "marsh losses, in" to "marsh losses in.".
	31	5	3	Insert a comma after "located where".
	31		4	Insert a comma after "what schedule".
	33	3	12	Change "They commented* to "The authors commented".
	39	3	2	Change "maintained navigation channel" to 'maintained navigation channels".
	41	3	7	Change "shallow. calm water" to'shallow. calm waters'

RESPONSE llE.65: We believe that, in a general sense, the previous sections do lead to the conclusion that implementation of the CWPPRA will benefit economic development.

RESPONSE llE.66: We do not believe that enough is known about how the Restoration Plan will be implemented to go into detail on how the various projects that will make up the plan will cumulatively effect the environment.

RESPONSE llE.67: We do not discuss mitigation in the EIS simply because the Restoration Plan is composed of projects that are supposed to be environmental enhancement projects. We believe that if the projects do not produce net environmental benefits, then they should not be built. Project designs should obviously be modified as necessary through the NEPA and the 404 permitting processes and through sound environmental engineering to minimize adverse impacts and maximize beneficial effects, but beyond that, we do not believe compensatory mitigation should be necessary.

Page	1	Line	
49	2	7	Change "an draft EIS' to "a draft EIS".
51	2	1	The paragraph beginning 'The effects of fixed crest weirs"... makes no sense as a paragraph of its own. It apparently goes with the preceding paragraph. and should be so arranged.
54	3	13	In the last sentence of 3.3.2.5, there appears to be a double negative of sorts ("if negative effects ... would not be expected")...
54	4	7	Change *proposed diversions sites" to 'proposed diversion .sites .
56	2	6	Insert a comma after "beneficially".
70	2	13	Insert a comma after "although listed in the table".
79	2	4	Change 'of because" to "because of"
100	5	4	There is a word missing after "economically".
100	5	8	Too many "advantages". Suggest changing "physical and locational advantages' to 'physical resources and location[a].

16.68 Cont.

RESPONSE llE.68: We have incorporated your suggested editorial revisions as appropriate.

Comment Package 11F

A REVIEW OF THE COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT - LOUISIANA COASTAL WETLANDS RESTORATION PLAN

FOR
ENVIRONMENTAL PROTECTION AGENCY
REGION 6 DALLAS

BY

IVOR Ll. VAN HEERDEN, Ph.D.,
DON DAVIS. Ph.D.,
LOUISIANA STATE UNIVERSITY

AND
MIKE BARBER. Ph.D.,
TULANE UNIVERSITY

23 AUGUST. 1993

CONTENTS

PAGE

A. ABSTRACT 3

B. INTRODUCTION 4

C. RESTORATION PHILOSOPHY -NATURAL PROCESS MODU FOR HABITAT RESTORATION 6

D. GEOMORPHOLOGICAL UNITS AND DOMINANT PROCESSES 7

1. ACTIVE DELTA 7
2. ABANDONED DELTA 7
3. CHENIER PLAIN 8

E. GENERAL DISCUSSIONS OF THE CWPPRA DRAFT PLAN 8

F. A DISCUSSION OF INDIVIDUAL BASIN STRATEGIES 10

1. THE MISSISSIPPI RIVER DELTA BASIN 10
2. THE ATCHAFALAYA BASIN 11
3. THE TECHE/VERMILION BASIN 12
4. THE BARATARIA BASIN 13
5. THE TERREBONNE BASIN 14
6. THE MERMENTAU BASIN 15
7. PONTCHARTRAIN BASIN 17
8. BRETON SOUND BASIN 19
9. CALCASIEU/SABINE BASIN 19

A. ABSTRACT

On contemporary maps of delta switching more than 10,000 years of geomorphic history are recorded. Superimposed on this natural sequence of deltaic events are the engineered structures that harnessed and trained the Mississippi River's 54 tributaries to follow a designated route. Unfortunately, these levees deprive the coastal low lands of sediments, that if deposited in the natural way, would renourish and promote emergent vegetation within the marshes. No longer can the river overflow at random; it must follow a course outlined by earthen mounds constructed to control spring floods.

Before construction of these artificial levees along the Mississippi River, a number of natural processes directed sediment out of the main channel and reduced flood stage down river. Archaeological evidence suggests these geomorphic features were a natural phenomenon that often functioned for several hundred years. Once the river broke through its natural containment levee, it flowed at will. For example, in 1849 overbank flooding inundated the upper Barataria basin to a depth of four feet, depositing a thin layer of new sediment onto impacted sugar and rice plantations and within the alluvial wetlands. In that same year, Sauve's crevasse submerged New Orleans for 48 days. In addition all of the major riven and bayous of south Louisiana served as natural conduits for flow. In the annual spring-high-water events these channels directed valuable mineral-rich sediments into the coastal marshes and swamps.

More than 150 years ago, many engineers advocated these natural outlets should be emulated by constructing artificial outfalls that would act as conduits to move flood waters into the coastal lowlands, depositing after each flooding event a veneer of delta-building sediment. A comparable plan, using funds dedicated for this purpose in the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) (Public Law 101-646 also called the Breaux-Johnston Bill), is currently being proposed for renourishing Louisiana's disappearing wetlands. These actions include:

* uncontrolled diversion of the Mississippi River into Breton Sound;
* reconnecting Bayou Lafourche to the Mississippi River and build control diversions along its course to renourish the fringing wetlands;
* expanding the flow down the Atchafalaya River to increase the sediments available to create emergent vegetated wetlands;
* construction of controlled fresh water diversions;
* regulating dredge and fill activities;
* promoting the beneficial use of dredge material; and
* promoting land building in the Atchafalaya delta and the surrounding parishes either naturally or with the use of sediment conduits engineered to move large quantities of sediments into region's experiencing an accretion deficit.

In the long-term, protection, preservation, and restoration of Louisiana's wetland resource base cannot be accomplished without diverting sediment-laden water from the Mississippi River. Bayou Lafourche, and the Atchafalaya. The driving principle should be a system that mimics natural processes as close as possible, with emphasis on projects large enough to make a regional difference in meeting the federal no-net-loss guidelines.

B. INTRODUCTION

After the devastating 1927 flood, the United States Army Corps of Engineers began to construct the Mississippi's 'guide levees.' Today this levee network protects cities, towns, villages, farmland, and industrial complexes. In retrospect, the levees had a dramatic impact on the general ecology of the wetlands, and modified the orderly distribution of fresh water out of the river into the marsh-estuary complexes. Natural wetlands processes, interlevee-basin drainage regimes, and vegetation patterns were altered permanently. Engineers brought about these changes through their use of levees, internal drains, and pumps. Through time, the Mississippi's levees were strengthened, eliminating overbank flooding and the systematic sediment recharge to Louisiana's subsiding coastal lowlands through crevasses. Sediment flow was effectively shut off. Natural accretion, derived from overbank flooding, was terminated. An artificial levee system is responsible. Engineered to protect the population living within the river's alluvial valley, this levee also altered the region's natural topography.

Deprived of the necessary sediments to maintain its vegetative character, the wetlands began to change. In less than 100 years the surface of the marshes began to open up. Land loss became an issue of critical concern. Recognizing this problem, funding provided under the CWPPRA has been used to implement a strategy that will restore, preserve, and enhance the state's eroding wetlands. Projects support through the CWPPRA process are designed to counteract site-specific erosional problems. Each project is designed to address a specific land loss issue within the narrow limits of a specific geographic area.

No single solution will solve Louisiana's land loss problem. It will take a multiple approach based on creative and innovative ideas and engineering methods. In assessing, therefore, from a scientific and technical point of view the plans presented there are a number of positive and negative elements that need to be addressed. Each plan has its limitation. Even though a number of visionary ideas are incorporated into each plan, they are not serving as the guiding principles behind each plan's philosophy. These coast-wide ideas need to become CWPPRA's blueprint, with all other elements coupled into the comprehensive design. The program should revolve around coast-wide issues by adopting a process-oriented approach to management decisions, not one based on a map of land loss. This does not mean ignore individual projects; it does mean these projects should function like the natural system. They should duplicate, as

close as possible, natural processes which in the long term represents the region's restoration future. Natural process built the region, use them to restore it.

Although the introductory text and general outlines of strategies presented appear to be well intended, they do not have a well defined focus, as suggested by the list of projects presented for consideration as priority issues. Therefore, the projects presented, while important for site-specific areas, do not often consider larger issues. The project lists represent catalogues of basin concerns. While generally well meaning, the basin concept was adopted to simplify the process of assembling all of the projects into clearly defined geographic/geomorphic regions. The problem is the natural system operates across these boundaries. The driving mechanism should be on the entire ecosystem. Without this guiding principle, the end result is plans tied exclusively to these geographic units and are not incorporated into a larger strategy. Consequently, each basin should be merged into a much broader plan that consolidates several basins into one restoration design.

Currently, many of the mtoration efforts on the priority lists are weak, because they only confront a particular area of concern. At the local level these issues may be quite significant and justify the expenditure of CWPPRA funds to correct or arrest the problem. However, in the long term they should be part of a larger, systematic, process-oriented approach to utilize natural forces to stabilize or rebuild Louisiana's coast. The object should be a management strategy that emphasizes the entire system—not one user group, species, habitat, or natural element (such as salinity)—with a clearly defined conceptual design that will move the process into the 21st century—regardless of the funding source. This type of solution should not be disregarded simply because funding may have to come through a separate authority. Time scale are important and have been superficially disregarded, because of the five-year time frame associated with CWPPRA.

Whether the project is a levee, plug. segmented breakwater, impoundment, or barrier, each of these 'solutions" will eventually require considerable maintenance. Maintenance costs are recurring expenditures. It behooves all participants to look at solutions that yield maximize benefits with minimal long-term annual expenses. If no net loss is to be achieved, it is prudent and critical the Task Force adopt an aggressive philosophy of managing for gain by incorporating into their collective attitudes,an approach that will produce long-term sustainable benefits.

Overall, all plans reviewed lack sufficient graphics and tables to substantiate a number of points made in the text—numbers are used without reference to sources. This problem is particularly annoying when reading about the number of acres each project will create. enhance, or benefit. Enhanced and benefitted acreage should be removed from the equation. These are misleading terms. Certainly most projects will enhance and benefit the wetlands. Our immediate concern, however, is building new vegetated wetland, or protecting what is currently available. The enhanced and benefitted portion of the discussion cannot be calculated accurately. In most cases this is pure conjecture.

Sediments are a major component in reaching the no net loss objective. They are critical. Yet in the final analysis, the concept of aggressively managing the Mississippi's. Bayou Lafourche's, and Atchafalaya's flow is only mentioned in the text. It is not considered an element that can serve as a source of net gain. For example, Bayou Lafourche should be used as a distributary. This is its natural function. Historically, it has introduced large volumes of water and sediment into the wetlands. In some cases, the objective appears to be to build a levee and protect against the inevitable demise of the wetlands, rather than searching for a solution that will mimic the natural system. Bayou Lafourche is there and it should be used. It is in the plan and should be manipulated to meet the basin's sediment deficit needs.

In all basin plans hydrologic restoration is mentioned as a critical area of concern. However. in many cases this is not reestablishment of the natural hydrologic regimes, but creating new hydrologic pathways. Hydrologic changes are important. Consequently, the restoration effort should restore, as close as possible, the original drainage patterns, which may be the easiest means of mtoration and perhaps the most cost effective. Moreover, 'hydrologic restoration' is incorporated in many of the basin's plans, but is not clearly defined.

Additionally, usable mtoration material is available through maintenance dredging of the area's navigable waterways. The beneficial use of dredged material should be an active part of any dredging endeavor. The idea this technique is only used where feasible and when funding is available should be reconsidered on a case-by-case basis. It should not be ignored. With rare exception, the beneficial use of this material is feasible, but is not used because of long-standing practices against its use. This attitude is beginning to change, with positive result. In the emerging Atchafalaya delta, where dredgers are creating 100s of acres of wetlands a month, the process is demonstrating how this process can enhance wetland creation.

C. RESTORATION PHILOSOPHY -NATURAL PROCESS MODEL FOR HABITAT RESTORATION

In development of any large-scale habitat restoration plan it is important to formulate an understanding of the natural physical and biological processes operating within each major geomorphological unit. This is basic to the success of any plan. Once this process-oriented approach has been achieved, individual plans or projects ranging in scale from large, long-term to smaller, shorter-term efforts, can be developed. In order to use natural processes as the basis for any plan development. the following assumptions are made:

- it is implied the plan will not favor any individual species, marsh type (ie. flotant), aquatic organisms (ie. oysters) or wildlife (ie. ducks);
- by working with a natural process model all ecological units will be represented; and
- that maintenance costs will be low as the plan is working with the natural system—rather than against it.

GEOMORPHOLOGICAL UNITS AND DOMINANT PROCESSES

Within coastal Louisiana we recognize three major geomorphological units—Active .Delta, Abandoned Delta, and Chenier Plan. The following discussion assumes that the impacts of man on these physiographic units are minimal.

1. ACTIVE DELTA

In an active delta the dominant physical processes are those related to the input of fresh water and sediments. Thus fluvial processes (sediment input and fresh water) dominate over the basinal processes of subsidence, wind-wave and ocean swell erosion, tidal scour etc. The net result is the expansion of the wetland surface over time and the dominance within the system of fresh-water habitats. Implied in active delta processes is the flooding of wetland areas, to a greater extent than before the unit converted to an active delta setting, as the delta and associated fluvial channel system progrades and fills in topographic lows on the landscape.

2. ABANDONED DELTA

In the abandoned delta geomorphological unit basinal processes dominate over fluvial. However, the fluvial input of fresh water and sediment, although reduced from when the system was an active delta unit, leads to the maintenance of large parts of the wetlands. This maintenance almost balances the combined erosion/wetland loss basinal processes.

Generally an abandoned delta area shows a marked gradation of marsh types from saline at the coast to fresh along interior portions of the basin. These wetland types slowly migrate landwards with the fresh and, intermediate marshes generally being reduced in area of distribution. Some areas of the basin, where basinal processes strongly dominate over fluvial, are characterized by marsh segmentation and pond formation. These processes work to the detriment of the emergent wetlands.

A short time after abandonment is initiated, ie. Basinal processes start to dominate. the outer beach or shoreline separates from the marsh as a string of barrier islands. The intervening area converts to a productive estuary. The barrier islands march slowly landwards, generally at a rate less than the outer shoreline of the marshes and the estuary enlarges. The estuaries of abandoned delta geomorphological units are very productive and sustain a large percentage of the commercial fisheries (ie. Barataria Bay).

Ultimately the outer coastal marshes are eroded down to a series of islands with the barrier islands being a long way to seaward. The estuarine system is now replaced by a Sound (ie. Breton Sound) and the estuary is now restricted to small bays within the marshes that have tidal connections to the Sound.

3. CHENIER PLAIN

When an active delta is in the vicinity of Fourchon, or west thereof, significant amounts of sediment are deposited along the shoreline, which progrades seaward as a vegetated mud flat. Fluvial processes dominate over Basinal. When active deltas are located east of Fourchon. Basii processes overshadow the Fluvial and the shoreline reworks into a beach ridge or chenier, which migrates landwards.

The majority of the material in the beach are shell fragments, reflecting shells out of the eroded mud flats, but also shells from organisms on the shallow inner shelf. Ocean swell processes incorporate the shells into the beach.

The interval during which the dominant Chenier Plain processes switch from Basinal to Fluvial is marked by rapid shoreline erosion. The onset of the fluvial phase increases the turbidity of the shallow inner shelf impacting the productivity of the invertebrates. This in turn reduces the amount of material that can be incorporated in the beach.

The Chenier Plain wetlands, until the intervention of man, were maintained by fluvial sediment input from a number of interior rivers draining Louisiana and Texas.

E. GENERAL DISCUSSIONS OF THE CWPPRA DRAFT PLAN

An active system of artificial diversions, as proposed in 1829, 1850, 1866, and 1874, would have replenished the marshes and offset the accumulated damage caused by leveeing the Mississippi River. A comparable plan is currently being proposed for renourishing Louisiana's disappearing wetlands. It was not, however, until the 1970s that Louisiana's wetland loss problem began to receive special attention from the research and public community. Over the last two decades interest and research increased dramatically. State officials began to take action in the design of a plan to reduce land loss and its immediate impacts.

Currently, siphons are being designed to imitate and mimic natural crevasses, while diversions will supply fresh water and mineral-rich sediments from the Mississippi River, Bayou Lafourche, and the Atchafalaya to restore and maintain wetland habitats. Diversions projects at ten points along the Mississippi—Bonnet Cam, Davis Pond, Violet Caernarvon, Hero Canal, White's Ditch, Naomi, West Pointe-a-la-Hache, Bohemia, Bayou La Moque—will emphasize fresh water introduction into the wetlands. It should be noted these are not sediment projects. Yet, sediments are the key to managing the ecosystem and associated environments and not managing for a particular habitat or species. All of these endeavors augment the Mississippi River's ability to replace the sediments necessary to reestablish the wetlands being lost.

In conjunction with funding provided under the CWPPRA and Louisiana's Coastal Wetlands Conservation and Restoration Plan, state and federal planners are implementing guidelines to restore, preserve, and enhance Louisiana's eroding wetlands. Both endeavors include projects designed to counteract site-specific erosional problems. Each project is designed to address a

specific land loss issue within the narrow limits of a specific geographical area. No single solution will solve Louisiana's land loss problem. It will take a multiple approach based on creative and innovative ideas and engineering methods.

Current restoration techniques include marsh management, shallow-bay terracing, sediment capture, structural shoreline protection against erosion and emulating crevassing through diversion projects that promote sedimentation within the wetlands. Regardless of the technique employed, mineral-rich sediments are considered critical. The simplistic natural process model presented in the previous section should be used to guide CWPPRA's comprehensive plan. The strategy, therefore, should include the following elements.

1. What are the dominant natural processes within the basin under discussion, and how have these been impacted by human activity. In other words, how'have humans changed the Fluvial/Basinal processes relationships. Have we pushed the balance too much to one end or the otha?

2. What long-term strategy can we develop to reinstate the natural processes? One goal should be reestablishing the Fluvial/Basinal processes ratio back to its natural relationship. 'This implies setting up a long-term natural process-oriented plan. In short, what large-scale (big-picture) projects can we start to initiate and finally construct to get the natural processes going?

3. What short-term projects can we initiate that will support our long-term strategies and big-picture projects.

The present development of the CWPPRA plan is severely flawed because it lacks a number of key issues.

1. It has not followed this simplistic natural process model, most of the basin plans do not reflect an understanding of natural processes, both modern and those prior to the leveeing of the river and the closure of distributary channels (ca 1904 - 1927).

2. A number of basin plans (strategies) do not pay any heed to long-term, big-picture conceptual solutions presented in the main document—solutions aimed at long-term natural process restoration.

3. Many basin plans (strategies) appear to have *started* with a list of projects and then tried to fit these into a strategy. Many times, proposed or suggested projects do not fit into the basin's strategy. If they do not fit, they do not belong in the plan.

4. Many projects appear to be aimed at a specific marsh type or are designed to benefit a single species, usually ducks.

5. The cost and benefits claimed often appear to be skewed. The cost to re-instate the natural long-term processes and to approach a no-net-loss scenario will exceed $ 1.1 billion. It will be more like $ 4.0 billion. Only with this sort of expenditure representing a mixture of long-term, large-scale projects and supporting short-term small projects will a no-net-loss scenario be achievable. We have to get the Fluvial/Basinal processes ntio of each basin back in line with what it would be if man had not interfered.

F. A DISCUSSION OF INDIVIDUAL BASIN STRATEGIES

1. THE MISSISSIPPI RIVER DELTA BASIN

The Mississippi River Delta Basin is an Active delta geomorphological unit. Fluvial processes should dominate over basinal and increase in wetland expression should be the dominant consequence of fluvial process dominance. However, this basin lost 105,298 acres of wetlands between 1932 and 1990 (ie. more than 20 % of the basin area). Such loss should be compared to the period 1880 - 1930, when Plaquemines Parish, in which the basin is located, gained 49,280 acres—a gain of 986 acres every year!

The reason for dramatic wetland loss in the basin is partially because man forced the Fluvial/Basinal processes balance towards the Basinal end due to navigation interests and flooding controls; and partially because the Mississippi River has reached the edge of the continental shelf.

11F. MISS1 The long-term strategy for this basin should be the relocation of the Mississippi River into Breton Sound at the meander is the river opposite the town of Nairn. Thus the Mississippi birds-foot delta would eventually be abandoned. As a consequence, the now abandoned delta will rework into an outer beach-barrier system and some inner marshes. Thus the short-term strategy for this basin should be:

11F. MISS2 1. Placement of as much dredged sediment as possible within a three mile strip seaward of SW - NE line passing through Venice. Such sediment will ensure the development of a substantial barrier island system once the delta is abandoned.

11F. MISS3 2. The immediate initiation of the necessary scientific, engineering and socio-economic feasibility/assessment/design studies to get the Breton Delta diversion project under construction.

We applaud the Mississippi River Delta Basin Planning Team in stating that their selected plan is the pursuit of the full-scale uncontrolled diversion of the Mississippi River.

RESPONSE 11F.MISS1: A specific site for the relocation of the Mississippi River's main channel will be determined through a feasibility study proposed in the basin plan. The Nairn site possesses several desirable features and will be given due consideration.

RESPONSE 11F.MISS2: The concept of placing dredged material for the enhancement of barrier development is extremely valuable. This concept has been incorporated into the basin plan both as a plan formulation need and a long-term supporting project concept.

RESPONSE 11F.MISS3: The initiation of some feasibility studies is already being contemplated by the task Force. Should the State recommend this project be an immediate priority, the necessary feasibility study could begin in the very near future. Should the State's recommendations become available prior to submission of this report, they will be included in the document.

2. THE ATCHAFALAYA BASIN

The Atchafalaya Basin is an Active delta geomorphological unit. In most of the basin Fluvial processes dominate over basinal. We agree with the Atchafalaya Basin Planning Team that the long-term strategy for this basin should be the modification of the operation of the Old River Control Structure to increase the amount of flow conveyed to the Atchafalaya Basin Floodway system to Atchafalaya Bay. All of this extra discharge should be allowed to flow down the Wax Lake Outlet Channel to maximize the progradation of the natural Wax Lake Delta, presently 650 acres per annum (p.a.). Whether this is achieved by removing the Wax Lake Outlet weir and connecting levees or through construction where the channel exits the basin, is an engineering question. Certainly, in the short-term, if the discharge from Old River was today increased by at least an average of 50,000 cfs, removing the outlet weir and connecting levees would result in an increase in the growth rate of Wax Lake Delta,

11F. ATCH1

In addition to building two deltas in Atchafalaya Bay. Atchafalaya sediments arc also responsible for shoreline progradation along the Gulf shoreline of the Mermentau Basin. Atchafalaya sediments are also effectively reducing land loss in the western Terrebonne Basin and move down the GIWW as far east as the Houma Navigation Canal during Atchafalaya floods. In West Cote Blanche and Vermilion Bays significant amounts of sedimentation are also occurring where short channels link the bays to the GIWW. To increase the present Mississippi discharge directed down the Atchafalaya River, even for only limited parts of the year, could only expand the area benefitted by this sediment source.

11F. ATCH2

Relocating the navigation channel to Shell Island Pass will be an engineering nightmare and would not be cost-effective. Literally millions of cubic yards of material would have to be dredged to establish a new navigation channel across the Bay and inner continental shelf. Major weir construction would, no doubt, also be necessary to ensure the whole Atchafalaya River does not jump in to the new channel. Rather, the status q w should remain.

11F. ATCH3

One structure that may have to be engineered and constructed, in terms of the long-term strategy, is a spillway upstream of Morgan City, to ensure that increased Atchafalaya River discharges do not raise the flood regime at Morgan City. Additionally, communities in the Verret Sub-basin of the Terrebonne Basin, m y have to be relocated. arc presently experiencing higher flood levels than in the past due to the Atchafalaya River Basin starting to reach a sediment-filled state.

ATCH4

The short-term strategy of making delta growth and navigation complementary, as developed by the Basin Team, is supportive of the long-term strategy. The present beneficial use of dredged material in the Atchafalaya bay should result in a rapid expansion of new wetlands in the Atchafalaya Delta. The reopening of distributary channels and the use of booster pumps/large capacity dredgers will ensure that the delta system expands at a rate compatible with what would be expected if the delta were totally natural.

11F. ATCH5

RESPONSE 11F.ATCH1: Comment noted.

RESPONSE 11F.ATCH2: The text of the basin plan'has been reworded to include the effects of Atchafalaya sediments on other basins.

RESPONSE 11F.ATCH3: The navigation channel is the primary reason that the growth rate of the Lower Atchafalaya River delta is significantly less than it would be without human intervention and even less than the Wax Lake Outlet delta that receives half the flow and sediment. It makes sense to solve this problem by moving the channel if possible. The status quo will not maximize the effective use of flow and sediment when the majority of that sediment bypasses the Lower Atchafalaya River delta. Engineering studies will tell us if this project will work. Other reviewers also support this concept.

RESPONSE 11F.ATCH4: A spillway upstream of Morgan City would reduce the growth rate of the Lower Atchafalaya River delta and should only be considered if the majority of the flow is diverted down the Wax Lake Outlet to counteract the reduced delta growth of the Lower Atchafalaya River delta. That alternative was eliminated. See section on Rationale for Selected Plan. A barrier levee to prevent flooding in the Verret Subbasin is a more acceptable and feasible solution to the flooding problems to the east of the Atchafalaya Basin than moving communities.

RESPONSE 11F.ATCH5: Comment noted. Making delta growth and navigation complementary is a long-term, rather than short-term component of the basin plan.

11F. ATCH6

The Atchafalaya Basin is one basin in which there has been a very positive link up between Federal and State agencies, and the academic research community. The latter, through their understanding of the natural physical and biological processes operative in the am, do the conceptual designs for the United States Army Corps of Engineers (USACE) as to where and how dredge material should be placed. The Louisiana Wildlife and Fisheries, as trustees of this area, work with the designs and the USACE to come up with the final disposal sites. This teamwork will ensure that over the next few years, many 100's of acres of new wetlands will be created through the beneficial use of dredged material in Atchafalaya Bay.

3. THE TECHE/VERMILION BASIN

The Teche/Vermilion Basin is in transition from an abandoned delta geomorphological unit to an active delta. Thus the strategy, both short-term and long-term, should be to enhance fluvial processes.

11F. T/V1

The CWPPRA Planning team identified reducing shoreline erosion along bays and waterways as a major objective for this basin. Bay and pond shoreline erosion within the basin is part of the natural process. To expend energy and finances in bay shoreline protection is fruitless and goes against the re-instate natural process mode. Shoreline protection along man-made and other navigational channels, should where necessary, be undertaken. In the past the strategy with these channels has been to place rip-rap along the bank. raise bank lines or build shear wooden walls. However, engineered shorelines, the banks of navigation or oil/gas access canals, cut into wetlands mandate a totally different approach to stabilization. The reasons being the relatively deep water immediately adjacent to the bank; the shear vertical aspect of the bank and the relatively high energy associated with boat wakes. In several overseas countries, a flexible concrete mat placed on top of a geo-fabric on a bank sloped at 15 to 20 degrees, has proved successful in the stabilization of dredged waterways. This method has seen limited use in Louisiana, by petroleum companies principally, but the results are encouraging. Ultimately, such technology may have to be used on a large scale to stabilize the myriad of dredged channels and canals in coastal Louisiana. An important aspect of bank stabilization is that bank caving and associated wetland erosion is dramatically reduced, and as a consequence, so is the need for expensive channel maintenance.

F. T/V2

The second major objective for this basin is the reduction in wetland loss in the 'hot spots", reading the project list this is supposed to be achieved by hydrologic restoration. Projects, such as TV-4, that consider reducing the input of sediment-laden waters into the wetlands, for whatever reason, should not be part of any short-term strategy for this basin. Project TV-4, which is estimated to cost $ 4,579,428 will effectively impound a large area of marsh that, because of fresh water and sediment input from Atchafalaya Bay, has converted from brackish/saline marshes in 1949 to fresh marsh at present! This project is nothing but a marsh management scheme and goes totally against the natural processes of a basin becoming more fluvially dominated. The same comments apply to TV 5/7.

RESPONSE 11F.ATCH6: Comment noted. Project XAT-5, Delta Management, is patterned from the positive link-up and cooperation of various agencies in regards to beneficial use of dredged material. Delta Management will incorporate this effort into its overall management plan.

RESPONSE 11F.T/V1: Your concerns about shoreline erosion control measures being very costly and not being effective in the long-term have been incorporated. Projects that would reduce or stop typical erosion problems occurring in the basin are not given a high priority.

RESPONSE 11F.T/V2: The projects you refer to (T/V-4 and T/V-5) do not include levee systems. Thus, the marshes within the project areas would still flood each spring. Nevertheless, your concern has been incorporated into the basin report.

11F. T/V3

The long-term strategy for this basin should be the management of the dispersal of fresh water and sediment that enters the basin from the Atchafalaya River along the GIWW and directly from Atchafalaya Bay. Short-term strategies should take cognizance of the fact that Atchafalaya discharges will be increasing in the future. Short-term strategies should thus be the protection of the banks of man-made canals to reduce erosion of adjacent wetlands; hydrologic restoration to ensure that natural waterways or drainage lines will function to ensure the full penetration of the sediments coming from the Atchafalaya. The basin plan as it presently stands appears to be a case of strategy thought up to link a bunch of previously devised projects.

4. THE BARATARIA BASIN

11F. BARA1

In the Introduction to the Barataria Plan there is clear concern over the amount of fastlands within the region. This is a good point and should be incorporated in all plans, as it is the fastlands that serve as the region's high ground. These are the areas that have historically served as the focus for settlement and economic development. Further, the plan calls for the use of siphons and diversions to enhance-and create wetlands. This is the type of management strategy that should be aggressively considered and promoted. The Mississippi has during its annual cycle of spring floods the necessary flow to easily build land through a larger number of well designed crevasses. Gaping and directing flow across Bayou Lafourche's eastern levees will also serve as a valuable source of mineral-rich sediments.

11F BARA

Historically, crevasses served as natural safety valves in directing flood waters away from the river's main channel. These natural outlets should be emulated by constructing artificial outfalls that would act as conduits to move spring flood waters into the coastal lowland;, depositing after each flood a veneer of delta-building sediments. This process would renourish the wetlands annually. In retrospect, an active system of artificial diversions would have replenished the marshes and offset the accumulated damage caused by leveeing the Mississippi River. Consequently, this type of controlled crevassing should be an integral part of the comprehensive plan. Bayou Lafourche is mentioned in the text, but it is not incorporated into a comprehensive approach to solving the basin's wetland problems, which in most cases is associated with an accretion deficit. The maps on page 15 should add a Bayou Lafourche crevasse component—particularly to the upper basin.

11F. BARA3

Long-term protection, preservation, and restoration of Louisiana's wetland resource base cannot be accomplished without diverting of sediment-laden water from the Mississippi. Historically, crevasses and overbank flooding renourished the wetlands. Crevasses served as conduits to direct sediment-laden water throughout the corridor affected by the break. Sediments are critical in rebuilding the wetland. They are necessary in order to help offset accretion deficits partially induced by channeling the Mississippi. Mississippi delta projects that emulate crevasses will provide valuable baseline data in the analysis of the success of small-scale diversion efforts. These controlled crevasses should be monitored carefully, because they represent a cost-effective way to maximize movement of sediment-laden waters into sediment-starved areas.

RESPONSE **11F.T/V3:** Management of sediments from the Atchafalaya River through the GIWW and directly from Atchafalaya bay have been made the first strategy in the basin plan.

RESPONSE **11F.BARA1:** Strategy 1 emphasizes both freshwater and sediment diversions, as well as outfall management, to capitalize on the availability of fresh water especially during spring flows.

RESPONSE **11F.BARA2:** Both the text and the description of the Bayou Lafourche Freshwater Diversion project (PBA–20) have been expanded. The strategy maps include a diversion from, or reconnection to, the Mississippi River and numerous small diversions from Bayou Lafourche to marshes in the Barataria basin. Diversions are also included for the Terrebonne Basin (see the Terrebonne appendix).

RESPONSE **11F.BARA3:** The monitoring protocol has established the minimum amount of monitoring for CWPPRA projects. Large–scale crevasses constructed with other funding should have pre- and post–construction monitoring costs factored into the total project cost.

11F. TERR4 Cont. this concept appears in the Key Issues Section, it should be addressed much earlier in the text to assure individuals reading this document that every attempt will be made to use appropriated funds in a prudent and judicious manner.

11F. TERR5 A discussion of process used to obtain the Wetland Value Analysis should be incorporated in every section. What is a WVA? How are WVA's calculated? Why were WVA's established? These questions should be answered in a WVA section. Currently, without this discussion the reader has no idea what these derived number mean.

11F. TERR6 In many sections, landowner approval is considered essential. It is important this constituent group be contacted and informed of what is happening, or may happen, in or on their land. Workshops and seminars should be incorporated in the planning process to ensure this group is not the last to be informed. They need to be an important part of the decision-making process.

11F. TERR7 The suggested program encourages developing marsh management plans that seem to focus on impounding marsh areas, or designing projects that promote tidal exchange. The debate continues on the *structural* modifications required to maintain and/or regulate wetland habitat quality and quantity. The problem is that impoundments tend to 1) limit some species of vegetation, and fish and wildlife 2) alter hydrologic regimes and nutrient cycles 3) eliminate sediment 4) reduce public access and 5) restrict movement of estuarine organisms. Although considerable discussions center around the merits of impoundments, there are other techniques that need to be at least evaluated. They are apparently not being considered. Regardless of the technique employed, sediment is considered critical and there is a good case made for the use of the available nutrient-rich sediments. The object should be managing the system to enhance and build vegetated wetland. The goal is an offense designed to manage gain not manage for a particular species or habitat.

In general there are many excellent ideas presented in this plan that are worthy of note. However, most of the ideas are lost in the text. They should be highlighted to show the reader that the plan does, in deed, address short- and long-term issues in the development of the mandated Comprehensive Wetlands Planning, Protection, and Restoration Plan. The Terrebonne Basin is a complicated region, because many consider it isolated from a source of miner-rich sediments. That may not be the case. As is the case in the Barataria system, Bayou Lafourche may have to be used as the sediment conduit.

6. THE MERMENTAU BASIN

Direct sediment input from deltas does not appear to have been the process responsible for building the Chenier Plain. Rather, shoreline progradation as mud flats occurred during periods when the center of Mississippi River deposition activity was west of Fourchon. As is the case today, coastal mud streams were responsible for moving the sediment westward where it was deposited along the coastline. Chenier ridges are products of shoreline retreat that took place when significant mud inputs to the near-shore marine environment did not occur. Sand and shell berms and dunes developed along mainland beaches. These coarse materials stabilized the

RESPONSE 11F.TERR4: This has been was done under descriptions of strategies (see Strategies Considered, page 15).

RESPONSE 11F.TERR5: This information is in the main report.

RESPONSE 11F.TERR6: The Task Force is instituting a new public outreach program, that will, via newsletter, mailings, and regular press releases and conferences, notify the public of the status of the Restoration Plan, hearings, meetings, and the expenditure or commitment of restoration funds.

RESPONSE 11F.TERR7: Basin objectives were rewritten to emphasize restoration of fluvial inputs as the first objective. The importance of long-term strategies to bring sediment into the basin was also re-emphasized, and the perspective of the short-term protective strategies was explained.

11F. MERM5 Cont.

to only this issue. Saltwater is only one element of concern, it can be countered but will require more than short-term management decisions. The solution is in the long-term introduction of sediment and fresh water. The management team's thesis should revolve around natural processes, not artificial systems.

11F. MERM6

Because mud flat accretion is not yet occurring along the western Gulf shoreline, the segmented breakwaters constructed by the State may have to be augmented with direct sediment placement on the beaches. Any extension of the breakwater system should only be undertaken once the potential negative impacts of these structures on mud flat accretion has been determined.

7. PONTCHARTRAIN BASIN

11F. PONT1

Environmentally, the best scientific solution to wetlands loss in the Pontchartrain Basin (and perhaps Breton Sound) would involve closing the Mississippi River Gulf Outlet (MRGO); once and for all ending the environmental nightmare it has caused. The MRGO, designed to be a 500-foot wide, 36-foot deep tidewaterchannel, is now more than 2000-foot wide in some places. The USACE estimates that over 2,400 acres of marsh have been lost since 1968 and that ship induced waves erode the north bank at a rate of 15 feet per year. Furthermore, MRGO permits higher salinities to intrude into Lake Pontchartrain and the surrounding area.

11F. PONT2

In selecting the so-called 'best' basin alternative. the USACE in effect predetermines the outcome by factoring in the cost of replacing the MRGO. Whether or not the MRGO should be replaced by another canal should be based on economic and environmental analyses which are consistent with the goals of all governing agencies. It should not be a foregone conclusion that a new channel is necessary. Claims of job loss are exaggerated since the underlying assumption is that all ship traffic currently using MRGO would be diverted to a port other than New Orleans. Although this may sound like blasphemy, it may not be a horrible solution to spread out the jobs to other ports where the environmental consequences may not be as great. Furthermore, the United States Environmental Protection Agency's (EPA) position concerning MRGO should not be based on economics any more than its position on cigarette smoking.

11F. PONT3

We have examined the proposed Bonnét Carré diversion project from numerous angles and still can not, in all good consciousness, recommend this project as a band-aid for the environmental damage caused by the MRGO. As currently proposed, the potential negative environmental effects to Lakes Pontchartrain and Borgne, and the questions regarding the lack of hard scientific justification concerning many of the beneficial claims by proponents of the Bonnet Carré diversion project, outweigh the probable positive project features. The management plan for Bonnét Carré diversions is based on salinity concentrations in Mississippi Sound, not near the MRGO. The highest diversions would be in early spring and would, therefore, not benefit the lake during the more critical autumn months where prevailing wind and storm conditions are more likely to drive the salt water wedge into the lake. The diversions were determined based on fresh water deficits created by drought conditions in the Pearl River basin and there is little or no justification as to whether or not the assumed mixing would occur.

RESPONSE 11F.MERM5: We feel that the current basin strategy does not dwell on prevention of saltwater intrusion through artificial means. The basin plan centers on lowering of water levels in the Lakes Subbasin and bringing fresh water to the Chenier Subbasin. This basin strategy involves returning natural processes to the area through the use of man-made structures (i.e. culverts under Highway 82 to return freshwater introduction to the Chenier Subbasin). An attempt is made to lower water levels to a point that is more conducive to emergent vegetation in the Lakes Subbasin and to implement freshwater diversions to the south to mimic what had happened naturally prior to the present hydrologic alterations in the basin.

RESPONSE 11F.MERM6: We agree that the shoreline protection afforded by segmented breakwaters can possibly be increased by sediment deposited along the shoreline. We do not accept the premise that segmented breakwaters may have "potential negative impacts" to mud flat accretion. No one has constructed these breakwaters in the areas where mud flats are accreting in Louisiana to date. However, the existing data from the LDNR indicates that the breakwaters near holly Beach in Cameron Parish are successfully reducing shoreline erosion and stimulating beach accretion.

RESPONSE 11F.PONT1: Since the MRGO alone is not responsible for increased salinities in the basin, closing it does not solve the problem. The major problems are subsidence and lack of freshwater input from the river, with its accompanying nutrients.

RESPONSE 11F.PONT2: We do not understand this comment. A new channel is not proposed in the basin plan.

Most of the damage caused by the MRGO is already done. The only ongoing damage is bank erosion. The most cost effective solution to this problem is bank stabilization. Closing the MRGO would cause the loss of 10,000 Louisiana jobs would have a significant adverse effect on the State's economy.

RESPONSE 11F.PONT3: The negative impacts of the MRGO in Lakes Pontchartrain and Borgne are minimal. The effects of existing freshwater diversions lower in the river provide scientific evidence that bears out our conclusion that the Bonnet Carré Diversion will preserve wetlands and improve fisheries.

It is mainly salinities in the Biloxi marshes of Louisiana that would drive the operation plan of the Bonnet Carré diversion.

11F. PONT4 The statement concerning water quality at the bottom of page 18 is misleading at best because it is based on numerous assumptions not clearly indicated including a very limited number of data points and the premise that US EPA will not require municipalities to improve water quality based on storm water permits. Since no mention of a water quality index for the lake is made, one must assume that improvement is for every parameter for all time. Moreover, the water quality in the Mississippi River is highly variable so it is conceivable that mass loadings into the lake may be significant.

11F. PONT5 The Pontchartrain Plan does very little in the way of introducing sediments into the upper basin. Additional fresh water and sediments, perhaps even from a redesigned Bonnét Carré project could be routed through the upper wetlands to filter out sediments and nutrients. Additional, long-term nutrient cycling studies in wetlands would be needed to evaluate the possible negative impacts to the receiving waters.

11F. NT6 The US EPA sponsored a Lake Pontchartrain Basin Management Plan which expressed the concerns of many local residents. This plan does not even acknowledge the existence of such a document. This oversight should be corrected.

11F. PONT7 There is an overwhelming lack of demonstration projects slated for this basin given the environmental activity of groups such as the Lake Pontchartrain Basin Foundation and the Coalition to Restore Coastal Louisiana, the potential media coverage, and public opinion from New Orleans and North Shore area residents.

11F. PONT8 One, highly visible potential project exists within the City of New Orleans at Bayou St. Johns. Bayou St. Johns is located at the east side of City Park. The entrance to Bayou St. Johns from Lake Pontchartrain was once covered by a beneficial grass bed. However, development of hard structures along the shoreline caused wave energy to be reflected into the mouth of the bayou. The increased energy scoured the bottom so the sediments which once covered the mouth of the bayou have now been replaced with an armored surface consisting primarily of shells. Sediment fence structures could be placed in Lake Pontchartrain and in the mouth of Bayou St. Johns. The density of the fence, angle of wave approach, height could be varied and the amount of sediment accumulated in the area could be closely monitored. When (if) sufficient sediments were deposited, the area could be revegetated and the biodiversity of the grass bed could be examined to determine the benefits of grass beds in coastal wetland areas as well as the regeneration time.

11F. PONT9 Numerous other projects are likely to exist in the Pontchartrain Basin including the beneficial uses of urban storm water, nonpoint source erosion control on wetlands along the North Shore, Cypress restoration projects, and the beneficial uses of recycled waste products such as a combination of finely crushed glass and biosolids as a stable base material in a wetland area.

RESPONSE 11F.PONT4: Mississippi River water would not significantly impact the water quality of Lake Pontchartrain. Despite extensive analysis of data by the USACE, this is a continuing argument. However, the weight of evidence bears out the conclusion above. We recognize that EPA will require a cleanup of stormwater, but until then, there are fewer fecal coliform bacteria in river water than lake water along the south shore. You can swim in the river at Luling and cannot swim along the south shore of the lake.

USACE analysis does not bear out your assertion that water quality in the Mississippi River is so variable that mass loadings into the lake may be significant.

RESPONSE 11F.PONT5: The draft plan proposed one such diversion. The final plan proposes two freshwater diversions and two sediment import projects into the upper basin.

It is hydrologically impossible and economically infeasible to route water from the Bonnet Carré diversion through the upper basin wetlands. The proposed Bonnet Carré Outfall Management plan would direct 5–20 percent of the diversion through the LaBranche wetlands.

RESPONSE 11F.PONT6: This plan is discussed on page 2 of the Pontchartrain Basin appendix.

RESPONSE 11F.PONT7: Six demonstration projects, addressing a variety of problems, were added to the final plan.

RESPONSE 11F.PONT8: This is an excellent idea for a demonstration and it has been added to the plan.

RESPONSE 11F.PONT9: Three out of your four suggestions have been incorporated as demonstration projects. The only one that hasn't is non-point source erosion control on wetlands along the North Shore (of Lake Pontchartrain).

8. BRETON SOUND BASIN

11F. BRET1 As currently envisioned, the restoration plan for the Breton Sound Basin is totally inadequate. The short-term plan will create, enhance, protect, and/or restore only 1948 acres of marsh, 1100 acres of submerged aquatic vegetation and 2320 acres of wetlands over the next twenty year period. During that same period, it is estimated that marsh acreage alone will be reduced by 19,780 acres. In effect, the plan will save less than 10 percent of the loss at a cost of $4200 an acre ($8,225,000 total project costs).

11F. BRET2 The so-called long-term strategy for restoration carries a $55,000,000 dollar price tag and benefits only a few acres of marsh and submerged aquatic vegetation. Table 4 identities a total of 1911 benefitted acres. As a result, even if this project was implemented (not currently recommended), the loss of marsh in this area over the next 20 years would still outpace the acreage that the plan will create, enhance, protect and/or restore.

11F. BRET3 The plan properly identifies subsidence, saltwater intrusion, erosion, levees, and the oil and gas industries as the causes of wetland loss in the basin. Except for the fresh water diversions effect on salinities and some secondary long-term sediment delivery schemes. the projects included in the plan seem to neglect the cause-effect-solution procedure developed in other basins. In short, additional projects must be proposed for the basin which attempt to overcome the problems of the past with visions of the future. These projects, including demonstration projects, should include the use of alternative sediments such as Kaiser's red mud and the mixing dredge spoils with fresh water diversions (especially at Caernarvon) to replace sediment deficiencies. Locating and filling of abandoned and/or redundant canals to prevent or reduce salt water intrusion should also be examined and proposed where feasible. The overall height of the spoil banks should be cut and the spoil banks should be gaped to allow more realistic hydrologic and marsh conditions. The long term goal should be to create additional acreage not offset 10 percent of the losses.

11F. BRET4 Beneficial use of dredge material will be Limited by perceived financial constraints until steps are taken to force dredgers to properly dispose of the material. Each year millions of cubic yards of material are disposed of in ocean disposal areas or in places such as Pass a Loutre where the currents are strong enough to carry the sediments out to sea. Before dredging, such sediments would have built up marsh areas and changes the course of the river. Now, this sediment is lost to the system. The USACE has been developing and implementing beneficial use plans but, despite their success to date, such plans are used only when the disposal area in convenient. Navigation interests should bare the cost of proper disposal even if the sediments have to be barged or pumped miles to an appropriate site. The use of a demonstration project could play an important role in such an endeavor.

9. CALCASIEU/SABINE BASIN

The "Perimeter Control Restoration" strategy selected for implementation is nothing more than a gigantic marsh management project. The plan calls for surrounding the area with levees and does little or nothing to address long-term needs for sediment and fresh water. The alternatives

RESPONSE 11F.BRET1: Acreage estimates have been obtained for more projects. The plan prevents the loss of 39 percent of Breton Sound Basin wetlands over 20 years.

RESPONSE 11F.BRET2: The $55 million cost of Fiddler Island has been removed from the table. This project will not be built unless costs of barrier island restoration are dramatically reduced. Benefits have been developed for other long-term projects and the plan prevents the loss of 39 percent of the wetlands in the basin over 20 years.

RESPONSE 11F.BRET3: Many of these measures were already in the plan. Plugging canals and gapping and shaving of spoil banks is major component of the PBS-9 project. Addition of sediment to the Caernarvon diversion structure was deemed infeasible.

RESPONSE 11F.BRET4: The Mississippi River adjacent to the Breton Sound Basin, does not require dredging. If Congress decides that navigation interests, and eventually consumers, should bear the cost of moving dredged material from the mouth of the river, the material could be used more cost effectively in the Mississippi Delta Basin.

examined in the plan are a joke. No effort at all was placed into obtaining reasonable cost or benefit estimates for Alternative A, and Alternatives B and C are actually one plan (perimeter and interior) so it is more than likely that Alternative B and parts of C were chosen. It was obviously a foregone conclusion that nothing was going to be done that would in any way affect ship traffic.

The project plans are very terse and are not consistent with the format used in several other basins. As such, project summaries are difficult or impossible to evaluate. Depending on the specific details of a project, the plan may or may not be environmentally sound.

Given the lack of natural sediment, this basin appears to be an ideal candidate for demonstration projects involving alternative sediments or the distribution of sediments from other basins using abandoned oil and gas pipelines. Fresh water and sediment diversions from the Sabine River or other potentially feasible rivers should be examined.

The project summaries listed in Table 4 are all based on "benefitted acres" rather than created and protected. This substantially reduces the cost per acre of these projects to an artificially low number. This should be corrected.

Comment Package 12

State of Louisiana

EDWIN W. EDWARDS
GOVERNOR

JOHN BALES
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

August 23, 1993

Colonel Michael Diffley
District Engineer
Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160-0267

RE: Comments on Draft Restoration Plan and Environmental Impact Statement (June, 1993)

Dear Colonel Diffley:

The Louisiana Department of Natural Resources (DNR) appreciates the opportunity to review and comment on the above referenced draft document. As you are probably aware, our Coastal Restoration Division staff members met with the appropriate Corps of Engineers (COE) personnel to review and discuss the first (April 1993) draft EIS. We feel this meeting was very productive and that we achieved a better understanding and balance between COE and DNR on several major restoration program issues which are of mutual concern. As a result, DNR has minimal comments on the current (June 1993) public review draft (see attached).

Unfortunately, DNR must disagree with several of the issues and positions expressed by the Environmental Protection Agency (EPA) concerning deficiencies in the draft EIS. In our view, the EIS adequately and fairly addresses the environmental concerns relative to the various coastal restoration techniques (solutions) presently available in Louisiana. We strongly urge your agency and other participating Task Force agencies to continue pursuing a balanced approach in the EIS and in the development of the final Restoration Plan. It is important to remember that Louisiana's

geology is unique and the conventional ideas in other coastal regions (e.g., regarding "hard structures" and "marsh management") is not always applicable here. To be successful, this program must be broad and flexible yet capable of addressing site-specific problems, many of which are practically unique to Louisiana's coast.

Sincerely,

Dave Soileau
Assistant Secretary

DS:BS:ks

Attachment

Draft EIS Comments (August, 1993)

	Page	Para	Line	Comment
12.1	27	4	last	Instead of '...induce the desired plant **and/or** animal community ~~responses.~~" It would be better to say that marsh managers attempt to increase vegetative extent, productivity, and diversity. That is the desired **response** in all modem marsh **management** plans to be permitted.
	27	6	3&6	**Same as above.**
12.2	28	2	all	This paragraph should be omitted. Marshes in South Carolina are not **very** comparable to Louisiana managed marshes. Furthermore, there *are* plenty of local studies that provide 'insight' to Louisiana marsh management practices. The **Devoe** and **Baughman reference** should probably be deleted throughout the document.
12.3	28	4	last	'Producing favorable effects **on** controlling marsh loss **rates** *are* less definitive...' Delete this **sentence.** It **shows bias** and is not an accurate **finding. There** *are,* in fact, many marsh management plans that have **been** demonstrated to **reverse** land loss.
12.4	28	6	1	Change '...unavoidable effects.' to "**...variable** effects
12.5	28	6	2	"~~One effect is~~ **One** study indicates that some types of passive... (Herke, Rogers, and **Knudsen, 1984), however, other studies** (Wicker, 1983; Herke, 1971; Herke, **1992; Gagliano** and Roberts, 1987; Chabreck and **Hoffpauir, 1962;** Nyman, *et* **al,** 1990; **Hoese** and Konikoff, in **press)** from the same area shows no noticeable impact on these same **organisms.** ~~Another effect is that...into and out of managed areas~~ Although this can somewhat **limit** sediment **introduction,** many **areas in** Louisiana's **marshes** are not totally dependent upon sediment, and there may be **limited** sources of sediment. **The** deep organic soik of the marshes indicate that sediment has played a minor role in marsh creation In many **areas** and much greater dependence on organic **accumulation** which Increased plant growth, both possible through use of passive management. (Nyman, Chabreck, **DeLaune,** and Patrick, 1993).
12.6	30	2		"Proposals to use only fixed-crest weirs to manage areas are ~~extremely rare~~ useful **in areas** to stop or reduce erosion. More active structures re required to regenerate marshes (Carney and Chabreck, **1977, Hess, et al, 19??.**
12.7	30	3	1	'Developed in the late 1880's...conventional fixed-crest weirs. It has ~~proven itself to~~ been indicated that it **might** be an improvement **in** thin regard (Rogers, Herke, and **Knudsen, 1992),** however the **final** analysis is still incomplete.

RESPONSE 12.1: We have retained our phrase at this point in the text because we believe it is an appropriate summary statement. However, we have eliminated any subsequent use of that phrase because it was redundant and both our phrase and your suggested change need additional explanation that we believe is not appropriate in this section of the report.

RESPONSE 12.2: We believe that it is common and appropriate practice when discussing scientific issues to reference applicable literature. We have alerted the reader that there are differences in the marsh management practices of Louisiana and South Carolina, and have made efforts to point those differences out when the South Carolina studies are referenced.

RESPONSE 12.3: We have moved this sentence to Section 3 since it deals with effects of management. We have modified the sentence to specifically refer to passive management. During our discussions, you agree that this is an appropriate statement for passive management.

RESPONSE 12.4: The sentence has been deleted.

RESPONSE 12.5: We do not believe that the conclusion that you offer can be drawn from the references cited. As for the second part of your comment, that discussion has been moved to the second paragraph in Section 3.3.2.3. where we believe that we have captured your suggestion in our own words.

RESPONSE 12.6: During discussions, this comment was withdrawn by LDNR.

RESPONSE 12.7: During discussions, this comment was withdrawn by LDNR.

	Page	Para	Line	Comment
12.8	30	6	7	'...naturally drained areas. The voids between rocks allows quicker passage of water than earthen or other structures and may in fact allow access to a very limited extent of organisms. The extreme tidal fluctuations causing scouring are greatly lessened, as in other measures, than those of open channels. Use of rock weirs is limited to areas..."
12.9	37	1	last	"...as an example of this type of sediment diversion. In the western part of the state, and other areas, sediment is not available in sufficient amounts to utilize a project of this type. The growth of marshes in these areas are more dependent upon organic accumulations (Nyman, et al , 1993; Gagliano and Roberts, 1987) and the use of other project types are more appropriate.
12.10	46	2	10	Duckweed (*Lemma* spp.) docs not grow in brackish marshes. It is found only in fresh and intermediate wetlands.
12.11	47	2	1	The common name for *Taxodium distichum* is bald cypress.
12.12	47	2		Alligatorweed (*Alternaruha philoxeroides)* is also very common in cypress swamps
12.13	52	3	all	What is the significance of this paragraph? Why include it if there is nothing at all concluded by the authors? Omit this paragraph.
12.14	56	3	last	The statement that created marshes may not function equally to natural marshes is valid. However, nearly all marshes created with CWPPRA funds will be adjacent to natural marshes and over time will in all probability function equally as well. The 2 lo 5 year old marshes in Minello's study are too young to make the point that CWPPRA created marshes may have less ecological value than natural marshes. The proximity of newly created marshes to natural marshes and the degree that sediment types will be comparable, will to a large extent, determine how quickly biodiversity and species richness will reach an equilibrium.

RESPONSE 12.8: We have moved the discussions of the effects of marsh management to the third paragraph of Section 3.3.2.3. We have included the idea presented in your comment, but have phrased it in our own words.

RESPONSE 12.9: Your suggested addition has been used.

RESPONSE 12.10: We have removed duckweed from the list of plants occurring in brackish marshes.

RESPONSE 12.11: We have used "bald cypress* as you suggested.

RESPONSE 12.12: We have added alligatorweed to the list of plants occurring in cypress-tupelo swamps.

RESPONSE 12.13: The main point of this paragraph is that the literature base, up to 1990, on the effects of marsh management on emergent vegetation is sparse. We have retained this point in the seventh paragraph under Section 3.3.2.3.

RESPONSE 12.14: The paragraph has been modified to indicate that created marshes become increasingly similar to natural marshes over time.

	Page	Para	Line	Comment
12.15	56	4	all	You could emphasize more some of the drawback of current barrier island restoration techniques. For example. We know that the back barrier marshes and shallow bays provide the platform for natural island transgression. So why arc we spending millions dredging out this platform to reinforce the islands physical integrity. This is a classic example of 'robbing Peter to pay Paul' and will, in the long run, wind up costing even more money as the islands continue to transgress into the hole that we are digging 'to save them'? We should do a better job of educating the public as to the controversial nature of barrier restoration. No doubt barriers play a role in tidal amplitude regulation and freshwater retention, but we have no clear idea how important they arc in terms of these functions nor in their total value in reducing wetland loss within the landward interior marshes. This EIS should bring to light that many of the functions and values of barrier islands arc not clearly defined and understood in coastal Louisiana. The combined benefits of such projects may not greatly reduce interior marsh loss in all cases.
12.16	57	3	all	Vegetative plantings to restore marsh should be placed under its own heading as a distinct project type.
12.17	57	5	all	Wan dampening fences could be a component of the sediment trapping or shoreline erosion control with structures or headings or even could be considered a distinct project type. Wave dampening fences such as hay bale fences can be used to dampen wave energy in shallow open water environs where there is little or no suspended sediment to trap. They could also be used to protect newly established plantings.
12.18	58	3	2	Water level management is only a component of active marsh management. Delete "...(which active marsh management really is)..." There is more to marsh management than merely water control as this statement reflects.
12.19	60	2		There is an entire section on SAV and insufficient mention of floating aquatic vegetation (FAV) FAV should be included in this section almost everywhere SAV is mentioned. It serves most of the same ecological functions.
12.20	60	5	all	Omit this paragraph. This really isn't true. We know which species of SAV and FAV occur in most abundance in different marsh types and predictions are not difficult to make.
12.21	61	last	2	change "sediments" to "sediment"
12.22	64	3	all	Outfall management in addition to having effects similar to hydrologic restoration will tend to expand habitat for wildlife that require fresher conditions and displace fisheries that are intolerant of fresher conditions.

RESPONSE 12.15: We have added some of your suggestions to the report.

RESPONSE 12.16: During discussions, this comment was withdrawn by LDNR.

RESPONSE 12.17: We have included some of your suggestions.

RESPONSE 12.18: During discussions, this comment was withdrawn by LDNR.

RESPONSE 12.19: In the third paragraph under Section 3.3.4.1. we state that the term "submerged aquatic vegetation", as used here, also includes floating aquatic vegetation.

RESPONSE 12.20: During discussions, this comment was withdrawn by LDNR.

RESPONSE 12.21: We have made the suggested correction.

RESPONSE 12.22: We have included your suggested addition.

	Page	Para	Line	Comment
12.23	66	1	last	'...managed areas, the impact is might be significant. (Herke, 1979), or it may be negligible (Hoese and Konikoff, in press; Herke, 1992; Wicker, 1983; Herke, 1971; Gagliano and Roberts, 1987; Chabreck and Hoffpauir, 1962; Nyman, et al, 1990).
12.24	67	3	last	Hoese and Konikoff (in press) is cutting edge research in marsh management and it's importance should not be down played as you have here. Include this statement. 'This study indicated that the overall populations of managed systems is maintained despite partial restrictions on organism movements due to water control structures. In addition, this study suggest that recruitment, growth and eventual export rapidly increases in managed areas.'
12.25	67	4	2	'...enhances growth of SAV is sometimes claimed as a benefit of marsh management.."? You have claimed it yourself already in previous sections (see pg. 31.51, 61, 63)
12.26	67	5	I	'However, improving...management.' There are exceptions to this in that some of the landowners are extremely interested in maintaining fisheries resources (CS-20, Mud Lake), and recognize the loss of habitat to have a long-term negative impact on the fisheries resource that want to maintain. Landowners need to continue to have a major impact on methods for protection of their lands since they are the one impacted the most by these decisions. "Historically,..."
12.27	78	1	I	'...management projects is that salinity levels, on the average, would not be increased ~~above the levels expected without~~ decreased where active management scenarios are planned to meet this objective. Other studies suggest that improved water quality parameters would be benefited under managed areas after temporary adverse effects during construction (Chabreck, et al, 1978)
12.28	84	1	all	This entire paragraph should be omitted. As stated in the previous paragraph, ownership of tidal and emergent wetlands is very complicated and often requires case by case analysis. Furthermore, all tidal overflow lands are not claimed by the State of Louisiana. This paragraph was reviewed with Mr. Glen Kent, Director, Office of State Lands.

RESPONSE 12.23: We do not believe that the referenced studies could lead to the conclusion that passive management's effects on fisheries resources is negligible. In contrast to the referenced Herke (1979) study, which was a controlled experiment, the other studies used survey data to conclude that estuarine fish were present in managed areas.

RESPONSE 12.24: We have reviewed the Hoese and Konikoff paper and we do not believe that the data presented in the paper supports some of the conclusions that have been drawn.

RESPONSE 12.25: During our discussions, you indicated that this comment could be disregarded.

RESPONSE 12.26: We have added the main point of your suggestion.

RESPONSE 12.27: We have modified the sentence as per our discussions. The second part of your comment was not used as we had agreed during our discussions.

RESPONSE 12.28: We agree that this paragraph was an oversimplification and it has been deleted. We have included information from a recent Louisiana Attorney General's opinion which details the complicated nature of the subject.

Note: The rest of LDNR's comments are directed at the main report and basin plans. It was the consensus of Task Force agencies that resolution of those comments would be accomplished through work groups made up of Task Force agency representatives.

COMMENTS

DRAFT LOUISIANA COASTAL WETLANDS RESTORATION **PLAN**

MAIN REPORT

GENERAL COMMENTS

D M strongly **suggests** that the individual **basin teams** review the Problems and Solutions sections of the Main Report for consistency with the individual Basin Reports. **Presently** the Problems and Solutions **sections appear** to lack consistency with the **presentations** made within several of the individual **Bash** Reports.

The original draft **report** (April, 1993) contained a **fairly extensive section** on herbivore problems as a major biological factor contributing to wetland **loss.** The present draft (June, 1993) does not address or mention the **herbivore** problem. We strongly **urge** that this section be re-incorporated within the Problems Section.

DETAILED COMMENTS

page 74 Sixth line, delete 'and'.

Last sentence, the **text regarding the development** of a more diversified economy does not relate to the previous text in this paragraph or the previous one.

page 75 Seventeenth line of text, 'alternative' should be 'alternatives'.

page 79 Table **BS-2:** add the abbreviation 'OM Outfall Management' **to the** notes at the bottom.

Under note **1/** after '...Island' add ", nor projects where cost is **not** shown'.

Revise table to reflect groupings of projects by category, **e.g.,** ST, LT, Considered but not included, and listed in numerical sequence **within** each group.

page 103 Eighteenth line, 'extending' should be **"extend".**

page 104 Thirty-third line, **"appendix F"** should be **"Appendix** D".

Thirty-sixth line, Table BA-3 and Figure **BA-4** also include projects considered, but not selected, **as** part of the plan to be implemented.

Line forty includes a **term "influence".** Does that **mean** 'Project Type, **e.g.** BI, FD, HR, **etc.?**

page 105 Cost of Plan **and acreage** at top of the page do not agree with Table **BA-**3.

Critical **Projects** XBA-54, XBA-63, **and** XBA-69 **are** not included on Figure **BA-4.**

pages 106-108 Rearrange Table BA-3 into categories of 'Selected for Implementation', and **"Considered** but not Selected", Group in numerical sequence by Project **Type** under each category.

page 109 The 'FORD LINE' is not discussed in the text of the report. Empire and Venice Diversions are omitted from the Figure.

page 111 Only some of the 'Selected' projects **are** included on this Figure.

MAIN REPORT COMMENTS(Pontchartrain Basin)

Page	Para	Line	Comment
7	----	----	Reference : Figure 2-Comprehensive Restoration Strategy. Revise/expand strategy types to correspond to the project summary indicated on Table PO-3, page 66-69 and Figure PO-2, page61. For example, Pontchartrain projects include barrier island restoration, marsh creation, marsh management, sediment trapping, vegetative planting, sediment diversion, outfall management as well as freshwater diversion, hydrologic restoration and shore protection
66-69	Table PO-3	----	Ref.Table PO-3, Summary of Pontchartrain Basin Projects: The following projects have not been selected as critical/supporting projects: PO-8,9: PPO-1,2b,3,5,6a,6b,8,11,14,16,18,21,22,23,24,25,26,29,30,32,33,34,35,3739,40,41,42,43; XPO- 44,53,54,56a,56b,57. Several of these project lines in Table 8 do not contain any information as to their status. I suggest as a minimum, giving a brief comment on the status of each line item in this summary table.

BASIN (APPENDIX A) REPORT COMMENTS(Pontchartrain Basin)

Page	Para	Line	Comment
33,37, 44,47, 54,62, 68'	-----	-----	Reference Project Maps: Figures 9, 11, 18, 19, 22, 25, and 27 should be improved for clarity and consistency with the quantity and types of features listed in the accompanying project descriptions. Consideration should be given to increasing the scale of the maps thus improving the quality and usefulness of the exhibit.
i,iii, iv,v,i etc.	-----	-----	Insert a page number on every sheet in the report to assist the reader in tracking information listed in the Table of Contents. Also, numbering all pages will eliminate the possibility of missing pages due to binding error.
19 and 20	-----	------	Consider replacing the'word 'Feature' with 'Element' to indicate alternative measures. Also revise all references to 'Feature' if this suggestion is adopted.
17	Alt. C	-----	The discussion of Alternate C attempts to quantify the benefits associated with the Bonnet Carre Diversion plus MRGO Bank Stabilization/Marsh Creation. I suggest giving more information about salinity reductions in this paragraph. What is the estimated salinity reduction ?
94,95 L96	Table 8	-----	Ref. Table 8, Summary of Pontchartrain Basin Projects: The following projects have not been selected as a critical/supporting project: PO-8,9; PPO-1,2B,3,5,6A,6B,8,11,14,15,16,18,21,22,23,24,25,26,29,30,32,33,32,33,34,35,37,39,40,41,42,43; XPO-44,53,54,56A,56B,57. Several of these project lines in Table 8 do not contain any information as to their status. I suggest as a minimum, giving a brief comment on the status of each line item in this summary table.
94,95, 96,97, 98,99	-----	-----	Figures,tables and plates following the bibliography would be easier to find/use if they were placed in an appendix or inserted in the text body.

BASIN (APPENDIX A) REPORT COMMENTS (Pontchartrain Basin)

Page	Para	Line	Comment
18-19	----	last	Name studies which support the position that this project will eliminate "dead zones" of low bottom oxygen.
18-19	last	----	Water quality is an important consideration in this project. Additional discussion addressing the issue of water quality would be desirable. Site studies which support your conclusions.

COMMENTS

DRAFT LOUISIANA COASTAL WETLANDS RESTORATION PLAN

BRETON SOUND BASIN

APPENDIX B

page ii — Under "Supporting projects, long term', organize them to be grouped by two categories: (1) Considered projects but not included in the Comprehensive Restoration Plan, (2) Projects beyond the scope of PL 101-646.

page 1 — Regarding the Bohemia Freshwater Diversion, indicate what entity failed to maintain the existing facility following its construction.

page 3 — Change 'Divert" to 'Diverting' in last sentence of first paragraph.

page 7 — Delete "are" from last sentence on page.

page 8 — Delete 'and' from the fourth sentence, first paragraph, following 'project"

page 9 — Delete 'of" following 'categories' in second line of first sentence under 'OVERVIEW OF BASIN STRATEGY".

page 13 — Organize projects by 'Short Term". 'Long Term", 'Not Included", and 'Beyond Scope of PL-101-646'.

page 16 — Indicate that the basis of the Caernarvon Diversion is a 50 year life. Change "104,00" to "104,000" in next to last line of BS-3A Description. Replace Plate 3 with revised Plate which corresponds with the revised project description.

page 17 — The cost estimate of $1,850,000 does not correspond with economic analysis wst of $2,522,200 used in the CWPRRA II report. Under 'Status". the lead Federal agency (SCS) is undertaking a detailed design study; delete reference to the state.

page 18 — Replace Plate 2 with revised version matching the project description. The basis for the Key Issue assessment should be specified. Under "Status", LDNR has no detailed feasibility study currently in preparation.

page 19 — Replace Plate 4 with revised version matching the project description.

The estimated cost is 5567.459 based on the latest project design summary.
Explain why this project is not independent of the outcome of Project BS-3a.

page 20 — Replace Plate 5 with revised version matching the project description. Project description (BS-6A/B) does not describe the project as reflected in the cost estimate shown on page 21. The project summary calls for one small pump station with 3 pumps and in addition to what is stated, two rock weirs with boat bays, spoil bank gapping, shoreline protection, and plug removals.

page 21 — Under 'Key Issues' (1) delete 'other' from second lie;
(2) What is the basis for the conclusions drawn in the second paragraph?

page 22 — In first sentence show '20-year project life'.

page 24 — Third paragraph, last sentence, change This' to "These".
Last line fourth paragraph, 'in to' should be 'into'.
Last line indicates a project of $55 Million which is beyond the scope of current guidelines for projects to be included in plans for PL 101-646 projects.

page 25 — Under "Key Issues' (PBS-5), explain how a project which is not cost-effective can be critical to the restoration plan when its shear cost magnitude interferes with the completion of other more feasible projects.

page 31 — PBS-11 comment that any amendment to the Caernarvon Diversion authorization was determined to be inappropriate for inclusion in the restoration plan needs to be explained as to who made the determination and the basis for it.

page 32 — Second line, insert "of" between 'study" and 'effects'.
Supporting Research is now underway by whom?
Under 'SUMMARY', third paragraph, change 'constructed' to 'construction', insert 'PBS-5' before '(Fiddler Point Barrier Island)', and change 'created' to "create'. 'restored' to 'restore', and "protected' to 'protect"; and in the next to last line delete 'and".

page 33 — In the last line change "project' to "projects"

Plate 7 — Identify it with the number "7", and indicate the extent of oyster leases involved.

Check out PBS26 & XMR13 References in Key Issue Discussions of PBS4 and PBS7 respectively.

COMMENTS

DRAFT LOUISIANA COASTAL WETLANDS RESTORATION PLAN

MISSISSIPPI RIVER BASIN

MAIN REPORT AND ENVIRONMENTAL IMPACT STATEMENT

APPENDIX C

Appendix C and the Main Report write ups appear to follow each other closely with consistency of content. However there are some cost numbers that do not seem consistent.

Page 45 of Appendix C indicates that estimated cost for Mississippi River Basin projects is $948,082,00, where as page 12 of the Main Report shows the restoration plan for the basin to be only $426,949,000.

The selected plan for the basin in Appendix C is the full scale uncontrolled diversion of the Mississippi River with a cost of $910,000,000. This cost is not included in the summary report cost data on page 12 of the Main Report.

COMMENTS

DRAFT LOUISIANA COASTAL WETLANDS RESTORATION P U N

BARATARIA BASIN

APPENDIX D

page i — Critical projects listed in the Table of Contents include more than $100 Million of unfunded and long term type proposals with additional major projects only in the very basic conceptual stage of development. Calling these critical at the point of having no technical or economic feasibility basis for execution of the project is a bit far-fetched.

Definitions of the terms 'Critical', 'Near Tam', and 'Long 'Term" need to be stated.

Projects BA-4c, BA-6, BA-8, k BA-9 are not included on Table 5, pages 26-28.

page ii — Projects PBA-50. XBA-50, k XBA-51 are not included on Table 5, pages 26-28.

Beginning at project BA-1B, insert the heading "Long Term'.

Projects BA-IB, BA-10, k XBA-49 are not included on Table 5, pages 26-28.

page iii — Figure 5, page 23 includes only near term projects; there needs to be a similar Figure for long term projects.

The page number for Plate No. 1 is not indicated.

page 2 — Revise last sentence of second paragraph to reflect the correct Davis Pond time frame: Construction start late 1994, completion late 2001.

page 5 — Fifth paragraph, Use of the word "cosset" is confusing to the average reader; substitute "it" for the second "breakwater" in the last sentence of this paragraph.

page 19 — Sixth paragraph refers to Table 5 as a list of projects implementing the selected plan. Table 5 in fact contains many more projects than are included in the selected plan and excludes some projects that are included in the selected plan.

Figure 6 is not clear as to the type of projects presented, since more than the type indicated are shown.

In the last line of this paragraph, the phrase 'lid the influence" is not clear. Is that reference to project type?

The costs and benefited wetland acreage sited in the seventh paragraph do not agree with Table 5. Explain variance.

page 20 — Projects cited in the third and eighth paragraphs as the most critical projects do not agree with the main report, page 105.

Project XBA-63 cited in fifth paragraph does not appear on Figure 6.

page 21 — Figure 4 makes reference to a 'FORD LINE' which is never discussed in the text of the basin report. Delineation of the barrier island restoration should be enhanced for ready observation. Figure 4 should agree with projects identified as critical on page 105 of the Main Report as well as those projects shown as critical in the Table of Contents, page i of this basin report. All critical strategies are identified.

page 22 — Figure 5 makes reference to a 'FORD LINE' which is never discussed in the text of the basin report. This figure includes some long term strategies as well as short term strategies. A supplemental Figure showing only long term strategies would be helpful.

page 25 — The fourth paragraph disagrees with page 105 of the Main Report.

The fifth paragraph indicates two projects as the critical one for the freshwater introduction component which are not identified as critical on page 105 of the Main Report.

page 26 — Projects XBA-lal, XBA-lbl, XBA-lcl, XBA-ldl, XBA-lel, and PBA-45 shown in Table 5 are not Listed anywhere in the Table of Contents.

page 27 — Projects XBA-68, XBA-70, and BA-2 shown on Table 5 are not listed anywhere in the Table of Contents. Elements of BA-la and BA-lb are combined and incorporated in the BA-1 project. Projects PBA-62a and PBA-62b are identified in the Table of Contents under one project number PBA-62.

page 28 — Projects BA-16 and BA-19 shown on Table 5 are not listed anywhere in the Table of Contents. Projects BA-17a and BA 17b are identified in the Table of Contents under one project number BA-17.

Add [ ] symbol to the chart to indicate their meaning as they apply to data in the Table.

page 29 The title of this Figure does not describe what is presented. There are 24 projects included in the Table of Contents which are not plotted on this Figure; there are 3 projects on the Figure which are not in the Table of Contents; there are 8 projects that are not on the map and are not in the Table of Contents but are included on Table 5; there are 8 projects on the map which are not in the Table of Contents and not on Table 5; and only one of the Research and Development proposals is on the map but 5 are indicated in the Table of Contents and shown in Table 5.

page 31 Critical Projects list in components discussion on pages 19, 20, and 25, do not coincide with the projects in thii text.

In first sentence, delete ",' after the word 'applied'.

Under BA-I, P & O, project XBA-57 is not in the Table of Contents or shown on Table 5; Under Description, "Figure BA-I' should be 'Figure 1"; Estimated cost is $70,000,000 and is funded by separate legislation; Under Benefits, explain why the WVA team has not assessed the benefits of the project; Under Key Issues, explain why no CWPPRA funding is an issue and clarify the significance of "Project will cause southerly movement of some oyster leases into historical oyster producing aeas'.

page 32 In the first paragraph, state how the project is funded, instead of how it is not funded. Change the project completeion date from '1997' to '2001'.

Reference is made to projects PBA-2 and PBA 53 in the sixth paragraph. Neither of these projects is included in The Table of Contents or Table 5.

The cost per benefited acre is too high and the total cost of the refurbishment and breakwaters is beyond the scope of PL 101-646.

page 33 The Table entitled 'Coastal Wetlands Conservation and Restoration Plan' is not included in the report as indicated in the first paragraph.

Under Key Issues, add ",' before and after the phrase 'although significantly". In the next paragraph project PBA-2 is not described

anywhere, nor included in the Table of Contents, nor included on Table 5.

Under Status, designation of a project, which is economically unfeasible, as 'critical, near term" does not compatible.

page 34 In the third paragraph reference is made to project XBA-57 which is not included in the report.

A project estimated to cost more than $67 Million will require separate funding.

Under Key Issues, clarify what is meant by 'Project will cause southerly movement of some oyster leases and brown shrimp harvesting into historical production areas'.

page 35 Under P & O, Capitalize first word of second sentence. Change first sentence of second paragraph to read 'Freshwater currently being introduced via the West Pointe-a-la-Hache Siphon will be managed under project BA-4c.

Under Description, last paragraph, indicate where to fmd referenced plan.

Under Benefits, clarify how this project adds to the management plan of BA-4c or better yet have this project combined with BA-4c.

page 36 The Table referenced in the second paragraph is not included in the report-

Under P & O, in the second paragraph, reference is made to project XBA-46 which is nowhere described nor included in the Table of Contents or on Table 5.

Explain how a downstream Myrtle Grove Sediment Diversion would enhance the Tidal Drag concept.

page 37 The estimated cost of almost $17 Million would require separate funding above the PL 101-646 levels.

The Table referred to in the last paragraph is not included in the report.

page 38 Under Key Issues, the second paragraph begins with a question (add "?").

Under Status, a project which requires separate funding is not likely to be accomplished "near term'.

Under P & 0 , add 'to' after 'due', second sentence. Change 'sits' to Sites' in the fourth sentence.

In the last line , reference is made to project BA-16 which is not described anywhere, nor is it in the Table of Contents or included on Table 5.

page 39 In the first, third fourth, and sixth paragraphs, projects PBA-65a and PBA-65b art described as projects XBA-65a and XBA-65b on Table 5, and XBA 65 in the Table of Contents.

Under Key Issues, reference is made to project BA-16, which is not described in the report nor included in the Table of Contents.

Under Status, three projects totaling $33 Million are not likely to be accomplished 'near term', because special funding would be required above and beyond PL 101-646.

Under XBA-67, Description and Estimated Costs, and Benefits (page 40) reference to the four project numbers without a page reference requires looking back at the Table of Contents to find where these projects art described.

page 40 Under Key Issues, the last l i e of second paragraph should end with a "?".

Under Status, if this is a 'supporting, near term " project, then it should follow that heading on page 41. However, the Table of Contents and the Main Report classifies this project as 'Critical'.

Under P & O, first paragraph has a statistical expression of island disappearance in "1996, give or take 23 years". This is not a rational statement given the island is still present.

Under Estimated Costs, and Benefits, refer to project costs and acreage benefited on Table 5 or state them here.

page 41 Under Key Issues, state the Key Issues instead of referring to the Key Issue sections of each project.

Add ",' before and after 'although significantly'.

Under NEAR TERM SUPPORTING PROJECTS, the phrases "generally support', 'Most of them', and 'Many of them' do not seem appropriate because they all should support, bolster, be described, and be enhanced or enhance each other. If they don't, they should not be part of the plan.

Under P & 0 , change the last word from "tested" to 'used'.

Under Location, delete "proposed" since the facilities art in place.

Sited benefited acres does not agree with WVA outcome of 1637 acres.

The latest Estimated Cost is $1,428,963 with cost per benefited acre of $873.

page 42 Project BA-4c is not listed on Table 5.

Under Location, change "deterioration" to deteriorating', line 3.

Under Description, reference to the original siphon construction and its enlargement is not necessary since this project deals only with outfall management.

The latest Estimated Cost is $585,084 with cost per benefited acre of $215.

page 43 Project BA-6 is not on Table 5.

The Estimated Costs shown do not include any land rights.

page 44 Project BA-8 is not included on Table 5.

The latest Estimated Cost is $376,437 with cost per benefited acre of $5,456.

Project BA-9 is not shown on Table 5.

page 45 Project BA-9 cost estimate should be $844,444 with cost per benefited acre of $12,063.

In the last sentence of the Description of Project BA-14, 'David" should be "Davis'. The estimated cost for this project is $1,111,969, with cost per benefited acre of $1,677.

page 46 Under P & O of Project BA-15, the Project BA-5b referred to in the last sentence is neither described nor shown in the Table of Contents, and it is not in Table 5.

The estimated cost is currently $1,260,739 with cost per benefited acre of $1,103.

page 47 Under project Description, reference is made in the last sentence to Project XBA-1a1 which is not shown in the Table of Contents.

Estimated costs of $21 Million and cost per benefited acre of $148,000 are not considered economically feasible and are beyond the scope of PL 101-646. This would require separate funding and thus is not compatible with the designation of 'supporting, near term ' under Status on page 48.

Under Benefits, third line, "observe" should be "observed"

page 48 Under Key Issues, the fourth Paragraph text is duplicated in the previous paragraph.

In the fifth paragraph, reference is made to Project PBA-2 which is not described in the report nor listed in the Table of Contents, and it is not included in Table 5.

Under Status, this project is too costly to be classed as a near term project.

Under P & O, the statistical expression of projected disappearance of the island should be reworked to give a more current projection. The range of time is 1978 to 2034.

page 49 Under Description, fourth line, add 'ft.' after 500; sixth line insert 'ac.' after "83" and "ft." after "800"; delete ""ac" after ")".

Under Benefits, third line, add "ft." after "4,500"; fourth line, "extending..project longevity..unpredictably" is tantamount to saying the project may not be effective. Give some reasonable basis for suggesting project life will be extended.

Under Key Issues, the first line should end with a question mark.

page 50 In first line, insert "," before and after "although significantly'.

In the second paragraph, reference to Project PBA-2 is made but the project is not described in the report, shown in the Table of Contents or listed on Table 5.

Under Description, sixth line, add "ac." after '165' and "ft." after "800", and delete "ac" after ")".

page 51 Under Estimated Costs, the cost per benefited acre is too costly for the first 5-year program under P L 101-646, thus designating it a 'near term project" under the Status section is inconsistent.

Under Benefits, add "ft." after "9,000". Provide basis of "unpredictability" of island longevity. Describe the nature of the 'additional estimations' that are being developed.

Under Key Issues, the first line should end in a "?"; In the fourth paragraph, reference is made to Project PBA-2 which is not described in the report, included in the Table of Contents, nor listed on Table 5.

page 52 Under Estimated Costs, this Project is not economically feasible under the current P L 101-646 authorizations, thus a designation of 'near term project' under Status (page 53) is inappropriate.

Under Benefits. add 'ft.' after '74.520'.

page 53 and Under Key Issues, the first line should end in a "?"; insert "," before after 'although significantly", fourth line; reference is again made to Project PBA-2 which is not described in the report, listed in the Table of Contents nor included on Table 5.

page 54 In first line add "ft." after "500"; in third line add "ac." after "124", "ft." after '800" and delete "ac" after ")".

Under Key Issues, Project PBA-2 is again referenced which is not described in the report, listed in the Table of Contents, nor included on Table 5.

Under Status, at the current cost per benefited acre, the likelihood of this project being a near term one is minimal.

page 55 Cost per benefited acre of both Projects PBA-I2 and PBA-16 is too high to class either project as 'near term'.

page 56 Under Benefits, last sentence, the table 'Coastal Wetlands Conservation and Restoration Plan' is not included in the report.

page 57 Under Estimated Costs. the $2,770,660 figure does not agree with the 10130192 report to Congress of $3,012,800 or with the Executive Summary figure of $4,303,000.

page 58 In the second paragraph, the table 'Coastal Wetlands Conservation and Restoration Plan' is not included in the report.

The total cost and cost per benefited acre of Project PBA-38 is too high to class it as a near term project. It is beyond the scope of current P L 101-646 authorization.

page 59 The estimated unit costs for Project PBA-39 are not consistent with those used for estimating PBA-39, therefore the likelihood of it being a near term project is minimal.

page 60 Project PBA-50 is not included on Table 5. At a cost per benefited acre of $68,790, there is no need to demonstrate the technique multiple times. The statement that a duplicate project is already included in the 2nd Priority List for Breton Sound is not correct. Project PBA -13 was considered but was not selected. The status as a near term project is questionable.

page 61 Under Description, explain who will determine criteria and select 'ideal marsh enhancement materials'.

The Estimate Cost should be $13,628,677 ($49,201 x 277). This project is beyond the current scope of P L 101-646 funding, thence not a near term project.

page 62 Project XBA-51 is not included in Table 5.

This project is not economically feasible. When added to Project XBA-IB, C, or D, the total cost makes it even further beyond the scope of funding under P L 101-646, thus it is not a near term project.

page 63 Under Description, second paragraph , the phrase 'or 1,000,000" is a dangling expression which has no tie to earlier or subsequent text.

Under Key Issues, funding extensive research under P L 101-646 was not the intent of the legislation.

page 64 In the second paragraph, concern for the aesthetic impact is expressed. The appearance would be dependent upon the severity of storm for which they are designed to withstand.

In the third paragraph, a choice of breakwater construction schedules is suggested, but no schedules arc indicated.

Under Status, classification of the project as a near term one without any cost estimates is unreasonable. Construction could extend over a very long period of time.

Under P & O, last paragraph, the text is confusing and of awkward structure.

page 65 Under Estimated Costs, identify the construction method intended to be accomplished with this funding. The cost per benefited acre indicates 480 acres would be involved which does not agree with the "126" acres shown under Benefits. In any event, the cost figum used seem low for the type of project s being suggested.

Under Status, designating this project as a near term one is not appropriate if segmented breakwaters an used, because of the magnitude of the funding required.

page 66 k 67 Reference to Table 12 under Estimated Costs should be 'Table 5'. Under Key Issues at bottom of page 67, 'access' should be 'Access'.

page 68 Under Estimated Costs, reference should be made to Table 5 instead of Table 12. Better yet, showing the figum would be more consistent with the format of the rest of the report. This project is too costly to be classed as a near term project.

Under Description, and Benefits, reference is made to Project PBA-35, which includes PBA-60 within it. The armored earthen plug feature, however, is not included in the Description of Project PBA-35.

page 69 References to Table 12 under Estimated Costs for both projects should be Table 5. Show actual cost figum to be consistent with the rest of the report format. Both of these projects arc too costly to be included as near term projects and arc outside the current scope of P L 101-646 funding.

Project PBA-62, is shown elsewhere in the report as two projects, PBA 62-A and PBA-62B.

Under P & O, referring the reader to another project description, include the page where that discussion can be found (i.e., "See XBA-65, page 38).

page 70 Under Key Issues, Project **BA-16** is not described in the report nor included in the Table of Contents, nor **shown on** Table 5.

Under P & O, fourth line, **make** 'site' 'sites°, and add "ac" after "1,165'; in seventh line add **"ac"** after '37.8'

page 71 Under P & **O,** fourth lie, add 'ac' after 1,165, change 'sits' to 'sites'; in seventh line add **"ac" after** '37.8'.

Under Description, reference is made to 'marsh buggy'. **There** needs to be a **transition** from marsh buggies to a **newer** class of less damaging vehicles; in fifth lie, **"600,00"** should be **"600,000".**

The mining locations withii Bayous **Perot** and **Rigolettes** would be wry critical and an important **consideration. Describe screens** which will be used to retain sediment.

Under Estimated Costs, 'Table 12' should be **"Table** 5'.

page 72 Under Key Issues, sediment borrow sites **as** far away from the shoreline **as** possible is not the only consideration. Recognition of conditions to prevent deep channeling **as** a result of mining is very critical.

Under Description, **describe** 'Bight'.

The Cost per Benefited Acre is **too** high to warrant classification of this project **as** near **term.**

page 73 Under P & O **,** third line, **"172,00"** should be **"172,000".**

Under Location, second **line,** add ", page 31' after **'See** BA-1'.

Under Description, eighth line, change 'maintain' to 'sustain'; third paragraph, Project **BA-10** is not included on Table 5, and include page reference.

The estimated costs reference should be to Table 5 instead of Table 12. The cost for this project, **however,** is not shown on Table 5.

Under Benefits, following last word on the page, change ". " to ":".

page 74 Under Key Issues, the feasibility of this project is questionable to the extent that **its** inclusion **as** a project becomes serious considering the extent of **unknowns (i.e. appropriateness** of **delta building). Project** BA-10 is not included on Table 5.

Under Status, near term designation is not compatible with the uncertainties of the nature of the **project.**

Under P & O, third line, clarify 'estimated limited **ac wetland".**

Under Description. second line. Project **XBA-48a** is not described in **the** report. There is no need to re demonstrate the **same** principle in Project **XBA-67b;** in line 5, change 'maintain' to 'sustain'.

page 75 Under Estimated Costs, Table 12 should be Table 5; the cost is not shown in Table 5.

Under Key Issues, the feasibility of **this** project is **questionable** to the same extent **as** Project **XBA-67a;** lines 5 and **11** should end with "?". A near **term** designation is not compatible with the vagueness of the project.

Under P & O, last lie, clarify 'limited ac wetland'.

page 76 Under Description, third line, Project **XBA-48a** does not describe deep river siphons. There is no need to do multiple demonstration projects showing the same principle; in **line** 6, change 'maintain' to 'sustain'; last line, explain why the siphon may be removed.

Lack of costs, vagueness and uncertainty of outcomes and **suitability** of other solutions does not support the classification of this project **as** near **term.** This would **be** a long term project at best.

page 77 Under P **&** O, third line, **"172,00"** should be **"172,000".**

Under Description, first and second paragraph are not compatible. **Discussion** of a 30' cutter head is a moot point when the project calls for 16" or 24" heads.

page 78 In the eighth line, change 'maintain* to 'sustain'; in **fifteenth** line, add **",page** 81' **reference** following **'(See BA-10)".**

Under Estimated Costs, Reference should be made to Table 5 instead of Table 12. State the cost of **$4,579,000** here. **The** cost per benefited acre is $676.

Under Benefits, second paragraph, the table 'Coastal Wetlands Conservation and Restoration Plan' is not included in the document.

page 79 Under Key Issues, third line, '1997' should be "2001"; the second paragraph should end in a "?"; the third paragraph second line should end with a "?"; the fourth paragraph, second line, states 'Once ...management plans ...are filled...". Plans cannot be filled.

Under Status, are other enrichment alternatives possible?.

Under Long Term Supporting Projects, third paragraph, XBA-48 reference should be set up in the same presentation format or give page reference to quickly find the description.

Under P & O and Description, change 'siphon' to 'gated structure'.

Project BA-1B is included in Project BA-1, therefore there is no need to include it in this report.

page 80 The need and feasibility of Projects BA-3b and BA-4b are undetermined. Therefore including them as possible projects is pure conjecture.

page 81 For BA-10 Title. include redirection of flows into the Salvador WMA as part of the title.

page 82 Preliminary cost estimate is $6,848,551; Benefited acres of 1,888; Cost per benefited acre of $3,627.

Projects BA-11 & BA-12 are combined; Total cost is $5,669,500; Benefited acres of 1,361; Cod per benefited acre of $4,166.

page 83 In first line, delete the word 'not'.

page 84 Preliminary cost estimate is $8,396,918; Benefited acres of 775; Cost per benefited acre of $10,835.

Project BA-17 consists of two project areas, Happy Jack and Homeplace. The preliminary cost estimate for the Happy Jack project is $2,014,341; Benefited acres of 152; Cost per benefited acre of $13,502. The need for the Homeplace project is minimal, at best. Note under Key Issues for this project that long term benefits may offset the impacts on the shellfish industries.

page 85-90 Projects listed are based on so minimal information that perhaps a separate 'Potential Future Project Development List' would be more appropriate than the format presented.

page 85 PBA-I1 appears to be an innovative technology demonstration type project. No commitments arc given as to the time frame for greater detail development.

page 86 PBA-21, under P & O, describe how the Algiers Locks management would change.

Under Benefits, the table 'Coastal Wetlands Conservation and Restoration Plan' is not included in the report.

Under Key Issues, the first sentence is duplication of text already mentioned in the P & O section.

page 91 Under Supporting Research, Project RBA-1, last word of text should be 'passes' instead of 'as'.

page 92 Under Project RBA-3, first paragraph, first line, specify who the large investors are who are doing predictive modeling; second paragraph, specify which diversion implementation plan is being referenced; fourth paragraph, second line, change 'developed' to 'utilized'; fifth paragraph, second line, change "fothe" to 'for the'.

page 93 Project RBA-4, paragraph 2, line 5, delete 'be" following 'might"; third paragraph , Project PBA-33 is not described in the report, listed in the Table of Contents, nor included on Table 5; Project PBA-45 is not described in the report nor listed in the Table of Contents; Projects BA-4c BA-10 are not included on Table 5.

Project RBA-5, third paragraph, last sentence suggests that this is a new approach to project development. In fact this procedure has been ongoing for years.

page 95-97 Only two of the references cited arc specifically mentioned in the text of the report. Cite the others in the text or remove the references.

Comments on the Terrebonne Basin Plan
August 17, 1993

There following are descrepencies and omissions from the various project lists.

Map Page 25 - The following projects are listed twice

XTE-51 and XTE-52

The following projects are listed on the table on pages 26-28 but do not appear on the map on page 25.

XTE-30	PTE-3	TE-17
XTE-33	PTE-6	TE-18
XTE-36	PTE-7	TE-20
XTE-37	PTE-12	TE-21
XTE-44	PTE-13	
XTE-47	PTE-21	
XTE-48		
XTE-53		
XTE-57		

The following projects are listed on the map on page 25 but do not appear on the map on pages 26-28.

XTE-14	PTE-72
	PTE-73
	PTE-59
	PTE-36
	PTE-71

The following projects are listed in the text but do not appear on the map on page 25.

XTE-47/48	PTE-3
XTE-57	PTE-21
XTE-44	PTE-13

The following projects are listed on the map on page5 but do not appear in the text.

XTE-46	PTE-72	TE-14
XTE-26b	PTE-73	TE-1
XTE-14	PTE-4	TE-2
	PTE-11	TE-3
	PTE-9	TE-19
	PTE-59	TE-4
	PTE-36	TE-13
	PTE-23	
	PTE-26a	
	PTE-71	

Page	Para	Line	Comment
43	2		PTE-15 Another key issue in planning would be to ask the question, "Is is possible to hold these islands in place without spending tens of millions over the project life?" Further, we know that the back barrier marshes and shallow bays provide the platform for natural island transgression. So why are we spending millions dredging out this platform to reinforce the islands physical integrity. This is a classic example of "robbing Peter to pay Paul" and will, in the long run, wind up costing even more money as the islands continue to transgress into the hole that we are digging "to save them"? Lastly, as we learned from hurricane Andrew, it is certain that just one hurricane can wipe out entirely any dunes that we may construct on the islands.
44& 46	last		XTE-45 & XTE-67 Same comment as above
62	1	1	Correct typo on "reduce"

COMMENTS

DRAFT LOUISIANA COASTAL WETLANDS RESTORATION PLAN

ATCHAFALAYA BASIN

MAIN REPORT AND ENVIRONMENTAL IMPACT STATEMENT

page 125 In table AT-1, under Projected Loss/50 Years, (acres), the number 23,410 should have a dash "-" in front of it to denote that this is a negative number.

page 127 In the section "Selected Plan" Alternative B is not discussed as an alternative that was not selected.

page 129 It is difficult to match up the verbiage in the "Results" section of the report and the tabulation of the projects in Table AT-3 on page 130.

page 129 In the section "Results", implementation costs of $400,000,000 are listed as possible for long term supporting projects. This possible cost may not be included in the total cost of the Restoration Plan.

page 130 Listing project XAT-12 as a demo project for $11,350,000 makes this a very expensive demonstration project.

APPENDIX F

page 21 XAT-12, DELTA MANAGEMENT is listed as a critical project. Delta Management is not a construction project for the CWPPRA program, it is more of a procedural or operational concept which may be good for the long term for the basin. However, funding for this activity should be outside of the CWPPRA program.

COMMENTS

DRAFT LOUISIANA COASTAL WETLANDS RESTORATION PLAN

TECHE/VERMILION BASIN

MAIN REPORT AND ENVIRONMENTAL IMPACT STATEMENT

page 140 TV-3 and PTV-21 are not shown on map but are shown in the Table TV-2 on page 141. PTV-16 and PTV-16 AND XTV-21 are shown on the map but not shown on the Table TV-2 on page 141.

page 141 The cost of TV-10 should be $1,206,000 instead of $530,000. This would increase the cost of the basin from $25,524,000 to $26,200,000.

APPENDIX G

page 12 Same comment as for page 140 above.

page 13 Same comment as for page 141 above.

MAIN REPORT COMMENTS(Calcasieu-Sabine Basin)

Page	Para	Line	Comment
7	----	----	Reference : Figure 2-Comprehensive Restoration Strategy. Revise/expand strategy types to correspond to the project summary indicated on Table CS-3, page 167-70 and Figure CS-5, page165. For example, Calcasieu-Sabine projects include marsh creation, freshwater diversion, vegetative plantings, marsh management and terracing as well as shoreline protection and hydrologic restoration.
166	last para.	-----	Reference: Selected Plan Project List.Total selected plan cost and benefitted acres ($77,672,000 and 86,000 acres) differ from the data presented in Table 1 Restoration Plan Summary, page 12. Should this information be consistent?
162, 163	Fig. CS-3 & cs-4	-----	Ref.: Figures CS-3 S CS-4. Consider revising these figures to indicate project types by using symbols in the deliniated interior and exterior control zones. These figures should compliment the selected project types listed in Table CS-3., Summary of Calcasieu- Sabine Basin Projects, pages 167-170.

BASIN (APPENDIX I) REPORT COMMENTS(Calcasieu-Sabine Basin)

Page	Para	Line	Comment
15.16	Fig. 4,5	----	Ref.: Figures 4&5. Consider revising these figures to indicate project types by using symbols in the deliniated interior and exterior control zones. These figures should compliment the selected project types listed in Table 4, Summary of Calcasieu- Sabine Basin Projects, pages 20-23.

MAIN REPORT COMMENTS(Mermemtau Basin)

Page	Para	Line	Comment
7	----	----	Reference : Figure 2-Comprehensive Restoration Strategy. Revise/expand strategy types to correspond to the project summary indicated on Table ME-3, page 152-3 and Figure ME-3, page149. For example, Mermentau projects include marsh creation, freshwater diversion, vegetative plantings, marsh management, terracing and shoreline protection as well as hydrologic restoration.
148	Table ME-2	-----	Reference: Table ME-2 Project Costs And Benefits.Total project costs and benefitted acres in the amounts of $62,700,000 and 17,596 acres respectively differ from the data presented in Table 1 Restoration Plan Summary, page 12. Should this information be consistent?
152-3	Table ME-3	-----	Table ME-3 Summary of Mermentau Basin Projects does not contain the complete list of critical/supporting projects indicated on pages 150-51. For example, XME-19 through XME-31 are not listed in Table ME-3. Should the two listings be consistent ?
147	Fig ME-2	----	Constance Bayou is a significant saltwater source and should be labeled.
149	Fig ME-3	---	I recommend that the author make a comprehensive check of Fig. ME-3, Table ME-3 and the critical/supporting project lists. There appears to be inconsistencies in the projects listed in each of these areas. However, if these inconsistencies are intended indicate so in a note near the exhibit.

BASIN (APPENDIX H) REPORT COMMENTS(Mermemtau Basin)

Page	Para	Line	Comment
18-19	Table 4	-----	Table 4, Summary of Mermentau Basin Projects does not contain the complete list of critical/supporting projects indicated on pages 17, 21 & 22. For example, XME-19 through XME-31 are not listed in Table 4. Should the two listings be consistent ?
2	Fig 1	----	Locks and water control structures such as Calcasieu Lock, catfish Point structure, Freshwater Bayou Lock and others are critical features yet they are difficult to see. I suqqest improving the graphics to make these elements easy to identify.
6	fig 2	----	The Calcasieu ship channel should be marked as a saltwater source also.
6and 15	Figs. 2&4	----	Label all important saltwater entry sources such as Constance Bayou/Lake systems.
20	Fig 5	-----	I recommend that the author make a comprehensive check of Fig 5, Table 4 and the critical/supporting project lists. There appears to be inconsistencies in the projects listed in each of these areas. If these inconsistencies are intended indicate so in a note near the exhibit.

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P. O. Box 94245
Baton Rouge, Louisiana 70804-9245

September 7, 1993

EDWIN W. EDWARDS
GOVERNOR

JUDE W. P. PATIN
SECRETARY

Mr. Richard E. Boe,
U.S. Army Corps of Engineer
CELMN-PD-RS
Post Office Box 60267
New Orleans, LA 70160-0267

Dear Mr. Boe:

Thank you for the opportunity to comment on the Draft Louisiana Coastal Wetlands Restoration Plan, including the Main Report and Environmental Impact Statement, prepared in accordance with the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA).

This Department firmly supports this comprehensive approach to restoring and preserving Louisiana's valuable coastal wetlands, and feel all of the proposed projects are worthwhile. In concept, we agree with the programmatic approach to addressing environmental impacts associated with the Coastal Wetlands Restoration Plan, recognizing that it is general in nature and does not document the specific effects of each of the various proposed projects. We understand that additional detailed documentation will be provided for each project prior to its construction. 13.1

We note a number of the proposed projects may have some impact in areas of concern to this Department, i.e., transportation infrastructure, navigation, flood control, and drainage. We, therefore, will reserve our comments until such time as more site specific data is available for each individual project.

If the Department can be of further assistance, please feel free to contact me, or Mr. Curtis Patterson, (504) 379-1294.

Sincerely,

Dennis D. White

Chief Engineer

DDW/EJP,Jr/db

cc: Curtis Patterson
Al Dunn
Vince Pizzolato

AN EQUAL OPPORTUNITY EMPLOYER
A DRUG FREE WORKPLACE

RESPONSE 13.1: Comment acknowledged.

State of Louisiana

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

Edwin W. Edwards
Governor

August 30, 1993

Colonel Michael Diffley
District Engineer
U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Diffley,

The following are comments of the Department of Wildlife and Fisheries on the "Louisiana Coastal Wetlands Restoration Plan* that was prepared by the Louisiana Coastal Wetlands Conservation and Restoration Task Force.

The Louisiana Coastal Wetlands Conservation and Restoration Task Force is to be commended for the monumental effort that has been put forth to develop the "Louisiana Coastal Wetlands Restoration Plan". The Department supports this effort and the broad concepts contained in the plan although the Department reserves the right to comment on the individual projects separately.

14.1 The problems section in the main report concentrates on geologic problems, i. e., the leveeing of the Mississippi River that has contributed to sediment deprivation and subsidence, the dredging of navigation channels that has altered hydrologic flow patterns and contributed to saltwater intrusion, global sea level rise, etc. However, there is no mention of the major biological cause of wetlands loss and that is herbivory. The loss of vegetated wetlands from the activities of nutria and muskrats is a major problem in many of the basins across coastal Louisiana. A section on herbivory that was developed by the Departments of Wildlife and Fisheries and Natural Resources was contained in the first draft of the main report. A section on herbivory should be placed in the problems section of the main report and in the basin reports where appropriate. The Department's staff is available to work with the Task Force and/or the Corps to develop this material.

RESPONSE 14.1: A discussion on herbivory has been added to the Problems section of the Main Report (page 31). In addition, several basin reports acknowledge the herbivory problem.

14.2 The maintenance of the barrier islands is an essential component in coastal restoration. The continued deterioration of the barrier islands will, as some of the recent modeling has indicated, increase the tidal prisms in the bays, thus increasing saltwater intrusion, erosion, and wetland loss. The continued deterioration of the barrier islands will also reduce the effectiveness of coastal restoration projects that are initiated in the upper portion of the basins. A separate comprehensive barrier island initiative .to restore the barrier island chain between the Mississippi and Atchafalaya Rivers should begin immediately.

14.3 A major diversion of the Mississippi River into Breton Sound and the abandonment of the existing delta would have significant negative impacts on the fish and wildlife resources throughout a large portion of coastal Louisiana, not to say what it would do to the lives of the people in that area. Additionally, this project could destroy the Department's 66,000 acre Pass a Loutre Wildlife Management Area which provides wintering habitat for thousands of waterfowl and other migrating birds.

14.4 There are areas in coastal Louisiana where freshwater and sediment resources are not readily available. In these areas we recognize the value of marsh management and hydrologic restoration as wetlands restoration tools. These activities may have impacts to some fishery resources and we recommend that continued research and monitoring be carried out to further identify these impacts and ways to minimize them. Additionally, the impacts of major navigation channels, i. e., the Houma Navigation Channel, the Calcasieu Ship Channel, the Mississippi River Gulf Outlet, etc. and their contribution to salt water intrusion must be further identified in the problem section of the report.

14.5 One issue that has been left out of the solutions section of the report is the rate at which these coastal restoration activities will cause change in the distribution of fish and wildlife resources and, in some instances, relocation of people in the coastal zone. The rate of change will have a major effect on how the public perceives the benefits of any particular project. One way to lessen the sociological impacts of coastal restoration activities is to preform the restoration activities at the same rate at which coastal deterioration took place. Atimetable should be included as part of the plan. A conflict resolution subcommittee within the Task Force may be an appropriate approach to developing a plan on this issue.

14.6 The Department of Wildlife and Fisheries is the agency of state government charged with the responsibility of protecting, conserving, and replenishing the renewable natural resources of the state, including all aquatic life. Additionally, the Department owns and/or manages approximately 500,000 acres of coastal wetlands

RESPONSE 14.2: Restoration of existing barrier islands is a key strategy of the Restoration Plan in both the Terrebonne and Barataria Basins. Several critical projects in these basins involve barrier island restoration. In the Pontchartrain and Breton Sound Basins, artificial near-shore barrier islands are part of the long-term strategy.

RESPONSE 14.3: The short-term damage to fishery resources and wildlife refuges that would be effected by a large-scale sediment diversion into Breton Sound Basin is acknowledged in both the Breton Sound and Mississippi Delta Basin plans and the EIS. At the same time it is recognized that such a diversion would create large areas of marsh.

RESPONSE 14.4: All types of projects will be monitored to determine their contribution to wetlands restoration and their degree of impacts. The impacts of major navigation channels on wetland loss are recognized in both the Main Report and in each basin plan where such a channel exists.

RESPONSE 14.5: This is a good idea but the Restoration Plan has not yet evolved enough to develop such a timetable. We will consider preparing such a timetable during future revisions in the plan.

and has been actively managing wetland habitats for almost 100 years. As such, the Department recognizes the vital role habitat plays in fish and wildlife production. The Department has, to this point, been left out of the coastal restoration planning process. coastal restoration in Louisiana will have significant impacts (both beneficial and adverse) on the fish and wildlife resources of the state that we are legislatively mandated to manage. The benefits to these resources are used as an integral part of the benefit-cost analysis of the these restoration activities. The Department of Wildlife and Fisheries must be brought into the coastal restoration process in a formal capacity.

14.6 Cont.

We appreciate the opportunity to comment on the Louisiana Coastal Wetlands Restoration Plan.

Sincerely

John Olivier
Secretary

cc: Dr. Len Bahr
Dr. Jim Stone
W. S. "Corky" Perret
Lee Caubarreaux
John Roussel
Phil Bowman
Division Chiefs

RESPONSE 14.6: The Governor's Office of Coastal Activities is the official State representation on the Task Force. We suggest that you contact them to insure future close coordination between your agency and the CWPPRA Task Force.

LAFOURCHE PARISH COUNCIL

STEVEN D. WILSON, PRESIDENT

"THROUGH COMMUNICATIONS ALL THINGS ARE POSSIBLE"

COASTAL ZONE MANAGEMENT

August 20, 1993

Mr. Richard Boe
EIS Coordinator
CELMN-PD-RS
U.S. Army Engineer District, New Orleans
Post Office Box 60267
New Orleans, Louisiana 70160-0267

R E COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT

Dear Mr. Boe:

15.1 On behalf of Lafourche Pariah Council Coastal Management Advisory Committee, I would like to take this opportunity to express our opinions regarding the Coastal Wetlands Planning, Protection, and Restoration Act. As I have stated at the Barataria-Terrebonne Public Hearing at the C.O.E., we support the plan and feel it is long overdue. In Lafourche Parish, there were no projects on the critical list in the Barataria Basin and there were two projects in the Terrebonne Basin. One of the projects in the Terrebonne Basin calla for the reatoration of East Timbalier Island. We feel restoration of the barrier islands is a priority that is needed to maintain the integrity of marsh and continue as a front line of defense from hurricanes. The project proposed, (XTE 67). calls for the reatoration of the washouts caused by Hurricane Andrew at a coat of approximately 1.6 million dollars.

15.2 The Committee also realizes the need for public education and support of the plan, the need for large projects such as sediment diversions, and most importantly a streamlined approach to implementing projects. Bare in Lafourche Parish we have been working on the federally funded project "GIWW TO CLOVELLY s , (BA-2) for the s t two years. we have encountered problems with developing the landrights agreements; however, we feel that for future projects this agreement should be developed by an agency and acquired by the same agency.

We appreciate this opportunity to comment and look forward to helping implement this Plan in a timely manner.

Sincerely,

LAFOURCHE PARISH COUNCIL

Roy P. Francis

Roy P. Francis
CZM Administrator

amt

xc: Mr. Len Bahr, Office of the Governor
Mr. Phil Pittman, DNR
Mr. Steven D. Wilson, Parish President

101 WEST 112TH ST. • CUT OFF, LA 70345 • 632-4666 • FAX 632-8653

MARY C. FLOWERS, DIST. 1
ROLAND J. SOIGNET, DIST. 2
JERRY JONES, DIST 3
ROBERT P. NAQUIN, DIST. 4
ERNEST BOUDREAUX, DIST. 5
ROBERT C. BENOIT, DIST. 6
RAY ZERINGUE, DIST 7
RAPHAEL CHAUVIN, DIST. 8
GERALD J. BREAUX, DIST 9
LOUIS A. BREAUX, DIST. 10
ANDREW JOHNSON, DIST. 11
KENT BOUVIER, DIST. 12
NARCISSE J. MAYET, JR., DIST. 13
ROYCE J. DOUCET, DIST. 14
DANIEL LORRAINE, DIST. 15

RESPONSE 15.1: We acknowledge your support for barrier island restoration. The Terrebonne, Barataria, Breton Sound, and Pontchartrain Basin plans all recognize the role of barrier islands in protecting wetlands. These basin plans select strategies that restore barrier islands.

RESPONSE 15.2: The Task Force has established a work group charged with streamlining the project implementation process. The lead agency on each project is responsible for acquiring any land rights.

SAVE OUR LAKE

LAKE PONTCHARTRAIN BASIN FOUNDATION

August 30, 1993

Hessrs. Stanley Green and Bruce Baird
CELMN-PD
P.O.Box 60267
New Orleans, La. 70160

Dear Stan and Bruce:

The Lake Pontchartrain Basin Foundation strongly supports coastal restoration. The Comprehensive Coastal Wetlands Planning Protection and Restoration Act (CCWPPRA) provides a unique opportunity to develop projects which could truly benefit our area.

16.1 The Foundation request that the proposed Bonnet Carre' Diversion Project be removed from the list of projects for the Draft Louisiana Coastal Wetlands Restoration Plan and Environmental Impact Statement (DRAFT). As currently designed, the risks of the proposed Bonnet Carre' Project to Pontchartrain appear to far outweigh any possible benefits. The proposed Project targets maximum benefits in the Mississippi Sound/Biloxi Marsh area. We recommend that any diversion planned into Pontchartrain, consider as a primary goal, targeting maximum benefits in Pontchartrain. Enclosed are the Foundation's comments on the June 1993 Environmental Assessment for the proposed Bonnet Carre' Diversion.

16.2 The Plan Formulation Section of Appendix A of the DRAFT states on page 14: "The salinity problem is solved either by adding fresh water to the basin or by preventing salt water from entering the basin via the URGO (Mississippi River Gulf Outlet). Solution of the salinity problem is related to the solution of the MRGO erosion problem because one strategy, closing the MRGO, solves both problems.* All organizations, groups, and agencies agree that the MRGO is the source of the basin's salinity problem.

16.3 The problem should be addressed at its source, the HRGO. Attempting to dilute the salinity problemby artificially injecting additional fresh water into the basin far away from the MRGO does not address the source of the problem. We suggest that Alternative B (Navigable Gate in the MRGO) be given further consideration by the Wetlands Task Force. Alternative B would restore salinities to their historic regimes, allow continued deep draft navigation in the MRGO, provide tremendous hurricane protection benefits to St. Bernard and Orleans parishes, and cost less than 10% more than the selected plan, Alternative C (proposed Bonnet Carre' Diversion). If hurricane protection benefits are included, Alternative B's total benefits will far outweigh those of Alternative C.

Lakeway I · Suite 821 · 3900 North Causeway Boulevard · P.O. Box 6965 · Metairie, Louisiana 70009-6965
(504) 836-2215 · FAX: (504) 836-7283

RESPONSE 16.1: The Task Force does not concur with your belief that the Bonnet Carré diversion should not be a part of the Restoration Plan.

Maximum benefits of the Bonnet Carré diversion are not targeted in Mississippi Sound/Biloxi marshes. Oysters are the only benefits to be realized mainly in this area. All of the 10,000 acres of wetlands preserved by the diversion are in the Pontchartrain Basin of Louisiana and an estimated 70 percent of these acres surround Lake Pontchartrain.

Responses to your comments on the USACE June 1993 environmental assessment (EA) will be included in the final EA scheduled for release in December 1993.

RESPONSE 16.2: Scientific evidence provided by Sikora and Kjefve and USACE shows that the NRGO only raised mean salinities by 2.4 ppt at Chef Menteur Pass and 0.3 ppt at Pass Manchac. This increase is less than the overall variability in salinity at each station. Subsidence rather than construction of the MRGO is responsible for the presence of brackish water in western Lake Pontchartrain.

16.3 Cont. Alternative B should have strong support from the public, user groups, and agencies.

We look forward to continuing to work with the Wetlands Task Force in your efforts to restore coastal Louisiana.

Very truly yours,

Carl

Carlton Dufrechou

Encl

RESPONSE 16.3: Subsidence and lack of fresh water, rather than the MRGO, are a major cause of salinity stress in the basin's wetlands. The MRGO caused a slight increase in salinity immediately after its construction, but salinities have stabilized. Restoring fresh water flow reduces salinity and restores nutrients. The nutrients help ameliorate subsidence by increasing plant productivity thereby augmenting the amount of organic matter in the soil.

Comparison of historic isohalines with those which would exist with a gate on the MRGO indicates that the gate could not achieve historic mean salinities. Subsidence is the main reason for this.

The MRGO does not increase hurricane risks in the parish by serving as conduit for a hurricane surge. The waters driven in front of a hurricane approach the parish as a 40-mile wide surge over the marsh. The damage in the Parish during Hurricane Betsy occurred as improperly designed local levees overtopped or failed catastrophically. Since then, the USACE had provided protection where local levees failed. Since there are no hurricane protection benefits for a gate, the diversion continues to have more benefits and costs less than the gate.

August 10, 1993

Mr. Richard Boe
EIS Coordinator
CELMN-PD-RS
U.S. *Army* Engineer District, New Orleans
P.O.Box 60267
New Orleans, LA 70160-0267

Mr. Boe

I am a registered professional engineer in Louisiana and Mississippi. The attached proposal is an expanded and more detailed version of comments which I made at the Barataria Basin public meeting in Larose, La. on July 27, and at the Breton Sound & Mississippi River Delta Basins public meeting in Belle Chasse, La. on July 28, 1993.

I have read and studied the June 1993 Louisiana Coastal Wetlands Restoration Plan draft and appendices A thru E. In general most of the proposals appear worthwhile and the selected plans for the various basins seem well reasoned and are probably good short term policy. I suggest, however. that long term measures and policies have been given inadequate attention.

17.1 I offer this proposal in the hope that it can serve as a basis for reversal of the deterioration of our coastal marshes and wetlands. I think that if enacted it can do exactly that. I very much want my great-grandchildren to be able to enjoy the marshes and fishing as I did thirty some years ago.

Thanks for your attention and consideration,
Sincerely,

Benjamin W. Leigh P.E.

Benjamin W. Leigh P.E.
3464 Madeira Dr.
Baton Rouge, LA. 70810
Ph (504) 766 0861

cc: Senator John Breaux
Senator J. Bennett Johnston
Dr. James stone, La. Governor's Office of Coastal Activities
Dr. Paul Kemp, Coalition to Restore Coastal Louisiana

17.1 Cont.

PROJECT PROPOSAL

It seems clear that restoration of existing marsh and creation of new marsh can only be accomplished by the same process which originally built the marshes. that is sediment accumulation from river discharge. At present almost all Mississippi River sediment is lost by discharge into deep water at the current mouths of the river. At all but the highest river stages the vast majority of sediment carried by the river is to be found in the deepest parts of the river channel. With perhaps one exception the proposed river diversions take water from the upper part of the flow and miss most of the sediment. The remaining flow, being reduced, is less able to carry sediment which will then accumulate in the river channel below the diversions. Substantial increase in dredging will then be required to maintain channel depth. The bulk of the sediment will still be lost in deep water.

The only clear means for capturing all river sediment in shallow areas where marsh building can occur is to divert the entire river flow. The further upriver such a diversion is made, the greater marsh area which can be benefitted thereby. In consideration of individual and commercial interests the furthest practical upstream diversion point appears to be between Dalcour, River Mile 72, and Jesuits Bend, R.M. 68.5.

In order to block flow below the diversions without blocking access to the river for large ships a pair of dams with large locks would be required. Such locks should be able to pass the largest ships which the rest of the river can handle. I suggest a maximum draft of 60 feet and a maximum vessel width of 300 feet. Dams should be perhaps three to five miles apart, permitting vessels of almost any length. At least three gates in each dam would be required. Four gates per dam would be better for maintenance and dredging as required. Since no flow would exist below the dams the requirements for dredging would be greatly reduced for the river channel below the dams. This plan could accommodate the largest vessels which we can foresee in the next century.

Diversion near Jesuits Bend should be both to the east and west, controlled roughly at one third westerly into Barataria Basin, two thirds easterly into Breton Sound. The Mississippi River Gulf Outlet channel would be heavily silted by the easterly flow and would probably be impractical to maintain below Shell Beach. A set of locks near Shell Beach could then serve to minimize salt water intrusion thru the MRGO and permit major barge tow access from the Mississippi Sound and Lake Borgne into the intracoastal waterway and New Orleans facilities.

17.1 Cont.

If this proposal were put into motion today it would take 15 years to have the facilities complete and operational. Stubborn opposition, from whatever source, could add several more years to that. There would, of course, be some opposition. With a well prepared plan and sufficient public notice and input, the long time scale should minimize serious opposition. The potential benefits over the next 200 years are very great. The total sediment load of the lower Mississippi river is approximately 460,000 tons per day.[1] This amount would build one inch of sediment on 840,000 acres per year. That is equivalent to a strip 13 miles wide by 100 miles long. For a 200 year time span this represents a 4 foot thick deposit over an area of 5460 square miles. This is very substantially greater than current loss rates from subsidence, erosion, and sea level rise over the area which can be fed from the Mississippi river from any point south of New Orleans.

Many other areas need sediment deposits besides Breton Sound and Barataria basin. At high river levels many, if not all, of the currently proposed diversions above New Orleans would likely be worthwhile. Particularly, diversions into Bayou Lafourche, Lake Pontchartrain, and Lake Salvador seem likely to be productive. Additional diversion into the Atchafalaya during high river stages also seems indicated. These diversions plus the shorter proposed river course from Jesuits Bend to sea level would likely postpone for centuries the ultimately inevitable total diversion of the Mississippi river down the Atchafalaya's channel.

Design and construction of such control structures, dams, and locks as proposed herein are indeed a major undertaking. Very long term commitment is absolutely required. Political will over a long period is necessary. The long term nature of the benefits of such a project surely justify such commitment.

Given the will, the project is certainly possible of accomplishment. The Dutch have built substantially larger and deeper dams on their North Sea coast.' The gates on the Thames River below London[3] are of a type potentially suitable for enlargement to the requirements for the Mississippi river. The difficulties of such construction upon the soft and ill consolidated sediments of the lower Mississippi can be met by use of dynamic stabilization. The entire structure with deep support caissons can be designed positively buoyant and stabilized by water pumped in or out to keep the structure neutrally buoyant. Entrance and exit wings at either side of each gate, of length perhaps 1000 feet, can assist in achieving lateral stability of the structure. The gates also can be made buoyant and opened by sinking them with pumped in water. or closed by pumping out water to float them. Small locomotives running upon the gate entrance wings can be used much as in the Panama canal locks for control and guidance of even the largest vessels. A vehicle roadway above

Louisiana Audubon Council
355 Napoleon Street • Baton Rouge. Louisiana 70802-5964

1522 Lowerline St
New Orleans, La. 70118
August 30. 1993

Mr. Richard Boe
US Coordinator-CELMN-PD-RS
US Army Corps of Engineers
P.O. Box 60267
New Orleans, La. 70160

Re: **Louisiana Coastal Wetlands Restoration Plan and Draft Environmental Impact Statement**

Dear Mr. Boe.

We have reviewed the Draft EIS for the Coastal Wetlands Restoration Plan required by the CWPPRA. The Task Force has produced a document which identifies most of the problems causing coastal land loss. This was an ambitious undertaking and the Task Force should be commended in this first step in identifying problems and proposing solutions to coastal wetlands loss.

W a b i of Public Works projects in the coastal Zone for twenty-five years and COE navigation projects in particular. M n c f t basin u i d j c t included in the Restoration Pl are d s i ed to d l caused by large l works p j such as the:

- Calcasieu Ship Channel
- Houma Navigation Channel
- Barataria Waterway
- Mississippi River Gulf Outlet
- Gulf Intracoastal Waterway

to name the more significant ones.

18.1 The Draft EIS should include data on the direct and indirect adverse environmental impacts of these Public Works Projects. Rather than creating small projects to combat saltwater intrusion. why not consider the major causes of land loss in each basin and then develop measures to decrease adverse impact of these projects listed above? Many of the north-south ship channels are major causes of saltwater intrusion and tidal surges. What structural changes could be made to these projects where they enter the Gulf to lessen adverse impacts inland?

Hydrologic Units:

18.2 Each Basin should be considered as a unique hydrologic unit. All proposed federal, state and local projects should be reviewed within each basin to determine their effects on the hydrology of the basin. The present effects of past projects need to be evaluated also. Only then can projects be designed to correct damage as the result of hydrologic alteration. The EIS does not address

RESPONSE 18.1: The EIS does not go into detail about the causes of wetland loss in coastal Louisiana but rather references the discussion of "Problems" in the main report. We felt that there was no reason to repeat the same information twice.

The Restoration Plan embodies a phased approach that focuses on smaller, more diffuse projects in the early years that can help "hold the line" while larger, more complicated projects are studied, evaluated, and designed. The CWPPRA was written in a way that favored implementation of rather small-scale projects prior to completion of the Restoration Plan. The priority project lists submitted before completion of the Restoration Plan could only contain projects that could be substantially completed within five years of the submittal date. The revised Restoration Plan contains an implementation section which describes the future course of action to be taken. Large-scale projects of the types you suggest will be a primary focus of restoration efforts. Detailed studies are necessary before implementation of these types of projects to minimize impacts, maximize benefits, and hold costs to a minimum.

RESPONSE 18.2: The EIS is not meant to analyze impacts of all existing projects in the coastal zone. Certainly these projects have altered the wetlands but they perform vital socioeconomic functions including navigation, flood control, and hurricane storm surge protection. Major modifications to these projects will require much more study than what has been undertaken up to this point.

RESPONSE 18.3: we do not know enough about the various projects that make up the Restoration Plan to determine impacts for all projects. Large-scale projects that would affect large parts of a basin, an entire basin, or multiple basins would require thorough evaluation and public disclosure through the NEPA process. Also, in the NEPA documents, alternatives to the proposed projects would have to be analyzed and considered.

RESPONSE 18.4: The Task Force has agreed to a comprehensive monitoring program for CWPPRA projects to be administered by the Louisiana Department of Natural Resources with support from the U.S. Fish and Wildlife Service. The Department of Natural Resources is the only agency with direct involvement in the implementation of every CWPPRA project since the department serves as the cost-sharing partner. The department will standardize and integrate data collected for all projects.

RESPONSE 18.5:

a) The objectives of the basin plan, described on page 17 of the basin appendix, are to restore fluvial inputs, maintain and restore marshes and barrier islands, and reduce tidal exchange. In so doing, fisheries production should be increased.

adequately the impacts of present major federal projects in the coastal zone.

18.3 The Draft EIS needs to be restructured to consider the Environmental Impacts on a basin by basin basis. The projects need to be evaluated within that framework to determine the impacts on the basin's hydrology etc. When basins are now inter-connected because of man induced changes, these changes need to studied to determine the affects on adjacent basins and corrective action recommended.

Data Acquistion-Monitoring:

18.4 There are monitoring projects ongoing in many of the basins included in the draft EIS. One problem that exists is that many agencies are gathering data using different measuring devices. The resulting data sets are either incompatible with other agencies' information or there is no inter-agency communication at all. Water quality monitoring in the Barataria Basin has been undertaken by the National Rrk Service, USGS. Jefferson Parish. consultants etc. and these data, in some instances, are not compatible. Years of valuable data have been lost because they were not included in a digitized database or the data could not be integrated.

There should be a basin-wide, inter-agency monitoring program with common parameters measured and similar instrumentation used so that the data can be compiled into one database for each basin (salinity, turbidity, fecal colliform, heavy metals, pesticides etc). By standardizing the measurement and duration of monitoring and keeping a digitized database, a basin-wide information system can be created for use in monitoring the pre-construction and post-construction impacts to the basin. Fixed monitoring stations within each basin with shared information between agencies would help.

Barataria Basin:

Prior to 1963, lower Barataria Bay was a major producer of oysters. A detailed report published by La. Dept. of Wildlife and Fisheries documents the deterioration of this commercial fishery. The removal of the natural sill between Grand Isle and Grand Terre Island by the COE as part of the Barataria Waterway Project increased saltwater intrusion and tidal surges into the lower Barataria Bay. killing the productive oyster leases.

The dredging of the Dupre Cut. as part of the Barataria Waterway, provides an avenue for the northward movement of salt water into the upper Barataria Basin causing deterioration of vegetation and land loss. The continued maintenance of this 12 foot deep channel has caused a conversion of fresh water marsh into intermediate marsh. Catfish fisheries in Lake Salvador have almost disappeared because of increased salinities. One of the goals of the Restoration Plan should be the re-establishing of historic fisheries production levels (oyster, catfish etc.).

We support the Davis Pond Diversion Project and other freshwater / dint-introduction projects but these are only one part of the solution.

18.5 The following need to be addressed in the Final EIS I Restoration Plan regarding Barataria Basin:

b. 1) What were the quantitative effects of the deepening of the sill depth in 1963? 2) Impacts on basin hydrology? 3) Impacts on commercial fisheries?

c. 2) What is the optimum depth to maintain the sill? The COE was discharging dredged material from the pass into the offshore dredge disposal site which decreased the net amount of sand for barrier island nourishment. 2) Has this policy been changed?

d. 3) Has the Task Force used computer modelling to determine the effect of maintaining the natural sill depth of the Pass? 2) If the sill depth is restored would this have a positive affect on the basin's hydrology I aquatic environment?

e. 4) How will the other projects of beach nourishment I island restoration affect sill depth at Pass? The normal process of long shore drift is to fill in the pass and maintain it at shallower depths. The COE dredges the pass to maintain the artificial depth. 2) How will the other Coastal Restoration Projects in the area be affected by dredging of

b.1) Although not specific to the Barataria Waterway, the effects of deepening or constricting waterways on tidal volume is discussed in the Problem Identification Section on page 10 of the basin appendix.

b.2) The discussion of problems and future without-project conditions is very general for the basin, therefore specific impacts are not identified.

b.3) The future without-project impacts to commercial fisheries is very generally mentioned under Fish and Wildlife Resources and Economic Resources on page 14 of the basin appendix. The plan is more concerned with the future condition of the basin rather than the historic effects of the Barataria Bay Waterway.

c.1) The authorized depth of the Barataria Bay Waterway is -12 feet. Any change would require a feasibility study and a change in project authorization.

c.2) The Barataria Bay Waterway bar channel is dredged every three years on the average and the material is deposited offshore in a designated disposal area. If funded, the PBA-66 project would supply funds for the incremental cost of using the material beneficially to nourish Grand Terre Island.

d.1) Some computer models are being developed for the Barataria-Terrebonne National Estuary Program. A model pertaining to the influence of barrier islands on inland marsh loss rates has been developed by researchers at Louisiana State University.

d.2) This aspect of the basin's hydrology has not been researched. However, studies have shown that the presence of barrier islands, especially Grand Isle, East and West Grand Terre, and Cheniere Ronquille are important in maintaining tidal drag. Shallowing of the bar should not significantly affect the aquatic environment.

e.1) Four barrier island sediment replenishment projects are considered critical projects in the basin. Even if implemented so that the sediment supply in the long-shore drift increases and the bar channel silts in more frequently, the depth of the waterway will continue to be maintained at -12 feet unless the project authorization is changed.

e.2) The Task Force will likely initiate a study of barrier island nourishment in the near future. Effects of tidal passes will be included.

f) Critical long-term project (XBA-63) proposes a possible constriction of the Dupre Cut as a component of the Central Basin Tidal Drag concept.

18.5 f. Cont. Barataria Pass?

5. Consider a structure (lock) in the Dupre Cut to reduce salinities and tidal surges in the upper Barataria Basin.

Pontchartrain *Basin:*

a. We would like to see more information evaluating the effects of a sill in the Seabrook Canal and other structural solutions which prevent the saltwater intrusion into St Bernard Parish and Lake Pontchartrain. The alternatives d i d in the EIS are deficient and sidestep issues that should be addressed. Emphasis should be placed on modifying the MRGO. What is its life expectancy? What happens to the Port of New Orleans when the MRGO can no longer provide the shipping access for which it was designed?

18.6 b. Maybe we should look at the long view. How can the port be redesigned without the MRGO? What are the alternatives to the MRGO? When will it become obsolete? Is the Mississippi River Levee the place to build a new container port? The Task Force needs to be more innovative hen and propose other solutions to the stated problems.

Calcasieu I Sabine *Basin:*

a. The peak losses of wetlands in the two sub-basins were between 1955 and 1974. according to the Draft EIS. The deepening and widening of the Calcasieu Ship Channel and Sabine-Neches Waterway took place in 1951 and 1968. This coincides with the initiation of the greatest rate of wetlands loss. I attended the Cameron-Creole Watershed public bearing on December 20, 1972 when the local citizens and many environmental groups pointed out that the wetland loss around Calcasieu Lake was a direct a result of the deepening of the Calcasieu Ship Channel.

b. The selected alternative is neither A. B or C. Why not designate the preferred alternative as "Alternative D" and spell out what the objectives are? This chosen alternative does not re-establish natural hydrologic regimes (which is a stated strategy).

18.7 The Alternative chosen by the Task Force does not address the major cause of wetlands loss around Calcasieu Lake which is the elevated salinities produced by the Calcasieu Ship Channel. Rather than the "Preferred Alternative' we believe that a modified Alternative 'A"

c. should be investigated. We propose tbat a modified Alternative 'A". (which would include a moveable sill) to prevent salt water intrusion while allowing the passage of ships and ingress and egress of fisheries resources in the Basin. A structure properly designed and operated would negate the need for many of the marsh management projects proposed for the Basins.

d. 1. Has a hydrologic model been designed which closely resembles the historic hydrology of the Basin?

e. 2. Instead of using marsh management to reduce marsh degradation (which introduces new problems, exclusion of sediment etc.) why not go to the source of the problem and fix it? It appears that in this basin the plan is biased toward marsh management as the only acceptable alternative.

f. 3. What is the benefit/ cost ratio for a structure in Calcasieu Pass? In Sabine-Neches Waterway?

The following are summary comments on the full document:

18.8 I. We request that the value of present and past fisheries/shellfish production be provided for each basin. Either in dockside value or in tonnage. This would provide an index of the relative value of wetlands in each basin and would assist in determining the priority of each basin as it related to commercial fisheries. These fisheries resources are renewable. unlike the oil and gas resources, and they could sustain local economies throughout the

RESPONSE 18.6:

a) A sill in the Inner Harbor Navigation Canal would do nothing to reduce salinity in St. Bernard Parish. As discussed on page 11 of the Pontchartrain Basin appendix, slightly increased salinity is not the only problem in the basin and the diversion of river water helps solve both the salinity and nutrient problems. As discussed on page 23 of the Pontchartrain Basin appendix, rip-rapping the MRGO is the most cost effective strategy to solve the MRGO erosion problem.

As long as the MRGO is maintained, it can provide its designed shipping access. It will be maintained as long as the cost of maintenance is less than the benefits produced. There is no reason to assume that the benefit-cost ratio will drop below unity.

b) Re-design of the Port of New Orleans to function without the MRGO is a decision for the New Orleans Dock Board. At the present, the MRGO is an integral part of their operations.

Several alternatives to the continued operation of the MRGO were considered and found infeasible. Please refer to page 20 of the Pontchartrain Basin appendix.

The Mississippi River would be the only logical place to put a new container port to replace the facilities on the MRGO since such a port requires deep-draft access. Any new channel would cause extensive, and unacceptable environmental damage.

RESPONSE 18.7:

a) We concur.

b) The selected strategy is perimeter control which can solve the basin's problems at a lower cost and in a shorter time than locks.

c) The perimeter control strategy would reduce salinity levels and tidal scour within the wetlands. Other "long-term" strategies certainly remain possibilities after additional studies have been made. In the interim, the perimeter plan will provide protection and restoration for at least a 20-year period.

d) None that we know of.

e) The total number of projects by category in the selected plan are:

Marsh Management - 12	Shoreline Protection - 25
Hydrologic Restoration - 38	Terracing - 1
Freshwater Diversion - 9	Sediment Trapping - 8
Marsh Creation - 5	Vegetative Plantings - 4

f) The benefit/cost ratio is unknown, but locks in these waterways would cost $750 million to construct, operate, and maintain. On the other hand, the perimeter control costs only $5.4 million.

coastal zone if properly managed.

119 2. There needs to be a comprehensive EIS for each basin which would be a separate hydrologic unit. The effect of each proposed project should be addressed. The specific causes of hydrologic problems in each basin need to be identified. Any basin plan should be designed to o gi l drai g pat rn: if p

18.10 3. Projects seeking wetlands permits through the Corps of Engineers and State CZM need to be i d within tl context f the Basin's hydrolo_ There are projects being considered now by the Corps and State which would negate projects included in the Restoration Plan, *e.g.* Point au Fer (Terrebonne Parish) and Bayou Perot Cut (Jefferson Parish). Criteria need to be established for permit review in the coastal zone which takes mto account the goals of the restoration plan in each basin. Projects which are counter to the goals of the plan should be denied.

18.11 4. Many of the projects presented in the plan have separate goals, and in some eases the goals conflict. Since the task force is made up of agencies each with its own agenda we recommend that there be a panel of scientists, not directly involved with the process, to review the recommendations of the Task Force and provide an unbiased analysis. It is apparent that in several basins the agency bias has prevailed and the correct alternative has not been chosen.

18.12 5. The Barrier Island portion of the restoration plan is given high priority, yet the hydrologic impacts of the navigation canals which cut through sane Barrier Island Complexes and other coastal areas are not fully discussed. Please discuss the negative impacts to each basin's hydrology as a result of these federal projects.

18.13 6. Because of the inherent problems with marsh management, this solution should not be the primary choice.

18.14 We are concerned that projects included on the priority lists 1-3 will not be properly reviewed before funding and implementation. Will Environmental Impact Statements be required for each agency-sponsored project? Will these projects have to follow the normal Sec. 404 and Sec. 10 review process? Will there be public input in the project review process?

We consider the Restoration Plan a first step in identifying damage to our coastal wetland ecosystems. Additional studies are needed. We are concerned that many projects could be counter productive and therefore suggest more emphasis on demonstration projects with a good monitoring program. We hope that interagency communication and problem solving now initiated will continue. Please provide us with a copy of the Final Impact Statement when available for public revtew.

Thank you for the opportunity to comment

Sincerely.

Barry Kohl

Barry Kohl, Ph.D.
Vice President

cc: Ms. Doris Falkenheiner, Pres. LAC
Mr. Norman Thomas. EPA, Dallas
Sierra Club, New Orleans Group
Mr. Dave Fruge, U.S Fish and Wildlife Service, Lafayette
Mr. Rick Ruebsamen, National Marine Fisheries Service, Baton Rouge

RESPONSE 18.8: We do not believe that prioritization of restoration projects by basin, based on fisheries production, would be a proper method. The CWPPRA is focused on wetlands, not commercial fisheries production. Even if we tried to develop fisheries production for each basin, the figures would be very misleading. Landings data are based to a large degree on the point of sale and not the point of catch. For instance, fishermen selling their catch to seafood dealers in Orleans Parish would have much of their catch reported as coming from the Pontchartrain Basin. In reality, much of the seafood sold to New Orleans dealers comes from other basins, but there is no way of knowing how much from current landings information. Similar situations exist at other major seafood ports across the coast. A limited amount of landings data is included in each basin report.

RESPONSE 18.9: Please refer to Response 2.1.

RESPONSE 18.10: Section 304 of the CWPPRA provides for development of a Conservation Plan which shall have a goal of achieving no net loss of wetlands in the coastal areas of Louisiana as a result of development activities. As stated in Section 2.2.2. of the EIS, regulation of developmental activities is covered under a separate section of the CWPPRA (Section 304), and therefore will not be discussed in this EIS.

The plan acknowledges that restoration efforts will have to be based on real world conditions, which would include taking cognizance of activities and projects undertaken outside of CWPPRA. These factors will be addressed to some extent in the Conservation Plan, but will also need to be the subject of periodic review.

RESPONSE 18.11: In a Task Force comprised of five Federal agencies and the State of Louisiana, all of whom have different missions, any single agency's bias is lost.

RESPONSE 18.12: The Barataria Basin plan states that channel construction is one cause of barrier island deterioration.

RESPONSE 18.13: We believe that projects to use available sediments to the maximum extent practical are to be favored over protection type projects such as marsh management when cost-benefit ratios are comparable. Unfortunately, projects to move sediments are often extremely costly compared to the cost of projects to protect wetlands, such as hydrologic restoration and marsh management. These protection-type projects may be the only logical approach to wetland preservation or restoration in areas far removed from sediment sources.

RESPONSE 18.14: Much of the information you request is in Section 1.3 of the EIS. All projects will require Section 404 permits. Some projects, like the ones to protect and maintain existing dikes on Federal refuges may be covered by Nationwide or general permits. As it stands right now, each Task Force agency will gain environmental compliance for projects that they sponsor by using their own policies and procedures. The EPA has objected to this approach and has requested that a standard procedure be used by all agencies. Also, please see Response llC.6.

STATEMENT REGARDING THE DRAFT
LOUISIANA COASTAL WETLANDS RESTORATION PLAN

by

Charles G. Groat, Executive Director
Center for Coastal. Energy. and Environmental Resources
Louisiana State University

The academic scientific community of Louisiana played a major role in documenting the loss of Louisiana's coastal wetlands and in developing an understanding of the processes responsible for the loss. We supported efforts to enact legislation at both the state and federal levels to restore our coastal wetlands and we applaud the work that has been accomplished under the Breaux/Johnston act. Through the Center for Coastal, Energy, and Environmental Resources (CCEER) at Louisiana State University. the U.S. Environmental Protection Agency has contracted for a review of the draft Louisiana Coastal Wetlands Restoration Plan by the academic scientific community. This review will not present EPA's official position on the plan. rather it will provide an independent review useful to the agency. We will provide our preliminary comments to EPA by August 30 with a final report due September 30. Based on our progress to date. we offer the following observations and comments.

The coastal wetland loss problem relates to increasing inundation of marsh soils over time. the inundation eventually leading to the collapse of marsh plant function followed by wetland loss. Increasing inundation or water-logging of marsh soils results from:

1. Subsidence

2. Increasing tidal prisms due, principally. to the disappearance of our barrier islands (eg. East Timbalier could be gone in 4 years).

3. A deficiency of mineral sediment, that is river sediment, resulting from the cessation in natural flooding events due to the flood prevention levee system and the sealing of distributaries such as Bayou Lafourche.

The plan is an important step in dealing with coastal wetland loss and will make a significant contribution to restoring wetland habitats. We support the organization of the plan on a basin basis which makes it necessary to recognize the interdependence of habitat and landform elements and the effects restoration projects in one area will have on other parts of the basin. Given the aforementioned. we wish to express the following concerns :

19.1 • The lack of recognition of the role barrier islands play in protecting the wetlands in the basins behind hem and of the very red and urgent need to restore our barrier islands

RESPONSE 19.1: The Terrebonne, Barataria, Breton Sound, and Pontchartrain basin plans all recognize the role of barrier islands in protecting wetlands. These basin plans select strategies that restore barrier islands.

19.2 • The presence of only a few sediment diversion projects in the priority lists developed to date

19.3 • Most of the projects are defensive rather than offensive

19.4 • The inclusion of a large number of marsh management projects which appear to prevent much needed sediment input and generally restrict marine and estuarine organisms from utilizing the impoundment

19.5 • The use of hard structures without consideration to how they may disrupt local longshore sediment distribution

We encourage CWPPRA program to further develop the "big picture" or systemic conceptual restoration ideas presented in the Solutions to Wetland Loss in Louisiana section of the main document, such as:

19.6 Creation of the Breton Delta
19.7 Reconnection of Bayou Lafourche
19.8 Increasing the discharge down the Atchafalaya River

We urge the Louisiana Coastal Wetlands Conservation and Restoration Task Force chairman to seek out the necessary funds to initiate the scientific and engineering feasibility studies that will be necessary to lay the groundwork for implementation of big picture solutions. For our part, CCEER will direct its data gathering and basic and applied research programs in directions and areas that will support big picture solutions.

We are excited to read in the *draft* plan that the CWPPRA program will be developing a formal mechanism for organized involvement by the academic scientific community, something that has been missing in the past.

We congratulate the Task Force on its accomplishments in producing this much needed plan and look forward to participating with the Task Force in the development of a long-term wetland restoration strategy for coastal Louisiana

New Orleans. LA
August 11, 1993

RESPONSE 19.2: The plan provides for a number of possible diversions and it can be modified from time to time to provide for more. The Task Force intends to conduct feasibility studies that will be needed for all major diversions and to conduct a study to determine how much capacity the system has for such projects.

RESPONSE 19.3: The plan embodies a phased approach that focuses on smaller, more diffuse projects in the early years that can help hold-the-line while larger, more comprehensive projects are studied and designed.

RESPONSE 19.4: The plan is not intended to favor marsh management over any other technique. The plan recognizes that marsh management is a controversial restoration technique but feels that there is ample support for including it as a restoration tool in certain situations.

RESPONSE 19.5: The plan does not encourage the use of hard structures where other techniques would be appropriate. Through the use of demonstration projects, various shoreline protection techniques will be evaluated for effectiveness and appropriateness before committing to their widespread use.

RESPONSE 19.6: The plan provides for a number of possible diversions and it can be modified from time to time to provide for more. The Task Force intends to conduct feasibility studies for all major diversions and to conduct a study to determine how much capacity the system has for such projects.

RESPONSE 19.7: The Barataria Basin plan includes a project to reopen Bayou Lafourche. Any such large-scale project would require a feasibility study and would be implemented in a later phase.

RESPONSE 19.8: This will be studied pursuant to Section 307b of CWPPRA.

Comment Package 20

A REVIEW OF THE COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT - LOUISIANA COASTAL WETLANDS RESTORATION PLAN

FOR
ENVIRONMENTAL PROTECTION AGENCY
REGION 6, DALLAS

BY

NATURAL SYSTEMS MANAGEMENT
AND ENGINEERING PROGRAM,
CENTER FOR COASTAL, ENERGY
AND ENVIRONMENTAL RESOURCES
LOUISIANA STATE UNIVERSITY

30 AUGUST, 1993

PREFACE

'Man-made modification in Louisiana wetlands, which are changing the conditions of existence from its very foundations, are the result of flood protection, deforestation, deepening channels, and the cutting of navigation and drainage canals...Reclamation and flood control as practiced in Louisiana have been more or less a failure, destroying valuable resources without producing the permanent compensating benefits originally desired. Reclamation experts and real estate promoters have been killing the goose that laid the golden egg...our future conservation policy should be restoration of those natural conditions best suited to an abundant marsh, swamp, and aquatic fauna, but under some degree of control at all times, to the end that the state and nation may enjoy a more balanced diet, healthful recreation, and enduring prosperity."

Viosca, P., 1928. 'Louisiana wetlands and the value of their wildlife and fishery resource.' Ecology 9:216 - 229

INTRODUCTION

This review of the Coastal Wetlands Planning, Protection and Restoration Act - Louisiana Coastal Wetlands Restoration Plan was made possible by grant CD-996177-01-0 from the Environmental Protection Agency to the Center for Coastal, Energy, and Environmental Resources (CCEER) at Louisiana State University.

On 19 August 1993 a group 22 scientists assembled in Baton Rouge. Louisiana to participate in a workshop to review the Louisiana Coastal Wetlands Restoration Plan. The day-long symposium focused on concerns compiled during the three weeks prior to the mating. The scientific panel was composed of researchers from a variety of disciplines familiar with physical process, biology, geology, soil science, geomorphology, ecology, natural resource management, and engineering. This document represents the results of this meeting, along with the concerns of other scientists who could not attend the workshop. All material collected from the conference and from others was synthesized by an editorial panel into this short, but complete manuscript.

The Editorial Panel consisted of:

- Dr. Ivor Ll. van Heerden, (Chairman), Natural Systems Management and Engineering Program, CCEER/LSU
- Dr. Donald Davis, Louisiana Applied Oil Spill Research and Development Program, CCEER/LSU
- Dr. Paul Kemp. Coastal Ecology Institute/Natural Systems Management and Engineering Program, CCEER/LSU
- Andy Nyman, Wetlands Biogeochemistry, CCEWLSU
- Dr. Paul Templet, Environmental Studies, CCEER/LSU
- Dr. Eugene Turner, Coastal Ecology Institute, CCEWLSU

Additional contributors included:

Dr. Bill Herke, Forestry, Wildlife and Fisheries, LSU.
Dr. Bruce Thompson, Coastal Fisheries, LSU.
Dr. Charles Groat. CCEER, LSU.
Dr. Charles Sasser, Coastal Ecology, LSU.
Dr. Charlie Adams, Coastal Studies Institute, LSU.
Dr. Denise Reed. LUMCON.
Mr. Eric Swenson, Coastal Ecology, LSU.
Dr. Gary Shaffer, S.E. Louisiana University
Dr. Greg Stone, Department of Geography, LSU.
Dr. Harry Roberts, Coastal Studies Institute, LSU.
Dr. Irv Mendelssohn, Wetland Biogcochemistry. LSU.
Dr. Joe Suhayda, Civil Engineering. LSU.
Mr. Johan Sydow, Coastal Studies Institute, LSU.
Dr. Mark Bymes, Coastal Studies Institute. LSU.
Dr. Mike Barber, Civil Engineering. Tulane University.
Dr. Nan Walker, Coastal Studies Institute, LSU.
Dr. Paul Templet, Environmental Studies. LSU.
Dr. Robert Chabreck, Forestry, Wildlife and Fisheries, LSU.
Dr. Shea Penland, Coastal Studies Institute. LSU.
Dr. Steve Faulkner, Wetland Biogcochemistry. LSU.
Dr. Steve Murray, Coastal Studies Institute. LSU.

The panel's views are summarized and discussed under the following headings:

1. Executive Summary
2. The Problem statement
3. The Solution statement
4. A Process Model for Wetland Restoration
5. Conclusions

A draft comment to the Draft Programmatic Environmental Impact Statement for the Louisiana Coastal Wetlands Restoration Plan is included as an appendix.

EXECUTIVE SUMMARY

The executive summary, as currently written, certainly sets the stage for the remainder of the document. It has, however, one critical omission. The large-scale, long-term restoration conceptual plans and ideas are not incorporated into the text or listed as appendices. This material should be an integral part of the goals and objectives outlined in the executive summary. Once the long-term conceptual ideas are integrated into the summary, it should be stressed that the smaller short-term initiatives, that comprise the Priority Projects Lists, are projects that

support each basin's long-term strategies. In other words, the smaller projects support the long-term, large-scale (big-picture) plans.

On page 11 the statement: 'The Task Force did not develop nor did CWPPRA require—a process for analyzing, designing, or obtaining Congressional approval for large projects beyond the scope of CWPPRA's Priority Project List' appears. This assertion implies the CWPPRA has no recommendations for the future. We need a list of recommended 'point forward' steps that take CWPPRA into the 21st century. CWPPRA has an opportunity to have a major impact on achieving a no-net-loss of wetlands in Louisiana. It should rise to the occasion. If it does not choose to do so, many scientists and members of the general public will question the validity and value of a program that so limits itself to the short-term.

The cost and benefits claimed in the plan often appear to be skewed. The cost to re-instate natural long-term processes and to approach a no-net-loss scenario will no doubt exceed the estimated $ 1.1 billion discussed in the plan. The cost could be as high as $ 4.0 billion. Only with this kind of expenditure, representing a mixture of long-term, large-scale projects and supporting short-term, small-scale efforts will the no-net-loss objective be achievable. It is imperative that natural fluvial/basinal processes be reestablished in a manner that duplicates, as close as possible, the natural system prior to human interference.

THE PROBLEM STATEMENT

As most scientists involved in this were part of the peer review team that assisted Drs. Kemp. Van Heerden, and Davis prepare the problem statement for the CWPPRA Task Force, there was strong consensus *and* only general comments about the draft plan. Some researchers felt more emphasis should be placed on the influence of canals and impoundments. One of the major changes proposed was the development of a Proem Solution Model linking problems to processes to solutions.

THE SOLUTIONS STATEMENT

As most scientists involved in the present evaluation wen a part of the peer review panel that assisted Drs. Van Heerden, Kemp, and Davis assemble and prepare this document for the CWPPRA Task Force, there was strong consensus as to the validity of the solution statement. It was felt additional figures demonstrating the various concepts would add to the document. The fact that if Bayou Lafourche was reconnected, it would aid wetland restoration in two major basins, Terrebonne and Barataria, was not emphasized strongly enough. Additionally, the section on Sediment Transport should be expanded as should the section on Inert Industrial By-Products. In the latter section the fact that composted sewer sludge could be utilized in wetland restoration should be recognized. More importantly, the scientific community is proposing that a Process Solution Model be the basic philosophy behind the generation of solutions to coastal Louisiana's wetland loss problem. A model of this nature was utilized in the development of the conceptual ideas in the Solution statement. Incorporating such a model in the Main Document will serve as the link between the problem and solution sections.

A PROCESS MODEL FOR WETLAND RESTORATION

Most of the panel's comments did not concern the specific projects or strategies outlined in the basin plan appendices. It was recognized these plans were developed independently of each other and did not include the overall regional approach identified in the main document's solution section. The basin planning process was extremely valuable in obtaining general public and agencies perspectives on what measures were deemed appropriate to resolve specific wetland problems. It is, in that regard, a valuable document that outlines citizen/agency concerns. From this standpoint, the plans provide a useful catalog of issues, problems, and matters relevant to each basin. They are, therefore, an excellent starting point for the feasibility work required to set priorities within each management unit and for the coast in general.

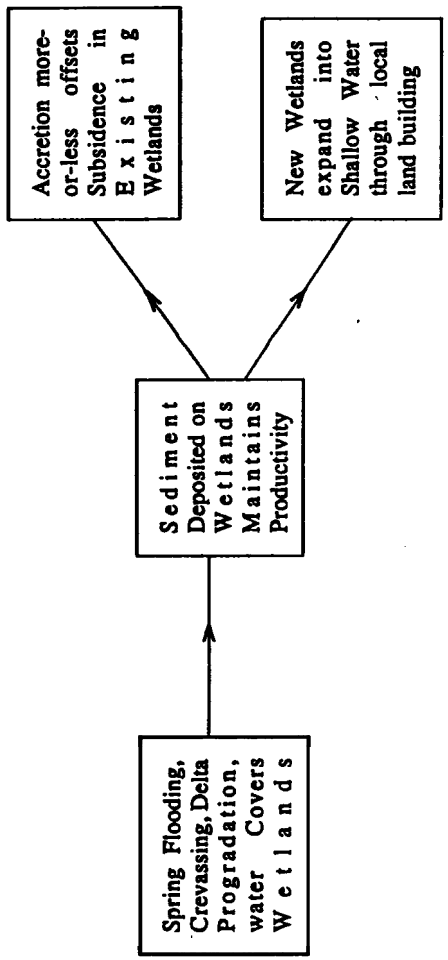
The basin planning method was, on the whole, map-based; it was not conceived as a process-oriented approach to solving the wetland loss issue. Land-loss processes are used anecdotally to explain the need for various site-specific projects. These observations may turn out in the future to be full of insight, but cannot currently be tested, or even subjected to in-depth critical scientific analysis. Further, evaluations of alternatives listed in the basin plans must be considered preliminary and speculative assessments. What is needed is an ecologically and geomorphically sound restoration model that can be utilized at both the basin and system levels--a **PROCESS SOLUTION MODEL.**

The Natural System

Prior to European settlement along the Mississippi River, the naturally subsiding deltaic plain, not only sustained itself above sea level; but also increased in area and elevation. This was a product of various fluvial processes, such as overbank sedimentation during spring flood events, crevassing, channel bifurcation, and delta switching. The sedimentation process is illustrated in Figure 1.

Deltas and rivers, like all natural systems are continually in a state of change evolving toward a new set of conditions. Ecologists see the process reflected in plant and animal community succession. It is important to understand this natural adaptability as we seek to manage wetland sustainabilities. The major sedimentation cycle, delta switching at about 1000 year intervals, is an example of succession. Delta switching occurs when the Mississippi River abandons an inefficient channel and finds a new and shorter channel to the Gulf of Mexico and begins to build a new delta at its mouth. The delta which has lost the majority of the flow then begins to degrade, however, the switching occurs gradually and the old delta and it's wetlands still receive mind-rich sediment during the spring flood which has an important maintenance function, although the volume of sediment declines with time. The switching process can be visualized by viewing the characteristic processes of rivers and basins (or estuaries). Those processes are listed below.

FIGURE 1. THE NATURAL SEDIMENTATION PROCESS



Basin Processes **(land-loss)**

1. **Subsidence**
2. **Tidal Action**
3. Storms
4. Wave **Action**
5. **Sedimentation (organic)**

Fluvial Processes (land building)

1. **Sedimentation (inorganic)**
2. Spring Flow
3. Delta **Switching**
4. Fresh Water **Introduction**

Basin processes generally lead *to* wetland **loss,** while natural **fluvial** systems lead to land gain. Each basin **is in** a **different** state of **succession** and **can** be **viewed** as a **continuum with basin** and **fluvial processes** as **end** members. Those **basins losing** land the fastest are **primarily** affected by basin processes. Those **gaining** land the fastest **are** controlled by **fluvial** processes. The remainder of the **basins** arc governed by **basin** and **fluvial processes.** Human actions tended to curb **fluvial** land **building** processes and favor the **dominance** of **basin** processes. They, therefore, enhanced the land-loss **equation (see Figure** 2).

GEOMORPHOLOGICAL UNITS AND DOMINANT PROCESSES

Within coastal **Louisiana** we recognize **three** major **geomorphological units—active** delta, abandoned delta, and **chenier** plan. The **following sections will discuss** the **relationship** between basinal and **fluvial** processes within **each.** The **discussion** assumes the human **impacts** on **these physiographic units** arc **minimal.**

Active Delta

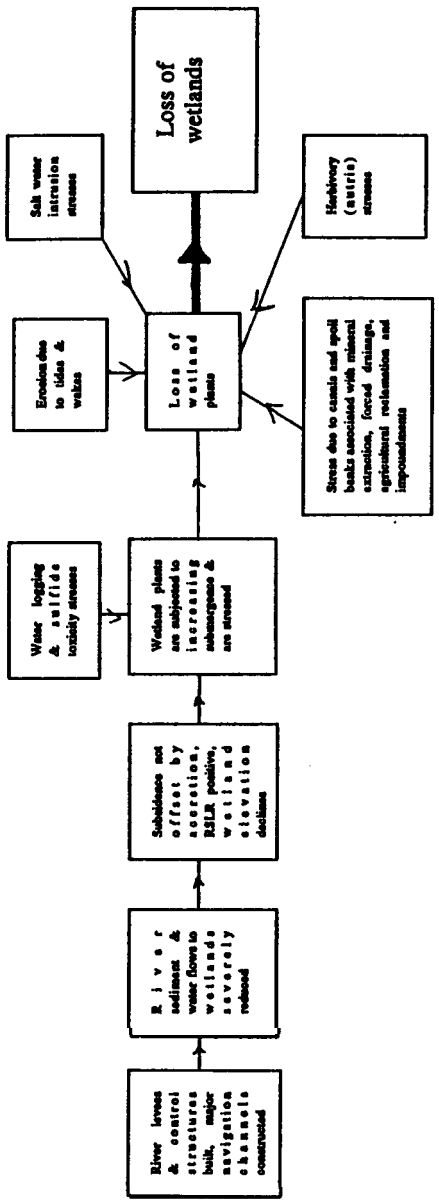
In an **active** delta the **key** physical processes arc those related to the input of fresh water and **mineral-rich sediments.** Thus, **fluvial processes** (sediment **input** and fresh water) **dominate** and control the **basinal** processes of subsidence, wind-wave and ocean **swell erosion,** tidal **scour** etc. **The** net **result is expansion** of the wetland surface over **time** and **creation within the** system of **extensive** fresh-water **habitats. Implied** in an **active** delta **is** annual wetland **flooding** that **is considerably** greater than **before** the area **was** consumed by an **active** delta. **With time,** the delta and associated **fluvial** channels **prograde** and **fill in** the landscape's **topographic lows—creating** vegetated wetlands.

Abandoned Delta

In the abandoned delta, **basinal** processes **dominate** over **fluvial.** However, **fluvial** inputs of fresh water and **nutrient-rich** sediments, although reduced from when the system was an active delta, lead to the **maintenance** of large parts of the wetlands. **This maintenance** effort nearly balances the **combined erosion/wetland** loss basinal **processes.**

Generally, an abandoned delta shows a marked gradation of marsh types from **saline** at the coast to fresh along **interior portions** of the basin. **These wetland** types slowly **migrate** landward. Fresh and intermediate **marshes** are generally decreasing **in areal** extent. Some parts of the

FIGURE 2. A FLOW CHART OF THE WETLAND LOSS PROBLEM



basin, where basinal processes strongly dominate fluvial events, are characterized by marsh segmentation and pond formation. These processes work to the detriment of the emergent wetlands.

Immediately following abandonment, basinal processes begin to control the system. Further, the outer beach or shoreline separates from the marsh as a string of barrier islands. The intervening area converts to a productive estuary. The barrier islands move slowly landwards, generally at a rate lower than the outer shoreline of the marshes. In the process, the estuary enlarges. The abandoned delta estuaries become very productive and sustain a large percentage of the area's commercial fisheries (e.g., Barataria Bay).

Ultimately, the outer coastal marshes are eroded into a series of islands, with the barrier islands separated from the marshes by large, open bays. The estuarine system is eventually replaced by a Sound (e.g., Breton Sound). Moreover, the estuary is restricted to small bays within the marshes that have tidal connections to the Sound.

Chenier Plain

Marine processes dominate throughout, but sediment introduction waxes and wana. When an active delta is in the vicinity of Fourchon, or further west, a significant volume of sediment is deposited along the shoreline that progrades seaward as a vegetated mud flat. Fluvial processes dominate. When active deltas are located east of Fourchon, basinal processes exceed the fluvial. The end mult is the shoreline reworks into a beach ridge or chenier that migrates landwards.

The majority of the beach materials are shell and shell fragments. These are derived from the eroded mud flats and from shell organisms on the shallow inner shelf. Ocean swell processes rework the shells into the beach profile.

The interval when the dominant chenier processes change from basinal to fluvial is marked by rapid shoreline erosion. The onset of the fluvial phase increases the turbidity within the shallow inner shelf s water column. This impacts the productivity of the region's invertebrates, which in turn reduces the quantity of material that can be incorporated in the beach. The Chenier Plain wetlands, until human intervention, were maintained by fluvial sediment input from a number of interior riven draining Louisiana and Texas.

A PROCESS SOLUTION

The long-term solution to Louisiana's wetland loss problem is tied directly to reestablishing the hydrologic processes that created the wetlands. Principal among the processes to be reinstated is increased sedimentation, (i.e., introducing sediments from rivers into wetlands and discontinuing activities that restrict sediment movements).

A hydrologic-process-oriented solution to correct the wetland loss problem seeks to reestablish natural water and mineral-rich sediment flow mechanism that duplicate, where feasible, those

that dominated before human intervention (see Figure 3). The wetlands were created by a series of dynamic processes—short- and long-term sedimentation pulses that initiated continuous change. Trying to stop and/or alter those natural occurrences is detrimental, expensive, and will ultimately fail. For those reasons, and others, we recommend a process approach to restoring, enhancing, and creating new wetlands. This approach was utilized in the generation of the conceptual ideas presented in the Solution Statement in the main document of the CWPPRA draft restoration plan. We would encourage the use of this model in the refinement of the basin-by-basin plans. The process approach has a number of advantages over solutions that seek to preserve particular landforms, species, or site-specific issues. Seven elements illustrate the importance of the process-oriented approach.

1. A process approach captures natural energies and works *with* nature's forces rather than against them. This results in large benefits from a relatively small input or cost--favorable benefit/cost ratio are obtained.

2. A process approach will result in a *natural system* whose landforms are determined and maintained by the reinstalled or reconnected hydrol c forces.

3. A process approach avoids *species* management problems. That is it refrains from trying to maintain a species in an area that is no longer favorable for that species. In the long-term, species distributions may change. The net effect will, however, be positive. For example, more alligators may be present. but they may be shifted in space.

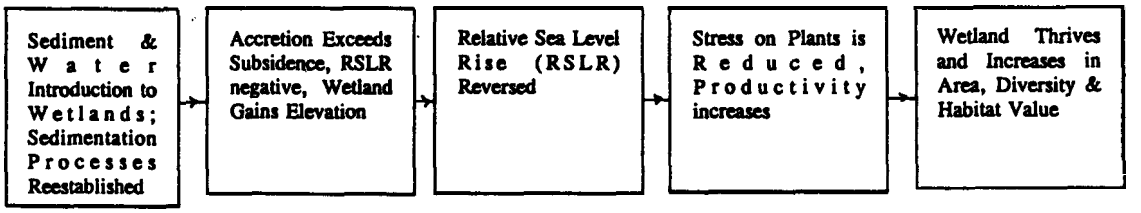
4. A process approach bypasses the tendency to manage for a specific *landforms* (managing for the map). For example, it is not feasible to maintain brackish marshes in an area that no longer is suitable for brackish marshes.

5. A process approach *manages for gain;* it is a positive approach and does not manage just to prevent events from occurring. Louisiana's existing coastal zone is testimony to the building powers of deltaic processes—reestablishing those processes *can* result in net wetland gains.

6. Since nature maintains the natural system and dollars are saved, a process approach provides the *lowest maintenance costs* over time. The alternative, trying to manage for particular species or landforms, will result in much higher maintenance costs. Ultimately the approach will fail because the ecosystem changes to non-optimum conditions for those managed species.

7. Because all projects, regardless of basin, seek to reestablish the same natural processes, a process approach results in *consistent projects* across a c h basin. This means the projects are much easier to justify and defend to all interested parties.

FIGURE 3. THE RESTORATION SEDIMENTATION PROCESS



Reestablishing natural sedimentation processes will result in existing wetlands being maintained from sediment accretion each year and the creation of new wetlands. It requires much less sediment to maintain existing wetlands than to create new ones. The process will result in the same types of landforms that we see today. They may, however, be in somewhat different places—fresh marshes will form in areas that may be currently brackish, as water and mineral-rich sediments "freshen up' an area. The process will not alter species diversity. The same species will utilize these new habitats. In fact, as wetland health improves they may be in different places, perhaps in greater numbers, and certainly in different areas as they adapt to optimum conditions or habitats. The region will readjust to the new process conditions and achieve a 'steady state" that is much easier, and less expensive, to maintain. Trying to maintain landforms and species in particular places, over time condemns one to perpetual maintenance and very large costs.

A DISCUSSION OF INDIVIDUAL BASIN STRATEGIES

The scientific panel applied the process solution model to each basin and made the following suggestions as to the possible strategies in each basin.

Pontchartrain Basin

20. PONT1

The Pontchartrain Basin is an abandoned delta geomorphological unit. Sediment and fresh water input has been drastically reduced due to the closure, in 1812, of Bayou Manchac and the leveeing of the Mississippi River. Additionally, the dredging of the Mississippi River Gulf Outlet (MRGO) combined with the reduction in fresh water input has created a situation where salinities are elevated. The upper fresh water swamp region has been impacted by the dredging of the Amite River Diversion Canal. Artificial levees associated with this canal have impounded swamps that are now severely stressed. The scientific panel suggests the long-term strategy should be to create a fluvial regime in the system, and to connect impounded wetlands to natural drainage systems. Additionally, the scientists would support, on environmental grounds, the closure and sealing of the MRGO—if such wen ever undertaken.

Breton Sound Basin

20. BRET1

The Breton Sound is an abandoned geomorphological unit which has been pushed to a dominance by basinal processes due to man's activities. The suggested long-term strategy is the reestablishment of the fluvial regime through a series of controlled and uncontrolled diversions. The creation of a new Breton Delta through an uncontrolled diversion should greatly benefit this basin.

The Mississippi River Delta Basin

The Mississippi River Delta Basin is an active delta geomorphological unit. Fluvial processes should dominate over basinal and increase in wetland expression should be the dominant consequence of fluvial process dominance. However, this basin lost 105,298 acres of wetlands

RESPONSE 20.PONT1: Restoration of fluvial input to the basin is a key strategy. In the short term, the Bonnet Carré Freshwater Diversion (a non-CWPPRA project) is a critical component. The long-term phase of this strategy includes several smaller freshwater diversions and also recommends projects to import sediment from the Mississippi River. Gapping spoil banks to reconnect impounded wetlands to natural drainage systems is included in the plan as one demonstration project and two short-term supporting projects.

The rationale for elimination of numerous methods suggested to solve the MRGO problem is found on page 20 of the Pontchartrain Basin appendix. The rationale indicating that bank stabilization is more cost effective than a gate is found on page 23 of the appendix.

RESPONSE 20.BRET1: The basin plan includes a 20,000 cubic feet per second sediment diversion. If feasibility studies indicate that a major uncontrolled diversion should be in the Breton Sound Basin, the larger diversion would be substituted.

between 1932 and 1990 (i.e., more than 20 % of the basin area). Such loss should be compared to the period 1880 - 1930, when Plaquemines Parish, in which the basin is located, gained in excess of 40,000 acres (Fisk et al. 1936).

The reason for dramatic wetland loss in the basin is partially because man forced the Fluvial/Basinal processes balance towards the Basinal end due to navigation interests and flooding controls; and partially because the Mississippi River has reached the edge of the continental shelf. In the short-term reactivation of former crevasses and the creation of new subdeltas would result in local reversal in wetland loss.

20. MISS1 It is suggested that the long-term strategy for this basin should be the relocation of the Mississippi River into Breton Sound, possibly at the meander in the river opposite the town of Nairn. Such an action would cause the Mississippi buds-foot delta to eventually be abandoned. As a consequence, the now abandoned delta would rework into an outer beach-barrier system and some inner marshes.

We applaud the Mississippi River Delta Basin Planning Team in stating that their selected plan is the pursuit of the full-scale uncontrolled diversion of the Mississippi River.

The Barataria Basin

20. BARA1 The Barataria basin has changed from an active delta geomorphological unit in the 1700's to an abandoned delta unit. Presently, the activities of man, being principally the leveeing of the Mississippi River and the closure of Bayou Lafourche, have pushed this to a basin dominated by basinal processes. The long-term strategy suggested is to reinstate and enhance the fluvial processes. The proposed reconnection of Bayou Lafourche and associated gapping and directing flow across Bayou Lafourche's eastern levees will serve as a valuable source of mineral-rich sediments.

20. BARA2

20. BARA3 In addition, an active system of artificial diversions would replenish the marshes and offset the accumulated damage caused by leveeing the Mississippi River. It is further suggested that restoration of the barrier islands will have an impact in reducing some of the basinal processes.

The Terrebonne Basin

20. TERR1 The Terrebonne Basin is an abandoned delta geomorphological unit. As such, basinal processes dominate over fluvial. The long-term trend would be shoreline erosion along the outer (seaward) fringes of the marsh and a slow migration of the saline and brackish marshes landward, to the detriment of the fresh and intermediate wetland types. The western half of this basin is slowly becoming more and more influenced by the Atchafalaya River and is moving from a basinal process dominance to a greater fluvial influence. Parts of the western basin are experiencing flooding which for the most part is a natural phenomenon, before wetland creation processes set in.

RESPONSE 20.MISS1: A specific site for the relocation of the Mississippi River's main channel will be determined through a feasibility study proposed in the basin plan. The Nairn site possesses several desirable features and will be given due consideration.

RESPONSE 20.BARA1: The problem identification section on pages 7-16 of the basin appendix has been rewritten and these facts are emphasized.

RESPONSE 20.BARA2: Twenty of the twenty-two critical long-term projects involve freshwater or sediment diversions (including the reconnection of Bayou Lafourche) or outfall management.

RESPONSE 20.BARA3: Barrier island projects compose half of the critical short-term projects. Other barrier island projects are included in the supporting short and long-term categories.

TERR1 cont. For the long-term strategy the scientific panel suggests establishment of a fluvial process regime which will ensure that mineral-rich sediment and fresh water are spread over as large an area as possible. Additionally, the barrier islands should be substantially restored as this will have an impact on reducing some of the basinal processes.

The Atchafalaya Basin

20. ATCH1 The Atchafalaya Basin is an active delta geomorphological unit. In most of the basin fluvial processes dominate over basinal. The scientific panel agreed with the Atchafalaya Basin Planning Team that the long-term strategy for this basin should be the modification of the operation of the Old River Control Structure to increase the amount of flow conveyed to the Atchafalaya Basin Floodway system to Atchafalaya Bay.

20. ATCH2 In addition to building two deltas in Atchafalaya Bay, Atchafalaya sediments are also responsible for shoreline progradation along the Gulf shoreline of the Mermentau Basin. Atchafalaya sediments are also effectively reducing land loss in the western Terrebonne Basin and move down the GIWW as far east as the Houma Navigation Canal during Atchafalaya floods. In West Cote Blanche and Vermilion Bays significant amounts of sedimentation are also occurring where short channels link the bays to the GIWW. To increase the present Mississippi discharge directed down the Atchafalaya River, even for only limited parts of the year, could only expand the area benefitted by this sediment source.

The Teche/Vermilion Basin

20. T/V1 The Teche/Vermilion Basin is in transition from an abandoned delta geomorphological unit to an active delta. As such it is still experiencing wetland loss and shoreline erosion. However, wetlands close to sediment sources (eg. Gulf Intracoastal Waterway) are experiencing some natural restoration.

20. T/V2 The suggested long-term strategy for this basin is the management of the dispersal of fresh water and sediment that enters the basin from the Atchafalaya River along the GIWW and directly from Atchafalaya Bay. Short-term strategies should take cognizance of the fact that Atchafalaya discharges could be increasing in the future.

The Mermentau Basin

20. MERM1 The area stabilized by permanent mud deposits from the Atchafalaya is currently spreading from east to west at about 0.5 to 1.0 miles per year. If this pace continues, it can be speculated that the Gulf shoreline of the Calcasieu/Sabine Basin will begin to see permanent mud accumulation and shoreline stabilization in about 75 years.

In the area of the large lakes in the northern half of the basin, a series of control structures and highway embankments have restricted natural drainage to the south. This effort is part of a project to transform the lakes into fresh water storage reservoirs serving inland rice-framing

RESPONSE 20.TERR1: We have made re-establishment of fluvial processes the first basin objective, with corresponding re-emphasis of critical long-term strategies to accomplish this objective (i.e., to bring sediment into the basin, page 15). Barrier island restoration has been identified as a critical short-term strategy in Terrebonne Basin (page 27).

RESPONSE 20.ATCH1: Comment noted.

RESPONSE 20.ATCH2: The text of the basin plan has been reworded to include the effects of Atchafalaya sediments on other basins.

RESPONSE 20.T/V1: The fact that wetlands and shorelines near sediment sources are experiencing natural restoration is acknowledged in the basin plan.

RESPONSE 20.T/V2: Utilization of water and sediment from the Atchafalaya, is a key strategy in this basin.

RESPONSE 20.MERM1: This is good information, but it is not definite that the mud deposits will continue to move westward at the rates indicated. We have added to the revised basin plan a discussion of the phenomenon of the mud deposits currently forming from Freshwater Bayou westward to near Rollover Bayou and Rockefeller Refuge.

interests. This has resulted in maintenance of unnaturally high water levels that have caused submergence and wave erosion along lake margins. The practice has also limited the supply of fresh water to marshes south the Chenier ridges and highway 82.

20. A long-term policy of water-level management is needed for this basin. The plan could incorporate major fresh water siphons and pump structures over highway 82 from the lakes, especially White Lake, into the coastal marshes. The object is to establish more natural condition in the lakes. Lowering water levels will also reduce marsh stress due to submergence and facilitate drainage. Fresh water input to the coastal marshes should reduce salinities significantly.

The proposed re-connection of Bayou Lafourche and increased discharge down the Atchafalaya River will cause a corresponding increase in the amount of sediment in the coastal mud stream heading west. Gulf shoreline progradation should be enhanced by the spread of mud flats along the coast. A potential restoration technique involves utilization of the pumping power of water level setup/setdown associated with cold front passage as a mechanism to force coastal mud stream waters into coastal marshes. This could become a significant sediment input source for the coastal marshes.

Calcasieu/Sabine Basin

20. C/S1 Long-term solutions would appear to be the construction of locks or water control structures at both Sabine and Calcasieu Passes. A detailed scientific feasibility study needs to be implemented. This effort should include computer modelling of the expected hurricane surges. The purpose would be to [illegible] if complete lock, were needed. It may also be beneficial to install a lock system on the GIWW to re-establish the historic separation of the Sabine and Calcasieu estuaries.

20. C/S2 Because the mud stream from the Atchafalaya is inhibiting shell production to the detriment of the beaches/shoreline, an alternative source should be determined. Mining of sediment/shell from the inner shelf and deposition along the beach would significantly reduce shoreline erosion.

20. C/S3 Dedicated mining of shelf sediments and their dispersal in coastal marshes through pipeline conveyance is a possible method in raisi[illegible] marsh elevations locally. Hydrologic manipulation, shoreline protection [illegible] natural), sediment trapping and [illegible] use of dredge material are restoration techniques applicable to this basin.

FUTURE DIRECTION

The following steps are required before scientifically sound long-term restoration strategies can be devised.

RESPONSE 20.MERM2: Please refer to Responses 11F.MERM2 and 11F.MERM3.

RESPONSE 20.C/S1: These locks were considered in Alternative 1 in the report. They would need to be considered further under some other authorization.

RESPONSE 20.C/S2: As we begin to understand more about this phenomenon, a strategy could be devised to alleviate the problem.

RESPONSE 20.C/S3: The area of loss is far from the shore and pumping sediment to these areas from the Gulf of Mexico would be very expensive. Furthermore, the highly saline material would probably kill existing vegetation. The other items listed, as well as others, are all a part of the basin plan.

20.A 1. Because these systems are so dynamic, it is necessary to determine within each basin exactly where the basin sits on the geomorphologic continuum. This can be determined from our present scientific understanding of delta development and abandonment. No new studies are required. The data are available.

20.B 2. Having a basic understanding of water movements within each basin is a fundamental requirement of the planning process. These elements are considered critical and the following questions need to be asked.

a. What are the existing water, sediments, and nutrient budgets?
b. What were the historic water and sediment pathways?

3. Basic restoration concepts must take into account the morphodynamic and ecological nature of each basin, as well as the primary sediment and water pathways.

20.D 4. We need to examine where projects on the list, as presently delineated in the basin-by-basin draft restoration plan, fit into the conceptual process model being suggested by a scientific community.

This approach to addressing wetland loss does not imply any additional major or extensive studies. To build a plan around the process model concept, it is necessary to undertake some limited hydrologic modelling and compare the results with existing data and then incorporate the synthesis into a process model framework. This strategy will ensure the data are synthesized into a document that focuses on the connectivity between basins and how current site-specific projects fit into a process-oriented plan.

The conceptual natural process model presented should be used to guide CWPPRA's comprehensive plan. Development of a rational plan, thus, will require answers to the following questions.

20.E 1. What are the dominant natural processes within the basin under discussion, and how have these been impacted by human activity? In other words, how have humans changed the fluvial/basinal processes relationships? Have we pushed the balance too much to one end or the other?

20.F 2. What long-term strategy is necessary to reinstate the natural processes? One goal should be reestablishing the natural fluvial/basinal processes ratio. This implies setting up a long-term natural process-oriented plan. In short, what large-scale projects can be initiated that will reestablish the natural processes?

20.G 3. What short-term projects can we emphasize that will be in support of our long-term strategies?

RESPONSE 20.A: In the newly revised basin plans, we have determined where each basin sits on the geomorphologic continuum.

RESPONSE 20.B: The existing water and sediment budget for the Mississippi River will be determined in a study to be commenced in the near future. Once this is done, it will be appropriate to determine water and sediment budgets within basins. The historic water and sediment pathways within basins are fairly well known already.

RESPONSE 20.C: Revised basin plans not only take into account the morphology and ecology of each basin as well as water and sediment pathways, but try to use natural processes to work with these factors to restore wetlands.

RESPONSE 20.D: Nearly all of the critical projects within each basin fit the conceptual process model. In choosing projects for future priority lists, the fit of a project to the conceptual model will likely be a factor in selection.

RESPONSE 20.E: This has been done in the revised basin plans.

RESPONSE 20.F: The long-term strategies in all of the basins near the Mississippi and Atchafalaya Rivers have the goal of reinstating natural fluvial processes.

RESPONSE 20.G: The critical short-term projects in each basin now support the long-term strategies.

CONCLUSIONS

1. A long-term management and restoration plan is needed for coastal Louisiana.

2. We applaud the efforts of the Task Force and its committees in assembling all of the elements necessary to put a plan together.

3. We encourage the Task Force to step beyond the small, short-term, site-specific projects and solutions and move into the large-scale, 'Big Picture Arena".

20.H 4. As academic representatives of a large portion of Louisiana's scientific community, we feel we can support the basis of the restoration plan as presented in the main document's solutions section.

5. We recommend the Task Force adopt the concept of a process solution model and that all future planning efforts utilize this process approach. The scientific community is willing to help to rewrite the problems and solutions section of the main document incorporating the Process Solution Model concept. Additionally, we would be willing to help basin captains and their teams use this model in future plan developments or refinements.

6. We request the Task Force develop a meaningful relationship with Louisiana's scientific community coordinated through the offices of Louisiana State University's Center for Coastal. Energy, and Environmental Resources. The contract that made this review possible—an applaudable effort by the Environmental Protection Agency at the 11th hour—defused a potentially disastrous situation for the whole CWPRA process. Unless the scientific community stands behind CWPPRA and its mtoration plans. CWPPRA's 20.I efforts will have a hard time being accepted by Congress and the general public. Until Colonel Michael Diffley requested the scientific community's input and encouraged this review, the process had only token scientific involvement. Individuals involved in the process, who happened to be scientists, did not have any support from the academic/scientific community or the institutions they represent. In conclusion, we look forward to the establishment of meaningful and sincere formal relationships between CWPRA, its basin captains, and Louisiana's scientific community.

RESPONSE 20.1: We have added the requested information in the Introduction of the Summary and in Section 1.3.

RESPONSE 20.2: We acknowledge that habitat quality and quantity has been the basis for estimating the benefits of proposbd projects. Using only acres of marsh created or protected for calculation of benefits was not used because it was acknowledged that all marshes are not equal in quality of habitat. The habitat quality calculations are heavily dependent on acres of emergent marsh vegetation and habitat quality and quantity is shown to increase as emergent vegetation increases. The last sentence of your comment deals with an entirely different subject. The piecemeal countermeasures referred to in your comment may be a reflection of the priority project lists. The priority project lists have, so far, contained relatively small, more diffuse projects that can help hold the line while larger, more comprehensive projects are studied and designed. The Restoration Plan has been rewritten to place added emphasis on the need for the large-scale restoration efforts that you support.

COMMENT TO
DRAFT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT
FOR
THE LOUISIANA COASTAL WETLANDS RESTORATION PLAN

Summary

The EIS has the nearly impossible task of predicting the impacts of the Louisiana Coastal Wetlands Restoration Plan even though the Plan is still a concept rather than a specific course of action (p19). The EIS mentions that the
20.1 impacts of the Plan cannot be determined at this time because they will depend on the specific projects that the Plan funds, but this should be more strongly stated.

Presently, there is no guarantee that the Plan will reduce marshloss even though it has tremendous potential to do so. This could be corrected if the Plan prioritized projects according to their relationship with large scale and long term processes that build, maintain, and destroy wetlands. Instead, the Plan
20.2 prioritizes projects according to expected gains in habitat quality. Project selection should be tied to the large scale processes operating in coastal Louisiana so that the Plan will not merely be a funding mechanism for piecemeal countermeasures. Without this, the tremendous potential of the plan is negated because much of what will be funded is not likely to be successful.

Given that the EIS cannot predict the impact of the Plan. It attempts to predict the impacts of the different types of projects likely to be funded by the Plan. This is a good idea and the EIS has a made a good start to that end, but
20.3 some of these sections are inadequate. A major and consistent problem is that the EIS assumes that individual projects types always achieve slated goals (p21). By this reasoning, there is no risk of wasting funds, the only limit to restoration is funding, and the negative impacts of different project types are always outweighed by positive benefits. In reality however, some project types

RESPONSE 20.1: We have added the requested information in the Introduction of the Summary and in Section 1.3.

RESPONSE 20.2: We acknowledge that habitat quality and quantity has been the basis for estimating the benefits of proposed projects. Using only acres of marsh created or protected for calculation of benefits was not used because it was acknowledged that all marshes are not equal in quality of habitat. The habitat quality calculations are heavily dependent on acres of emergent marsh vegetation and habitat quality and quantity is shown to increase as emergent vegetation increases. The last sentence of your comment deals with an entirely different subject. The piecemeal countermeasures referred to in your comment may be a reflection of the priority project lists. The priority project lists have, so far, contained relatively small, more diffuse projects that can help hold the line while larger, more comprehensive projects are studied and designed. The Restoration Plan has been rewritten to place added emphasis on the need for the large-scale restoration efforts that you support.

20.3 Cont. are more likely than other types to be effective, and the success of different projects of a given type is likely to vary with the dominant marsh creation and maintenance processes as well as the marshloss processes operating at the project site. This must be acknowledged in the EIS.

The bulk of this comment is suggestions to help overcome the current inadequacies of sections that describe the different project types. Although these are important, the large scale processes and time frames that different projects fit into, such as subsidence and the ever present delta lobe cycle, are equally important. We recognize that much effort has already gone into this

20.4 EIS, but it will not be complete until is looks at the Plan and different project types with these fundamental large scale and long time processes in mind. Likewise, the Plan will not be complete until project selection tied to large scale, long term processes that build, maintain, and destroy wetlands, as well as the human driven wetland destruction processes.

RESPONSE 20.3: Our expectation is that the sorting and prioritization processes employed by the Task Force will result in projects that will produce positive net wetland benefits. We have acknowledged in the referenced section that some project types more than others are able to address specific wetlands loss problems and restoration opportunities.

RESPONSE 20.4: We have added additional information about natural processes under the descriptions of freshwater diversion and sediment diversion. These are the only types of projects that we consider as attempts to mimic natural processes.

1. Purpose and Need for the Action

20.5 The EIS should more strongly present the possibility that without the Plan, protection and restoration efforts will continue to be small scale and lack integration. Much of the need for the Plan results from a need to address the large scale processes at work. Briefly. the marsh creation and maintenance processes of bay filling and spring flooding are not operating because of the nation's energy, flood protection, and transportation needs. Furthermore, the natural marsh decay processes of sediment starvation, subsidence, and salt-water intrusion associated with the delta lobe cycle continue (Coleman 1988) and have been greatly accelerated by the same needs that prevent natural marsh creation. Preventing further marsh loss given such large scale natural processes and human activity will require an integrated series of large scale and small scale projects such as those listed in this Plan rather than continued piecemeal and weakly coordinated efforts.

2 Alternatives

20.6 The estimation of no action is based on loss rates from the 1974 to 1990 data average. However, the loss rates are now less than those averages as the EIS notes. Furthermore, Dunbar et al. (1990) measured gross change rather than net change, which omits natural restoration. Thus, the loss rates are probably much lower now than stated, and will likely continue declining. This means that the need for protection is declining and that the Plan must instead emphasize creation. This also means that projects that protect marsh, as opposed to create marsh, were probably over-valued during the prioritization process.

20.7 The EIS points out that all possible alternatives are likely to be parts of the proposed Plan as well, but would not occur in a timely fashion or at the funding level that the Plan offers (p24). This accurately describes the current

RESPONSE 20.5: We have rearranged and modified Section 2.1 to emphasize that, without the CWPPRA, protection and restoration efforts would continue to be small-scale and lack integration. Additional information, extracted from your comment, has been added to Section 1.2.

RESPONSE 20.6: We are aware that new wetland loss data will soon be available from the USFWS. It is our understanding that the data is not yet finalized and has not been published.

Plan as nothing more than a funding mechanism for what will otherwise occur: greater funding of piece-meal efforts to counter wetland bss. The EIS should more clearly point out that despite the Plan's great potential, virtually no proposed projects were eliminated from it and it lacks a big enough frame of reference to sort these out. Presently, it offers little else than what would occur without it.

20.7 Cont.

If the Plan were modified (1) to acknowledge the overriding marsh creation. maintenance, and decay processes and (2) to include a mechanism that assures that only projects that take these large scale processes into account were funded, then it might be possible for the EIS to confidently state that the Plan will have a net positive impact. The Preliminary Evaluation Sheet, Screening Information Sheet, and Planning and Evaluation Subcommittee described in the Plan make no mention of methods to assure that only projects with a high likelihood of success will be funded. Instead, too much emphasis appears to be given to 'projected' benefits such as habitat quality rather than wetland area. The EIS should stress this point rather than meekly accept this flaw in the Plan.

20.8

232. Marsh Management

Marsh management will be implemented when (1) the overall (net) productivity of the managed areas can be increased and/or (2) the conversion of marsh to open water or in some cases a less desirable marsh type can be prevented, delayed, stopped, or reversed. or simply slowed to some meaningful degree (p50). There is nothing wrong with conversion of less desirable marsh to more desirable marsh, but why is it funded by the wetland protection act?

20.9

It should be pointed out that many projects will likely fail if they are not rigorously screened with large scale processes in mind; Cahoon and Groat *(1990)* noted that only one third of marsh management projects reversed marsh

20.10

RESPONSE 20.7: The information that you suggest including is to be found in Section 2.3.1.

RESPONSE 20.8: This comment is virtually the same as the first part of comment 20.3.

RESPONSE 20.9: The quote in your comment appeared on page 50 of the EIS, but was under Section 3.3.2.3, not Section 2.3.2. The referenced quote has been rewritten and now appears near the end of the 4th paragraph under Section 3.3.2.3. Section 302(6) of the CWPPRA defines a coastal wetlands restoration project as "any technically feasible activity to create, restore, protect, or enhance coastal wetlands...". We believe that projects to create more desirable habitats would be included in the "enhance" category.

20.10 Cont. loss. The fact that a landowner sincerely believes that marsh management will slow or reverse marsh loss is not sufficient to insure that only successful projects will be implemented.

20.11 It is not until page 52 that it is stated that how much is actually realized by a particular project is influenced by a number of factors. Some Important factors are then listed, but they do not include long term and large scale processes such as the delta lobe cycle of the river and associated subsidence and saltwater intrusion. This may be especially important in southeast Louisiana in part of the Barataria and Terrebonne Basins.

20.12 More attention needs to be paid to the impacts of passive marsh management because phase 2 of active management functions very similar to passive marsh management. Thus any negative effects of passive management, such as decreased mineral sedimentation (Reed 1992) will likely occur.

20.13 The EIS should acknowledge that marsh management to prevent or reverse marsh loss is a brand new science unlike marsh management to improve waterfowl habitat, which is well understood. Much of the increase in emergent vegetation resulting from drawdowns is annual vegetation that is temporarily established on dried pond bottoms. No new marsh is created because these areas revert to pond upon intentional or accidental reflooding. Exclusion of sediments may limit also plant productivity, because mineral sediments provide plant nutrients (Broome et al. 1975, DeLaune et al 1979, DeLaune and Pezeshki 1988).

20.14 Furthermore, traditional active management is not likely to promote marsh vertical accretion, which depends on peat production. Traditional active management keeps the marsh surface too drained to stimulate the vegetative growth process of vertical accretion, which depends on flooding to stimulate

RESPONSE 20.10: Even though your comment refers specifically to marsh management, the same argument could be made for many of the other project types. That is, without recognizing and evaluating the processes that are occurring, we cannot properly design and implement projects. We agree that matching the solution to the problem is vital to success. We expect that the proper match of solutions will be implemented through the integrated efforts of all those involved in the CWWPRA.

RESPONSE 20.11: Discussion of the delta lobe cycle of the river would be totally out of context in the referenced paragraph.

RESPONSE 20.12: Please refer to Response llC.16.

RESPONSE 20.13: Although you have singled out marsh management, other types of projects are "new science" which doesn't make them any more or less desirable of a tool for addressing marsh loss. We believe that the other issues in your comment are addressed under Section 3.3.2.3.

20.14 Cont. adventitious root production (see pg. 11 of this comment). Thus traditional marsh management, with it's emphasis on drawdowns, is not likely to be sustainable because of subsidence and global sea level rise, which is substantial in Louisiana (Penland and Ramsey 1990).

2.3.3. Hydrologic Restoratlon

20.15 The ability of this type of activity to have a positive impact should not be automatically accepted. Hydrologic Restoration will probably have a positive effect where it seeks to restore interrupted freshwater flow, such as restoring freshwater flow from White Lake to the southern marshes In the Mermentau Basin. It might reduce marsh loss where they correct human-made hydrologic alterations that accelerate marsh loss processes of flooding, saltwater Intrusion, and sediment starvation. But they are not likely to reduce marsh loss or create marsh where rapid subsidence causes marsh loss. Unfortunately, there seems to be no screening process that directs hydrologic restoration projects away from areas where rapid subsidence is the primary cause of marshloss. This is particularly troublesome because much of southeast Louisiana has been and will always be in a gradual but unstoppable cycle of marsh building, marsh death, and renewed marsh building. Projects that attempt to restore "historic" (p54) water flow patterns to such areas (p54) might be trying to make this cycle run in reverse. In such cases efforts to block canals, restrict tidal flow, and even reduce the size of natural bayous will not likely be effective. The only way to promote marshlands in those areas is to accelerate the marsh building processes of river flooding with freshwater and sediments. Thus, a net positive impact cannot be assured.

2.3.4. **Hydrologic** Management **of** Impoundments

20.16 Again, there is no screening mechanism to assure that impoundments are used only in slowly subsiding areas. Lacassine Pool at the Lacassine

RESPONSE 20.14: You have described root zone stimulation as a contributing factor in the accretion process. Others believe that active management can increase organic matter production (leaves, stems, and roots) and that the organic material is retained within the managed area enough to maintain and eventually increase soil elevation.

RESPONSE 20.15: We agree that net positive impacts cannot be assured for hydrologic restoration. There hasn't been one hydrologic restoration project constructed and monitored yet to determine if they are effective. We'll never know how effective they can be unless we carefully design, build, construct, and monitor some to determine their effects.

Your entire package of comments is very promotional of projects that would restore "natural processes" and very critical of those that would attempt to protect what is left of the wetlands. We believe that the best approach to wetland restoration is through the wise use of available sediments where feasible. However, we realize that moving sediments, either through gravity flows or by mechanical means can be very expensive. In the case of diversions, the potential for significant socioeconomic impacts can make projects impractical and politically unacceptable. Large-scale sediment diversions will take years to study, plan, design, and implement. We believe that protection projects are vital in critical areas while we investigate and plan large-scale projects for using sediment beneficially.

National Wildlife Refuge and some impoundments at Rockefeller State Wildlife Refuge are examples of successful impoundment. However, impoundment management will not likely be effective in southeast Louisiana even though they will likely be funded. Thus, a net positive impact cannot be assured. Even those projects that have been judged successful to date will have to be monitored because it may take several decades for any vertical accretion deficits to become noticeable.

20.16 Cont.

2.3.5. Sedlment Diversion.

Sediment diversions attempt to speed wetland creation and enhance marsh maintenance processes, and is the project type most likely to be successful. However, sediment diversions do not require a great deal of engineering to be effective as stated. That position fails to view sediment diversions as being temporary. Sediment diversions fill a bay, which creates marsh. The resulting marsh is too shallow to accommodate sufficient water flow to allow sediment delivery. Peat accumulation prolongs their life, but they eventually subside away. After some time. the resulting bay is deep enough to accommodate sufficient water flow again and the process can repeat. Attempts to force them into permanent landscape features are too expensive and a waste of limited resources, and should therefore not be undertaken. Larger scale diversions may require engineering to assure that they do not capture too much flow of the River, but they should not be engineered to make them permanent. Such large scale diversion are likely to have natural life spans of tens of decades to centuries, but they should not be viewed as permanent features.

20.17

2.3.6. Freshwater Diversion

The EIS should more clearly point out that freshwater diversions also work with the large scale processes of marsh maintenance. The EIS presents these projects types as benefiting primarily habitat quality. but in some areas

20.18

RESPONSE 20.16: You may have missed a very important point stated in the EIS about this type of project. We would only implement this type of project in areas where impoundment currently exists and the infrastructure (levees, pumps, culverts, and structures) controlling water levels in the impoundment are in need of upgrading or maintenance. No new areas are proposed for impoundment. In a classic example, like the impounded areas of the Bayou Sauvage National Wildlife Refuge, years of mismanagement have contributed to soil compaction and subsidence resulting in soil elevations considerably less than that necessary to support marsh vegetation in an open, tidal system. Reopening of the area to tidal flow would result in rapid loss of the freshwater wetland plant species within the impounded areas. These impoundments could never receive enough sediments from the tidal system to rebuild soil elevations to levels that would support emergent vegetation. The only approach for dealing with these areas is intensive water level management.

RESPONSE 20.17: We believe that you are wrong about sediment diversions not needing a great deal of engineering to be effective. True, the small-scale diversions in the active deltas of the Mississippi and Atchafalaya Rivers can be constructed easily with little more than a barge mounted dragline. It's a completely different story for sediment diversions that would have the real potential to significantly affect existing development, navigation, flood control systems, and various other socioeconomic resources.

We believe that you are also wrong about sediment diversions being temporary. In reference to geologic time they are certainly temporary, but any projects designed to operate for 50 to 100 years, as in the case of most large-scale civil works projects, are not considered temporary. Certainly, large-scale sediment diversions should be designed to operate for at least a period of 50 to 100 years; anything less would never justify the expense. Judicious periodic dredging of passes in the emerging deltas formed by sediment diversions to kept to the diversions operating would extend the lives of the projects and maximize benefits.

20.18 Cont. they are likely to reduce marsh loss rates as well. This is because sediment requirements are greater in the saltier marsh types (Templet and Meyer-Arendt 1988, Nyman et al. 1990). Thus, converting intermediate marsh to fresh marsh. brackish marsh to intermediate marsh, and salt marsh to brackish marsh should slow marsh loss rates in sediment starved marshes.

We have never heard of 'over-freshening' nor of it being related to marsh loss or it being negatively related to habitat quality (p38). In fact, the fresher marsh types generally have a higher quality for a greater variety of wildlife (Palmlsano 1972). Estuarine fisheries would also be positively affected because the more fresh habitat there is, the more estuarine habitat there is. If this is supposed to negative ecocomic impacts to holders of some oyster leases, then it should be clearly stated but not In this section. In this section it should be clearly stated that oyster populations will be positively affected.

20.19

237. Outfall Management

The EIS cites the dangers of waterlogging stress. but it should also point out that flowing fresh water has a much less severe impact on wetland plants than standing water (Jackson and Drew 1984). Thus the need for outfall management might not be as severe as anticipated. Their use sediment diversions is probably short sighted as noted earlier.

20.20

239. Barrler Island Restoratlon

This is an example of a project type that fits in well with the large scale processes at work in southeast Louisiana, and this point should be highlighted. This type of project might greatly slow marsh loss rates by slowing the gradual saltwater intrusion and increased tidal prism and flooding associated with the delta lobe cycle. They therefore reduce the need for marsh management and it's associated problems.

20.21

RESPONSE 20.18: We have added some of the information that you suggest.

RESPONSE 20.19: Over-freshening saline habitats won't necessarily cause adverse effects to the marsh vegetation, but would significantly affect the ability of many estuarine fish species to utilize the area. Fisheries harvest, both recreational and commercial, is one of the primary reasons why people want to protect wetlands and we cannot ignore the effect of restoration projects on fisheries resources. The blanket statement you make about "the more freshwater habitat there is, the more estuarine habitat there is" is simply not true for all cases. If freshwater input reaches all the way to the gulf shoreline, there would be no estuarine habitat available for estuarine-dependent species that are intolerant of fresh conditions and need shallow, protected areas during their early life stages.

RESPONSE 20.20: Outfall management of sediment diversions would be considerably different than outfall management of freshwater diversions. Conceptually, outfall management for sediment diversions would include sediment trapping devices and dredging of outflow passes to maximize deposition of sediments in favorable locations to prevent the diversions from being silted-in.

RESPONSE 20.21: A key word in your comment is the word "might". Fact is, we really don't know what barrier island restoration will do for mainland marshes, just like we don't know for sure what some other types of projects will do.

2.3.11. Shoreline Erosion Control with Vegetatlon

20.22 This section states that vegetative plantings may also be used in broken marsh or shallow open water areas within marshes to reestablish emergent vegetation. This is not likely to have a positive impact because whatever killed the pre-existing vegetation is likely to kill the planted vegetation as well. This therefore seems a great waste of resources.

2.3.1 2 Terracing

20.23 The impacts of Terracing seems more beneficial to estuarine habitat than emergent vegetation. While that is desirable, it has only minimal marsh creation potential. Wouldn't these project types be better suited to an estuarine management plan7

2.3.13. Sediment Trapplng

20.24 Sediment trapping is probably best in sediment rich areas such as bebw the Head of Passes and in the Atchafalaya and Wax Lake delta's. There are probably many other places where is it also beneficial. But it is probably harmful in sediment poor marsh brackish and intermediate marshes where It may steal sediments that would otherwise be destined for the marsh surface where it would nourish existing vegetation and promote peat formation, which counters submergence.

3 Affected Environment Environmental Effects

3.1. **Description** of Habitats

20.25 The description of coastal Louisiana provides an excellent snap-shot of these habitats. But it ignores several important and very relevant processes that drive the gradual change that these habitats are undergo. It is extremely .

RESPONSE 20.22: The object of revegetation efforts is to introduce plant species that did not occur in these areas when the marsh disappeared. Plant species more tolerant of flooding, like giant cutgrass, may be able to thrive in areas where soil elevation is insufficient to support the species that were there originally.

RESPONSE 20.23: Terracing is simply one of the tools that have been proposed for wetland restoration. It is unlikely that terracing will play a major role in the restoration of wetlands but could play a minor role in areas suitable for this type of project. Success of projects is not totally dependent on "acres of grass". Improvement of wetland habitats for dependent fish and wildlife resources is, in our opinion, a valid reason to implement restoration projects. It may help to read the definition of a coastal wetlands restoration project in Section 302(6) of the CWPPRA.

RESPONSE 20.24: We have included some of the suggestions in your comment.

important to describe the processes because the proposed projects types will be affected by these processes, and vice versa.

The most important process is the delta lobe cycle of the Mississippi River that creates and destroys marshes (Coleman 1988). Embedded within this cycle are the marsh creation and marsh destruction processes. Marsh creation and maintenance depends on bay filling that creates new marshes, and spring flooding that maintains marshes for quite some time before they subside away. The important marsh loss processes are sediment starvation, subsidence, and saltwater intrusion. So far, humans have turned off the creation processes and accelerated the marsh loss processes.

The role of saltwater intrusion needs to be clarified because it is a justification for many projects. Some saltwater intrusion in southeast Louisiana 20.25 Cont. is associated with the delta lobe cycle of the Mississippi River (Coleman 1988). This is often ignored because it is assumed to be too slow to be important, but that is debatable. Much saltwater intrusion occurred in the early part of this century because of navigation canals (Viosca 1927). Some likely continued as canals were constructed during the 1950's when oil exploration was and drilling was important. Many of these areas affected by saltwater intrusion were likely lost long ago (Viosca 1927). But today, there is likely little saltwater intrusion continuing, and Wiseman et al. (1990) found that tide gauge data indicated only localized areas affected by saltwater intrusion. A great number of projects that are designed to counter saltwater intrusion therefore seem unneeded, and will not likely provide any positive benefits. Furthermore, marsh management projects, as opposed to freshwater diversions, have a host of negative effects. In many circumstances only the negative benefits will be realized because there will be no positive benefits.

Shorter time scale marsh processes are also Important. The vegetative growth mechanism of marsh vertical accretion needs to be described fully because it is how marshes maintain elevation in New England (McCaffrey and Thomson 1980. Bricker-Urso 1989) as well as Louisiana (Hatton et al. 1983, DeLaune et al. 1988, Nyman et al. 1993). Briefly, peat production results from the production of adventitious roots just above the soil surface. Roots from one stern link up with roots from adjacent stems to form a tightly interwoven root network that forms the new, more elevated marsh surface. This process depends on flooding that induces anoxia and hypoxia in the plants. Although death often results in the deeper parts of the plant where anoxia develops. ethylene production stimulates adventitious root growth in the hypoxic portions at the soil surface (Hook 1984, Kozlowski and Pallardy 1984, Jackson 1985).

20.25 Cont. Mineral sediments are important to the vegetative growth process, and seem absolutely essential in brackish and saline marsh (Bricker-Urso 1989. Nyman et al 1993). Thus another important short time scale process is mineral sedimentation. The most important sedimentation process in Louisiana seems to be winter storms rather than tidal action (Reed 1989). This is because winter storms have two things that tidal flooding lacks: enough energy to suspend bay bottom sediments in flood water, and a long enough drying period that allows the newly deposited sediments to dry and consolidate so that they do not merely wash back into the bay with next high tide or rain.

34. Cumulative Impacts of Alternatives

The EIS predicts that there will be no cumulative adverse effects of the 20.26 Plan (p117). However, just because this is the goal does not make it so. The Plan has an equal chance of benefiting the resources as well as harming them because of a fundamental flaw in the Plan: there is no screening process to assure that the proper mix of projects are chosen to address the long term and

20.26 Cont. large scale processes that build, maintain, and destroy marsh in Loulsiana. This also highlights a fundamental flaw in the EIS: the EIS assumes that expected project goals will always be realized.

3.4.5. Barataria Basin.

20.27 a) The east/west system of levees that divides the basin in two are not likely to be effective because they seek to turn the clock back rather than acknowledge the ever present delta lobe cycle. b) Freshwater and sediment diversions into the basin combined with barrier island restoration provide the most effective means stimulate the marsh maintenance processes and slow the marsh destruction processes. c) Allowing freshwater fbw through the basin will require that the flood protection levees run parallel to Bayou Lafourche rather than perpendicular.

3.4.10. Calcasieu/Sabine Basin.

20.28 The perimeter protection plan seems an expensive way to combat the problems associated with ship channels. The perimeter protection plan is also likely to interfere with the storm induced sedimentation that provides nutrients for marsh plants. Why wasn't the underlying problem of the ship channels in basin addressed?

LITERATURE CITED

Bricker-Urso, S., S.W. Nixon, J.K. Cochran. D.J. Hirchberg, and C. Hunt. 1989. Accretion rates and sediment accumulation in Rhode Island salt marshes. Estuaries. 12:300-317.

Broome. S.W., W.W. Woodhouse, E.D. Seneca. Jr. 1975. The relationship of mineral nutrients to growth of *Spartina alterniflora* in North Carolina: I. Nutrient status of plants and soils in natural stands. Soil Sci. Soc. Am. Proc. 39:295-301.

RESPONSE 20.25: We have referenced the "Problems" and "Solutions" sections of the main report where the natural processes that you describe are discussed in detail. We feel there is no compelling reason to repeat it in the EIS.

RESPONSE 20.26: You have taken the statement made in the EIS out of context. The EIS states that the Restoration Plan will not add to the cumulative adverse effects that human development has had on the natural environment. Certainly, many of the projects that are included in the Restoration Plan would produce effects that would be considered adverse by some members of the public. These adverse effects may not be related to wetlands, but rather to socioeconomic resources.

Another comment you make is also misconstrued from what is presented in the EIS. We never say that project goals will always be realized. What we do say is that projects are expected to produce a net increase in emergent and/or submerged vegetation over conditions without a project. We fail to see what the problem is with that statement. If we don't expect to produce a net gain in wetland vegetation, then we shouldn't build a project. Its true that we can't guarantee positive results. But, if the consensus of the Task Force, based on input from all those associated with the process and the public, is to build a project based on anticipated benefits to wetlands, then we should be able to state that we anticipate beneficial effects.

RESPONSE 20.27:

a) The east/west hydrologic barrier is not part of the plan selected for the Barataria Basin.

b) The large number of critical short and long-term projects in the diversion and barrier island categories attest to the importance of such projects in the restoration plan for the Barataria Basin.

c) Prior to implementation, a feasibility study will be conducted for each diversion. Flood control will be an integral part of any study.

RESPONSE 20.28: The perimeter plan was selected as the recommended alternative at agency/public meetings in April and May of 1992 and at present is probably the most economical way of treating coastal erosion problems in the basin. Of course, other long-term alternatives remain a possibility after additional studies. The perimeter alternative should not significantly interfere with sediment introduced by storm tides as natural channels are left open, except for Kelso Bayou.

Cahoon, D. and C. Groat (eds.) 1990. A study of marsh management practices in coastal Louisiana, Vols. 1-4, Final Report submitted to Minerals Management Service, New Orleans, LA. Contract No. 14-12-0001-30410. OCS Study/MMS 90-0075.

Coleman, J.M. 1988. Dynamic changes and processes in the Mississippi River Delta. Geol. Soc. Am. Bull. 100:999-1015.

DeLaune, R.D., R.J. Buresh, and W.H. Patrick, Jr. 1979. Relationship of soil properties to standing crop biomass of *Spartina alterniflora* in a Louisiana Gulf coast marsh. Estuarine. Coastal, Marine Sci. 8:477-487.

DeLaune, R.D., C.J. Smith, W.H. Patrick, Jr. and H.H. Roberts. 1987. Rejuvenated marsh and bay-bottom accretion on the rapidly subsiding coastal plain of the U.S. Gulf Coast: a second-order effect of the emerging Atchafalaya Delta. Estuarine, Coastal, Shelf Sci. 25;381-389.

DeLaune, R.D., and S.R. Pezeshki. 1988. Relationship of mineral nutrients to growth of *Spartina alterniflora* in Louisiana salt marshes. Northeast Gulf Sci. 10: 195-204.

Dunbar, J.B., L.D. Britsch, and E.B. Kemp III. Land loss rates, Louisiana coastal plain. U.S. Army Engineer Waterways Experiment Station, Vicksburg. MS. Technical Report GL-90-2, Report 3.

Hatton, R.S., R.D. DeLaune, and W.H. Patrick. Jr. 1983. Sedimentation, accretion, and subsidence in marshes of Barataria Basin, Louislana. Limnol. Oceanogr. 28:494-502.

Hook, D.D. 1984. Adaptations to flooding with fresh water. pages 265-294 In T.T. Kozlowski (ed.). Flooding and Plant Growth. Academic Press. New York.

Jackson. M.B. 1985. Ethylene and responses of plants to soil waterlogging and submergence. Ann. Rev. Plant Physiol. 36:145-174.

Jackson, M.B. and M.C. Drew. 1984. Effects of flooding on growth and metabolism of herbaceous plants. In T.T. Kozlowski (ed.) Flooding and Plant Growth. Academic Press. New York.

Kozlowski, T.T., and S.G. Pallardy. 1984. Effects of flooding on water. carbohydrate. and mineral relations. pages 165-193 In T.T. Kozbwskl (ed.). Flooding and Plant Growth. Academic Press. New York.

McCaffrey, R.J.. and J. Thomson. 1980. A record of the accumulation of sediment and trace metals in a Connecticut salt marsh. Adv. Geophysics. 22: 165-236.

Nyman, J.A., R.D. DeLaune, and W.H. Patrick, Jr. 1990. Wetland soil formation in the rapidly subsiding Mississippi River Deltaic Plain: mineral and organic matter relationships. Est. Coastal Shelf Sci. 31:57-69.

Nyman, J.A., R.D. DeLaune, H.H. Roberts, and W.H. Patrick, Jr. 1993. Relationship between vegetation and soil formation in a rapidly submerging coastal marsh. Mar. Ecol. Prog. Ser. 96:269-279.

Palmisano, A.W. 1972. Habitat preference of waterfowl and fur animals in the northern Gulf Coast marshes. pages 163-190 In R.H. Chabreck (ed.) Proc. Coastal Marsh and Estuary Management Symposium. Louisiana State University, Div. Continuing Education. Baton Rouge LA.

Penland, S., and K.E. Ramsey. 1990. Relative sea level rise in Louisiana and the Gulf of Mexico: 1908-1988. J. Coastal Res. 6:323-342.

Reed, D.J. 1989. Patterns of sediment deposition in subsiding coastal marshes, Terrebonne Bay, Louisiana: the role of winter storms. Estuaries. 12:222-227.

Reed, D.J. 1992. Effect of weirs on sediment deposition in Louisiana coastal marshes. Environ. Manage. 16(1):55-65.

Templet, P.H., and K.J. Meyer-Arendt. 1988. Louisiana wetland loss: a regional water management approach to the problem. Environ. Manage. 12:181-192.

Wiseman, W.J., Jr., E.M. Swenson, and J. Power. Salinity trends in Louisiana estuaries. Estuaries. 13(3):265-271

Comments on the **Louisiana Coastal Wetlands Restoration** Plan

Gregory B. Miller
937 Sena Drive
Metairie, La 70005

1. Executive **Summary**

page **1**: Which projects are already under construction?

page 2: Is there a **monetary value** for 78 million visitor days? It should be included if available.

page 4: **"active** management of water levels' **does** this mean **marsh** management?

21. EX1 Page 5: **Was** the 1981 **Gagliano,** et al.. **study** used to **produce** the projections of the 2040 Louisiana coastline? If so then the map contained in Figure 1 (p. 5) should be adjusted using current land **loss** projections.

page 10: **line** 2, **use** "restoration" **not "restoring"**

page 11: "In summary..." should include reference to citizen involvement in **preparation** of the plan.

2. **Main** Report

page vi: indicates that Exhibit 1 contains President Bush's signing statement-the statement does not appear in the exhibit.

page 1: Which four projects have construction approval?

page 2: Preident Bush's signing statement is referred to but the statement **does** not appear in Exhibit **1**.
Under **Study Process,** paragraph 3 should include the **designees** from each federal **agency/department,** not just the designee **from** the USACOE.

page 7: Paragraph 3, examples of the **man induced** and natural components **of each** primary cause should be given- not just for subsidence.

page 8: Last paragraph, 'land **clearing..increased** sediment load" sentence should begin the paragraph.

page 9: To be consistant, "Exhibit Four" in paragraph 2 should read "Exhibit 4".
Paragraph 4, beginning "Pursuant to the..." should be indented.

page 11: Paragraph **1,** the efforts of scientists at Louisiana's and other universities should be mentioned here.

RESPONSE 21.EX1: The map is based on projections derived from actual losses from 1956 to 1983. The line of demarcation is a 50/50 line; that is, the region south of the line is greater than 50% water while the area north of the line is more than 50% land.

Paragraph 5, does the Chenier Plain extend beyond the Louisiana border into Texas? If so, this would be an opportunity to point out the importance or effects of Mississippi River influences outside of Louisiana.

21. MR1

page 12: Paragraph 2, The first use of RSLR should not be abbreviated. It should read "Relative Sea Level Rise (RSLR)".

Paragraph 3, is the 5390 feet average retreat per year? per 100 years? per storm? This is an impressive statistic that should be clarified.

21. MR2

page 13: Last paragraph. was the 1981 Gagliano, et al., study used to produce the projections of the 2040 Louisiana coastline? If so then the map contained in Figure 1 (Executive Summary. p. 5) should be adjusted to reflect current land loss projections.

page 15: Paragraph 1 under "Background Loss", "wave of failed agricultural reclamations" should be descibed in another section of the main report. It is referenced here, but the important history of the events are not detailed in the restoration plan.

page 18: "excess loss" should be defined

Paragraph 2, delete "Sequentially", use "Below we consider..."

21. MR3

Paragraph 3, to what extent are the Calcasieu Ship Channel and Port Arthur Canal currently used? Are wetland bennefitting alterations to the existing use patterns possible? In planning for restoration of this basin, was closing these waterways or attempting to reduce associated impacts considered? If so, a discussion of these considerations should be included in the plan or basin appendix. If not, consideration should be given to the potential for such actions.

Last paragraph, in sentence 1 "limited" should be "limit". In sentence 2, land loss is more complex than what? or where?

page 19: Under Deltaic Plain, paragraph 2, is the use of "Despite" meant to indicate that increased land losss should have occurred because of dredging for the MRGO and the GIWW? Because of the controversy surrounding the MRGO, this sentence should be clarified to avoid future misinterpretations.

Paragraph 3, oil field canal networks are dredged. The word growth is not appropriate in this context.

21. MR4

Why has Shell Island dissentegrated while the rest of the islands haven't? This should be explained.

page 21: Under "Sedimentation And...", paragraph 2, I think the citation (Nyman et al. 1990. 1991) is misplaced. Shouldn't it follow the first sentence instead of appearing within sentence 2?

page 24: This page is blank.

RESPONSE 21.MR1: The retreat figure is based on average changes over the past 100 years.

RESPONSE 21.MR2: Please refer to Response 21.EX1.

RESPONSE 21.MR3: The Calcasieu and Port Arthur Ship Channels are both heavily utilized. Wetland benefitting alterations to existing use patterns are possible, but would be very costly and would need to be considered under authorities other than the CWPPRA. Closing these waterways was not considered. Reduction of associated impacts was considered by Alternative 1, which included locks in Calcasieu and Sabine Rivers, but these would need to be considered under another authority.

RESPONSE 21.MR4: All barrier islands in the Barataria Basin are deteriorating. The reasons for differing rates and patterns of deterioration will be studied as plans are developed for the restoration of specific islands.

page 32: This page is blank.

page 35: North edges of maps. pictures, etc. should be oriented towards bindings and towards tops of pages.

page 36: North edges of maps, pictures, etc. should be oriented towards bindings and towards tops of pages.

page 40: North edges of maps, pictures, etc. should be oriented towards bindings and towards tops of pages.

page 52: This page is blank.

page 56: second paragraph, first sentence. should be plural "avert critical problems"

page 92: This page is blank.

21. MR5 page 97: Under Coastal Wetland Problems. oil well access and pipeline canal construction should be included as a cause of wetland loss.

page 98: This page is blank.

page 108: The Table listing Barataria Basin Projects contains a section of "Research and Development Proposals -this appears to be a valuable list that should be developed for each of the basins.
Project number BA-17a/17b is not shown on the basin map (Figure BA-4).

21. MR6 page 120: Project number XTE-65 is now a hydrologic restoration project under consideration for Priority Project List #3.

page 154: This page is blank.

21. MR7 page 181: Fisheries monitoring should be included as an 'Additional Variable or Substitution" for "Sediment Diversion", 'Vegetative Planting", and "Beneficial Use of Dredged Material" projects.

Exhibit 1:
page vi: "Text of the Act'. does not contain President Bush's signing statement as indicated in "List of Plates p. vi.".

Exhibit 4:
page 1: paragraph 5, "provided" instead of "provide".

page 10: paragraph 1, should list all of the species with Fisheries Management Plans.

RESPONSE 21.MR5: The plan does identify oil and gas access canals as a contributing cause of wetland loss. Future plan modifications may deal more with this issue.

RESPONSE 21.MR6: The XTE-65 project was originally designed, and remains, a marsh refurbishment project utilizing spray dredging. Thus it should be referred to as a marsh creation with dredged material project.

RESPONSE 21.MR7: Specific monitoring plans are to be developed for each project. The monitoring of fisheries impacts as well as sedimentation impacts has been a controversial matter, with cost as a factor preventing their inclusion in most cases.

page 10: paragraph 3, "recomments"?, use "recommends"

3. Environmental Impact Statement

21.1 Cover page: Why is marsh management listed first out of the thirteen project categories? Is it the most effective? Is it the most common strategy? This list should be logically organized (alphabetically, by most common project type, or largest expenditure category, etc.).

a)

b) Hydrologic management of impoundments? Is that marsh management?

c) Herbivore control? Where is this discussed further?

d) There is no date for the comment period.

21.2 EIS-2: Under Planning Constraints, the "availability of sound. verifiable data regarding specific projects...". This implies that there is sound verifiable data suporting the thirteen restoration project categories. There are questions about the benefits of some of these project categories.

21.3 EIS-3: 1. Under Alternatives, again marsh management is listed first out of the thirteen project categories. This list should be organized logically.

21.4 EIS-4/EIS-6: 1. Marsh management is listed first in Table 1. Why? The other parts of the Restoration Plan do not offer evidence that marsh management is the most effective restoration method.

21.5 EIS-12: 1. This page is blank

21.6 EIS-16: 1. This page is blank.

21.7 I S - 7 : 1. Under 1.1 Study Authority. Priority Project Lists are to be submitted each year for five years following the passage of the CWPPRA. This paragraph implies that lists will be submitted indefinitely.

21.8 2. Under 1.2 Background... The Chenier Plain includes portions of southeast Texas.

21.9 EIS-144: This page is blank.

21.10 General Comments.
The summary (EIS-I through EIS-3) of the EIS fails to address or acknowledge the potential social impacts associated with the Plan. This is important because these impacts may result in further environmental impacts. An example of this would be the displacement of fishermen from traditional harvesting areas. Displacement may result in redirected efforts that will burden fisheries in the new target areas or in areas already stressed by overfishing. This could also lead to increased user conflicts between commercial and recreational fishermen.

21. CONT Based on my own limited general knowledge and comments others have made at several of the public hearings, it would be beneficial to reevaluate the possibility of closing the Mississippi

RESPONSE 21.1a: Marsh management is listed first for two main reasons. First, there is more information available on the effects of marsh management than for any other project type. Second, we did not want to be accused of trying to "hide" marsh management among the other project types. The order in which projects are listed is not indicative of their respective levels of controversy or their likelihood of successfully restoring or preserving wetlands, although based on the comments we have received on the draft report, marsh management is, far and away, the most controversial restoration method.

RESPONSE 21.1b: The difference between the two projects types lies in the existing condition of the project area. Hydrologic management of impoundments would be used for existing impoundments where little to no tidal exchange presently occurs. Marsh management would be used for tidally influenced areas in need of the benefits that marsh management can offer. It is true that both types of projects are a form of management, but hydrologic management projects would not have fisheries access controversy surrounding them as would marsh management projects since the existing impoundments are isolated from estuarine fisheries access. Other controversies about marsh management also wouldn't apply to improved management of existing impoundments. We feel this difference in the level of effects is sufficient to separate the projects into two types.

RESPONSE 21.1c: Herbivore control is discussed in several places within the EIS. Please refer to the Table of Contents and Index. A discussion on herbivory has been added to the Problems section of the Main Report (page 31). In addition, several basin reports acknowledge the herbivory problem.

RESPONSE 21.1d: The date indicating the end of the comment period was inadvertently left off. The comment period for the draft report officially ended on August 30, 1993.

RESPONSE 21.2: We believe that all thirteen restoration project categories have the potential to benefit coastal wetlands. In the referenced paragraph, we discuss specific projects, not project types. What we are saying is simply that we don't know enough about many specific proposed projects to determine their benefits due to lack of details.

RESPONSE 21.3: Same as Response 21.1a.

RESPONSE 21.4: Same as Response 21.1a. In no way do we imply that marsh management is the most effective restoration method.

RESPONSE 21.5: The page was intentionally left blank to start the next section on the right side of the document.

RESPONSE 21.6: The page was intentionally left blank to start the next section on the right side of the document.

21. PONT1 Cont. River Gulf Outlet. Consideration should also be given to altering use of the outlet through speedlimits or the construction of locks. I believe this will result in greater public support for the Restoration Plan. Citizens and commercial fishermen in the Ponchartrain Basin appear to be mobilizing against the Bonnet Carre diversion and a concession on the MRGO may help dispell some concerns about other projects in the basin.

4. **Appendix A**

5. **Appendix B**

6. **Appendix C**

7. **Appendix D**

8. **Appendix E**

9. **Appendix F**
   Table of Contents-Big Island is misspelled "Bib Island"

10. **Appendix G**

11. **Appendix H**

12. **Appendix I**
    To what extent are the Calcasieu Ship Channel and Port Arthur Canal currently used? Are wetland bennefitting alterations to the existing use patterns possible? In planning for restoration of this basin, was closing these waterways or attempting to reduce associated impacts considered? If so. a discussion of these considerations should be included in the plan and basin appendix. If not, consideration should be given to the potential for such actions.

21. C/S1

RESPONSE 21.7: We have made your suggested change.

RESPONSE 21.8: We have included your suggestion.

RESPONSE 21.9: The page was intentionally left blank to start the next section on the right side of the document.

RESPONSE 21.10: We have added a sentence to capture your suggestion in the last paragraph of -Planning Constraints".

RESPONSE 21.PONT1: The rationale for not considering speed limits on the MRGO is found on page 20; for not considering locks on page 23; and for eliminating a gate on page 24 of the Pontchartrain Basin appendix.

RESPONSE 21.C/S1: Please refer to Response 21.MR3.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, Maryland 20910

Comment Package 22

AUG 16 1993

Mr. Richard Schroeder
Chief, Planning Division
U.S. Army Corps of Engineers, New Orleans District
P.O.Box 60267
New Orleans, Louisiana 70610-0267

Dear Mr. Schroeder:

Enclosed please find the National Marine Fisheries Service Restoration Center comments on the Draft Louisiana Coastal Wetlands Restoration Plan and Executive Summary. Ric Reubsamen of the NMFS Southeast Regional Office in Baton Rouge will be providing you with comments on the Environmental Impact Statement and the Basin Plans, and Tom Minello of the NMFS Southeast Fisheries Science Center in Galveston will be providing comments on the draft monitoring plan.

Thank you for this opportunity.

Sincerely,

Tim Osborn
NOAA/NMFS Restoration Center

Enclosure

Comments designated as 22: The following comments on the Executive Summary and Main Report submitted by the National Marine Fisheries Services' Restoration Center in Silver Spring, Maryland, are not responded to in detail. As stated earlier in this report, we have not responded to comments by Task Force agencies on the Executive Summary or Main Report. These comments have been resolved by work groups made up of Task Force agency representatives.

Comments on the Coastal Wetlands Planning, Protection, and Restoration Act Restoration Plan

EXECUTIVE SUMMARY

- The Executive Summary is going to be published under separate cover from the main report and appendices. This will require that the summary be comprehensive while brief in order to inform the reader of the important highlights of the Plan.
- Within the Section Introduction," the Act should be cited when quoted.
- Within the Section Introduction," the text should be revised since no CWPPRA funded restoration projects are under construction. In the absence of an escrow agreement, no project can move forward.
- Within the Section "Introduction," reference should be made to the involvement of citizen and environmental groups. A listing of the groups should be appended to the back of the summary.
- Under the Section 'The Resource," the summary should include a table similar to Table 6 showing the value of fisheries that are landed in coastal Louisiana.
- Within the Section "Strategy," the summary should describe the approach the Task Force used in developing the Plan. Specifically, the summary should include a desaiption of the hydrologic basins and how restoration strategies were built for each basin. A map of each basin should be included in the summary.
- Within the Section "Strategy," each strategy (creation, restoration, protection, etc.) should be expanded to provide a more thorough desaiption. Each strategy should include, where possible, an example (actual proposed project) to provide the reader with a better understanding of the types of coastal protection projects being proposed in the report
- Within the Section 'Strategy," each basin description should include a map of the basin and the number of projects currently funded by the Priority List process. Identification of the Basin Captain should be considered.
- Within the Section "Implementation," a description of the main report should be provided. This should provide the reader with understanding that the report discusses each hydrologic basin in the main report and in an appendix, the reason that an EIS has been written, and where other parts of the report (such as total restoration cost estimation) can be found.
- The Executive Summary refers to Plate 1, and accordingly, it should be included in the Summary. Additionally, since the basins are referred to by roman numeral designation as well as by name, both the names and numbers should appear on the map. Furthermore, the colon used on the map make it difficult to read. It should be simplified and bolder colon should be used.
- In both the main report and the Executive Summary, there should be consistency between the uses of "the CWPPRA" and "CWPPRA."

MAIN REPORT

- Page 14, Figure 2, the three graphs should all have the same x and y axes in order for the reader to easily determine the rate of land loss relative each graph (chenier vs. deltaic plain, etc.).
- Page 15, "Background Loss," should consider simplifying this section. The discussion of background vs. natural loss doesn't contribute much to the reader.
- Page 21, "Why the Plants are Dying," should include a dearer explanation that land loss and vegetative loss are related Consideration should be given to another title to this section such as "Vegetative and Land Loss."
- Page 25, 'The Value of Coastal Wetlands," this entire section should be moved forward in the report follow the introduction. The present placement interrupts the report as it describes the causes of land loss and moves into solutions/strategies.
- Pages 35, 37: These maps are very confusing. Either the land areas or the water areas should be shaded for contrast
- Page 57, Pontchartrain Basin Map, this map and other maps should provide a dearer boundary of the basin. Each basin map should also be induded in the executive summary of the report as well as a map identifying the critical and supporting projects.

TYPOGRAPHICAL ERRORS, ETC.

Executive Summary

Page	Paragraph	Comments
1	2	When listing the Task Force members, started out with commas and went to semi-colons in the middle. The commas are the correct punctuation.
2	2	Again, the use commas instead of semi-colons to separate the ideas.
3	5	Should merge this paragraph with the previous one.
3	6	First sentence should have commas: "Flood control works, comprising... nearly $12 billion, protect..."
9	1	Need to state what MRGO stands for.
10	last	Last sentence: "...the Task Force and its committees have: established..."

Main Report

Page	Paragraph	Comments
8	last	Last sentence. "bird foot" = ?
9	first	Need to explain what delta lobe construction.
11	1	Second sentence starting "Much new insight" is a run-on sentence."
12	2	Need to capitalize "Chenier Plain."
36	1	Define "cfs."
36	4	Explain the process of crevassing.
38	0	The "Mississippi and Atchafalaya Deltas" at the top of the page need to be justified to the left.
39	1	Remove the comma "...concepts is ambitious, and..."
41	1	State that "cy" = cubic yards.
41	1	In the third sentence, add a comma between "continue to be excavated, although..."

Comment Package 23

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

August 31, 1993 F/SE024/RR:jk
504/389-0508

Colonel Michael Diffley
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Diffley:

The National Marine Fisheries Service (NMFS) has received the June 1993 Draft Louisiana Coastal Wetlands Restoration Plan (Main Report) and appendices. These documents were prepared pursuant to the Coastal Wetlands Planning, Protection, and Restoration Act. Through the NMFS, the Department of Commerce contributed to the development and preparation of portions of the Main Report and appendices.

The NMFS has reviewed the subject documents. Broadly viewed the Main Report adequately describes Louisiana coastal wetland values, problems and potential solutions. However, the enclosures to this letter provide review comments addressing specific deficiencies and recommending appropriate revisions to the Main Report and appendices.

To facilitate future amendments to the restoration plan, development of priority project lists, and full implementation of the restoration plan the NMFS, under the authority of the Fish and Wildlife Coordination Act (FWCA), recommends the following:

1. Active coordination and consultation with the NMFS should be maintained throughout development of priority project lists, revisions to the restoration plan, and development and implementation of project monitoring plans.

2. An effective mechanism should be M o p e d to immediately initiate acquisition of information on and implementation of critical restoration projects.

3. Science advisors (e.g., university scientists) should assist in future priority list development and review of project monitoring results.

4. Each priority project list should include one a more d[illegible]tion projects, within Task Force established constraints, to evaluate new wetland restoration technologies a techniques.

5. Where feasible, hydrological/ecological d i n g efforts should be undertaken to enable prediction of cumulative, synergistic, and antagonistic effects of project implementation.

6. Marsh management projects utilizing levees and water control structures to control wetland hydrology and which are reasonably expected to adversely impact estuarine-dependent fisheries should not be implemented until such projects are refined through further study to ensure that they will provide long-term wetland benefits and maintain existing wetland functions.

Thank you for the opportunity to provide comments on the restoration plan and planning recommendations pursuant to the FWCA. Department of Commerce comments on the Programmatic Environmental Impact Statement are being provided separately.

Sincerely,

for Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

Enclosures

Comments designated as 23: The following comments on the Main Report and Basin Plans submitted by the National Marine Fisheries Services' Southest Regional Office in St. Petersburg, Florida are not responded to in detail. As stated earlier in this report, we have not responded to comments by Task Force agencies on the Main Report or Basin Plans. These comments have been resolved by work groups made up of Task Force agency representatives.

Comments of the National Marine Fisheries Service
Coastal Wetland Planning, Protection, and Restoration Act
Restoration Plan-Main Report and Appendices

MAIN REPORT

Page 9, paragraph 4. Because the state-administered Coastal Zone Management Program does not encompass the entire Louisiana coastal region, the acreage figures referenced in this paragraph and presented in Figure 1 represent only a portion of the permitted development. More complete data for the entire coastal region and including general and nationwide permits should be provided by the Regulatory Functions Branch of the New Orleans District. Also, Hartman et al. (1993) present a more thorough analysis of habitat loss through major development activities permitted by the Corps of Engineers. These data show that significant, permitted coastal wetland losses continue to occur in Louisiana. The apparent conflict between permitting such coastal habitat losses and expending state and federal funds to restore and protect wetlands should be addressed thoroughly.

Page 33, paragraph 3. This section should indicate that projects involving many of the identified methodologies have been included on priority project lists already submitted to Congress.

Page 44, paragraph 1. To depict the documented uncertainty of success of marsh management, line 6 should be revised to read, "variety of ways to attempt to promote the growth . . ."

Page 47, paragraph 1. The paragraph should be totally rewritten to address only socioeconomic considerations of marsh management. The characterization of hydrologic restoration projects as having impacts similar to marsh management projects is inaccurate. These two project types, in general, have entirely different designs, purposes, and impacts to the production of living marine resources. The last sentence is speculative, unsupported by historic fishery data, and should be deleted.

Page 175, paragraph 4. We find no reference in the CWPPRA that only two additional priority project lists (a total of five lists) are required. Clarification should be provided.

Page 179, paragraphs 1 and 2. The fishery monitoring plan (Exhibit 3) was developed by NMFS scientists with assistance from other federal and state agencies and academia. This part of the monitoring plan is peer-reviewed and adequately addresses monitoring problems for fishery resources. The Executive Summary of Exhibit 3 and this section of the Restoration Plan, however, do not accurately reflect the concerns raised in the fishery section. The peer-reviewed plan identifies projects that need monitoring for fishery productivity, including all marsh management, hydrological restoration, and freshwater diversion projects. The plan also recommends monitoring for selected projects involving sediment diversion, beneficial uses of dredged material, and sediment and nutrient trapping. However, paragraph 2 states that "For cases where project budgets are not able to cover the full protocol recommended in the document, the Monitoring Working Group (MWG) has determined, by project type, which variables are essential in judging project success or failure." On the basis of cost, therefore, the MWG decided that fishery monitoring was only essential for marsh management projects, and fisheries would be listed as a secondary variable for hydrological restoration and freshwater diversion projects. This decision, its rationale and justification, and possible alternatives should be fully discussed in the Restoration Plan. The relegation of fishery monitoring to only marsh management projects is inconsistent with the fishery monitoring plan.

While we have no objection to not monitoring fisheries for all freshwater diversion or hydrological restoration projects, there does not seem to be a clear mechanism for monitoring some of these projects when it appears necessary for documentation of functional success determinations or scientific reasons. In addition, the fishery monitoring plan recommended that selected projects involving sediment diversion, beneficial uses of dredged material, and sediment trapping should be monitored. Since only some freshwater diversion and hydrological restoration projects are now being considered for monitoring, these other project types should be similarly classified. That is, fisheries should be a designated secondary variable for sediment diversion, beneficial uses of dredged material, and sediment trapping projects. In part, the need for such an approach is addressed in Enclosure 2. Therefore, we recommend adding Fisheries as an Additional Variable in Table 11 (p. 181) for the Project Types of Sediment Diversion, Beneficial Uses of Dredged Material, and Sediment/Nutrient Trapping. Fishery monitoring should be given a very high priority at certain demonstration projects, and some of the first of these should be sediment diversion projects such as those in the Atchafalaya Delta and any terracing projects. This approach will enable NMFS to provide scientifically-based recommendations on other CWPPRA projects in the future. In addition, the reference to Table 11 should indicate that the table does not incorporate all recommendations of the various monitoring subgroups.

MONITORING PROGRAM
EXHIBIT 3
Page 5, paragraph 2.
The penultimate sentence states that "Sampling intensity and frequency depend on size of the project area, number of different habitats present, and cost." This implies that the need for a certain number or frequency of fishery samples is determined by their cost. Cost has nothing to do with the scientific need for samples, although it certainly controls whether they will be taken. This distinction should be made.

PONTCHARTRAIN BASIN
—— X A
COASTAL WETLANDS PROBLEMS
CRITICAL SALINITY PROBLEMS
Page 8, paragraph 5. To allow an assessment of the significance of the increase in salinity averages and peaks over the past 10 years, it would be helpful to include a figure or table depicting these increases.

PLAN FORMULATION
SELECTED PLAN
Page 18, Table 5. It should be footnoted that the "Displacement of Brownies & Specs" attributable to the operation of Bonnet Carré would occur on the average of one of every two years.

DETAILED DESCRIPTION OF PROJECTS IN SELECTED PLAN
PRESERVATION OF PONTCHARTRAIN/BORGNE LAND BRIDGE, SHORT TERM CRITICAL PROJECTS
PO-15 ALLIGATOR POINT MARSH RESTORATION
Problems and Opportunities.
Page 32, paragraph 4. This section should note that shoreline erosion also is occurring along Lake Borgne.

Key Issues.
Page 33, paragraph 3. To more accurately portray the key issue, we recommend revising the first sentence by deleting "slightly" and inserting after "organisms" the phrase into some portions of the project area.

Enclosure 1

BRETON SOUND BASIN
APPENDIX B
EXISTING PROJECTS
COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT (CWPPRA)
Caernarvon Outfall Management
Page 3. This discussion should refer to the existing Corps of Engineers' project on the previous page and identify overall benefits and those attributable to outfall management only. The acreage in this section does not correspond to that in the more lengthy discussion on pages 16 and 17.

PROBLEM IDENTIFICATION
FUTURE WITHOUT PROJECT CONDITIONS
BIOLOGICAL RESOURCES
Page 9. The first complete sentence should read: Populations of most biological resources will be maintained until the marsh-water interface reaches its maximum. As the interface declines, estuarine-dependent fishery populations arc expected to decline, regardless of the salinity regime.

PLAN FORMULATION
OVERVIEW OF BASIN STRATEGY
ALTERNATIVES CONSIDERED
Alternative B - Freshwater Diversion
Page 10. Delete the word "diversion" at the beginning of line 3 and substitute water over a longer period of time.

SELECTED PLAN
Page 10. Item (5) was *not* mentioned in any of the alternatives.

PROJECTS CONSIDERED
CRITICAL PROJECT(S)
CAERNARVON FRESHWATER DIVERSION -
Status.
Page 5. Add the following operational information: The structure was active a total of 255 days during 1992. The average discharge for the year was 714 cfs with a maximum peak flow of 5,777 cfs.

SUPPORTING PROJECTS, LONG TERM
PBS-5 FIDDLER POINT BARRIER ISLAND -
Physical Characteristics.
Page 24 and following project discussions. The heading "Physical Characteristics" replaced "Problems *and* Opportunities" *and* "Description" in the previous section. For clarity and consistency, the earlier headings should be used.

PBS-4 RELOCATION OF THE MISSISSIPPI RIVER INTO BRETON SOUND
Page 26. This project should be moved to the Critical, Long Tam Project section to correspond to the discussion in the Mississippi River Delta Basin (MRDB). We suggest inclusion of the following paragraph at the beginning of this project to refer the reader to the MRDB discussion: This project is discussed in greater detail in the Mississippi River Delta Basin (Appendix C) which contains the various options concerning distribution of flow of the Mississippi River. This project is summarized here because the Breton Sound Basin would be the most beneficial location for a major diversion.

Effects.
Page 27. The last tun, sentences should be deleted and the following substituted. However, the sediments would be reworked to form and/or nourish barrier islands.

MISSISSIPPI RIVER DELTA BASIN
APPENDIX C
INTRODUCTION
EXISTING PROJECTS
U.S. ARMY CORPS OF ENGINEERS
Page 1. The second paragraph states construction of a 45-foot deep channel was completed and planing is underway for the same depth and area. This should be corrected.

PLAN FORMULATION FOR THE BASIN
PLANNING OBJECTIVES
Page 14. This section should acknowledge the existing freshwater diversions, those authorized and proposed in other basins and the need to allocate the available water to areas of greatest benefit

PROJECTS CONSIDERED
CRITICAL PROJECTS, LONG TERM
PMR6 UNCONTROLLED DIVERSION OF THE MISSISSIPPI RIVER
Project Effects.
Page 23, paragraph 2. The last sentence should be rewritten or expanded to indicate a much more positive land building scenario in which sediment would continue to accrete beyond the 89,300 acres projected for 50-year life of this project. Delta formation and usage by aquatic and terrestrial organisms should be greater than the Atchafalaya River and Wax Lake Outlet deltas combined, since over twice their flows would be diverted into Breton Sound.

paragraph 3. It has been shown that newly planted marsh is not as productive as established marshes, however, we arc unaware of research on naturally accreting versus established marshes. This paragraph should be rewritten to eliminate the contradiction in the first tun, sentences. Also, if *not* changed by the above revision, the phrase "currently proliferating" should be replaced by abundance of in the first sentence and inhabiting on line 9.

BARATARIA BASIN
APPENDIX D
PROBLEM IDENTIFICATION
FUTURE WITHOUT-PROJECT CONDITIONS
BIOLOGICAL RESOURCES
Page 11, paragraph 4. The second sentence should indicate that loss of wetland habitat and hi& salinities can lead to lower biodiversity and productivity (e.g., fishery diversity and some macrophyte and algal production could increase).

PLAN FORMULATION
OVERVIEW OF BASIN STRATEGY
Page 13, paragraph 2 Item 1) is unclear. We recommend deletion of the phrase, "resulting in the expansion . . . marsh build-up."

KEY ISSUES IN PLANNING

Page 19, paragraph 1. The first sentence should indicate that management has the potential to restrict migrations and production of fish and shellfish.

NEAR TERM SUPPORTING PROJECTS
BA-14-Little Lake Marsh Management
Page 46, paragraph 1. Added to the Key Issues statement should be recognition of adverse impacts to estuarine-dependent fishery resources and the uncertainty of such projects in protecting or enhancing tidally-influenced coastal wetlands.

PBA-61-Southeast Lake Salvador Marsh Management
Page 69, paragraph 4. See previous comments on Little Lake Marsh Management.

LONG TERM SUPPORTING PROJECTS
BA11-Tiger/Red Pass Diversion and Outfall Management
Page 83, paragraph 3. See previous comments on Little Lake Marsh Management. Also, Table 5 should be revised to indicate marsh management (MM) as an additional project type.

TERREBONNE BASIN
XE
PLAN FORMULATION
ALTERNATIVES CONSIDERED
ALTERNATIVE C: PENCHANT SUBBASIN, HYDROLOGIC RESTORATION
Page 15, paragraph 8. This paragraph should indicate that placement of water control structures in natural bayous would significantly reduce the production of estuarine-dependent fishery resources.

Page 16, paragraph 1. This section should note that numerous plugs and water control structures have already been placed in waterways east of Four League Bay. In order to enhance flows of freshwater and sediments to interior marshes, consideration must be given to removal and alteration of such structures.

ALTERNATIVE E: TIMBALIER SUBBASIN, BARRIER ISLAND PROTECTION
Page 17, paragraph 2. The last sentence should be revised to read: "With total loss of the islands and subaqueous platforms, some 117,000 acres . . ."

KEY ISSUES IN PLANNING
ENVIRONMENTAL
Page 23, paragraph 4. This paragraph succinctly identifies marsh management conflicts. However, we recommend that it also reference the ongoing study of marsh management being conducted by the U.S. Fish and Wildlife Service and preparation of the programmatic environmental impact statement.

IMPLEMENTATION OF THE SELECTED BASIN PLAN
Table 6. Projects TE-8 and XTE-29 should be identified as marsh management projects.

CRITICAL PROJECTS
TE-10/XTE-49 Grand Bayou-GIWW Diversion/Cutoff Canal Plug
Page 51, paragraph 7. Based on final project design, adverse impacts to estuarine-dependent fisheries could be a Key Issue. This should be noted.

SUPPORTING PROJECTS, LONG-TERM

XTE-28 Shoreline Barrier-second line of defense.
Page 100. The discussion of this project should address the funding distribution between the wetland restoration and hurricane protection projects, potential adverse impacts to basin hydrology, and induced wetland development associated with hurricane levee construction.

TECHE/VERMILION BASIN
APPENDIX G
PROBLEM IDENTIFICATION
EXISTING CONDITIONS
GEOMORPHOLOGY AND HYDROLOGY
Page 3. The geomorphology and hydrology of the majority of the wetlands in this basin have been altered by the dredging of navigation and petroleum access canals and the construction of spoil banks and levees. Many areas that previously served as low salinity nursery areas for estuarine-dependent marine species are totally impounded by levees or under management using a combination of levees and water control structures. Much of the area under some form of hydrologic control is used for rice or crawfish culture, or is managed to improve waterfowl or alligator harvest. Potential impacts of the construction or levees or spoil banks and the impounding or management of wetlands include reduction in marine fishery production, artificial ponding of water, a reduced influx of sediment and nutrients, and lowered vertical accretion rates. In turn, these could be expected to adversely impact plant health and could lead to increased wetland loss rates. Topographic and hydrologic alteration, and their potential impacts, should be identified and discussed in this section.

BIOLOGICAL RESOURCES
Page 5, paragraph 2. The final sentence should read: The relatively low-salinity Teche/Vermilion Basin is a prime nursery and foraging area for blue crabs, penaeid shrimp, and many economically-important finfish species such as gulf menhaden, red drum, Atlantic croaker, spotted and sand seatrout, and southern flounder.

FUTURE WITHOUT-PROJECT CONDITIONS
ECONOMY
Page 8, paragraph 3. The final sentence should read: Because approximately 95% of the fishery landings in the northern Gulf of Mexico, by value, are composed of estuarine-dependent species, the eventual loss of wetlands and commensurate decrease in biological productivity will negatively impact commercial and recreational fisheries.

PLAN FORMULATION
OVERVIEW OF BASIN STRATEGY
Page 8, paragraph 6. The NMFS is unaware of any data which show reductions in wetland loss rates on Marsh Island as a result of hydrologic restoration projects. Conversely, Nyman et al. (1990) reported a slightly higher wetland loss rate in a weir-managed area on Marsh Island as compared to an unmanaged area and concluded that weirs did not affect marsh loss. The reference to reduced wetland loss rates should be deleted from the text or supporting information provided.

SELECTED PLAN
Page 9, paragraph 3. The first sentence should begin: A combination of offensive and defensive measures...

KEY ISSUES

Page 9, paragraph 5. The following sentence should be added after the first sentence in this paragraph: Marsh management projects would adversely impact marine fishery production on project wetlands to a significant degree, while poorly designed hydrologic restoration projects may impair fishery access and production.

PROJECTS CONSIDERED
SHORT TERM CRITICAL PROJECTS
PTV-19 LITTLE VERMILION BAY SEDIMENT TRAPPING
Problems and Opportunities.
Page 20, paragraph 1. This paragraph should be rewritten as follows:

> Little Vermilion Bay (located in the northwestern corner of Vermilion Bay) receives sediment from the Atchafalaya River via the GIWW and has shallowed 2 to 3 feet in the last 30 years. If the impacts of wave fetch could be reduced, and sediment deposition on the shallow waterbottoms of the bay increased, a large area of emergent marsh would become established where presently there is only open water. This would serve to trap additional sediment and halt shoreline retreat.

Description of Project Features.
Page 20, paragraph 2. This paragraph should be rewritten as follows:

> The project would entail the dredging of several distributary channels through shallow subaqueous channel banks in Little Vermilion Bay. The approximately 300,000 cubic yards of sediment that would result from the dredging of these channels would be placed to create 14,000 ft of emergent terraces at an average elevation of 2 ft above mean sea level. The creation of the distributary channels would improve sedimentation on the shallow waterbottoms adjacent to the channels and the emergent terraces will reduce the effects of wave erosion on vegetative establishment. Vegetative planting would be undertaken along the shores of Little Vermilion Bay and at the bases of all emergent terraces.

Estimated Costs
Page 20. A more correct estimate of the total cost of the PTV-19 project is $1,200,000.

Acres Benefitted
Page 20. It has been estimated by the Environmental Work Group that implementation of this project would immediately create 32 acres of emergent marsh, and that an additional 358 acres of marsh would be created by year 20. Approximately 304 acres of SAV would become established. The cost per benefitted acre would be approximately $1,300. This information should be used to replace the inaccurate data provided under this heading.

MERMENTAU BASIN
APPENDIX H
PROBLEM IDENTIFICATION
EXISTING CONDITIONS
GEOMORPHOLOGY AND HYDROLOGY
Lakes Subbasin.
Pages 4 and 5. Morton (1973) studied the aquatic fauna of White Lake after installation of the Schooner Bayou structure and concluded that the structure eliminated 50,000 acres of suitable estuarine habitat for numerous commercially and recreationally important estuarine-dependent species. Although published

data are absent, it is probable that the installation of the Catfish Point structure had a similar impact on marine fishery use of Grand Lake. This section should include a discussion of the impacts of the installation of the Catfish Point Control Structure and the Schooner Bayou Control Structure on the production of estuarine-dependent marine species in Grand and White Lakes.

Furthermore, a large percentage of the formerly tidally-influenced wetlands in this subbasin have been impounded or put under hydrologic management using water control structures and levees. The areal extent of this hydrologic alteration should be identified and potential impacts on marine fishery production discussed.

Chenier Subbasin.
Pages 5 and 7. Much of the wetlands of the subbasin have been hydrologically altered by the construction of levees and installation of water control structures. The areal extent of this alteration should be identified and potential impacts on marine fishery production discussed.

Figure 2, Page 6. There is a management levee along the eastern bank of the Mermentau River between Lower Mud Lake and the northern portion of Upper Mud Lake. This section of levee should be shown in this figure.

FISH AND WILDLIFE RESOURCES
Lakes Subbasin.
Page 8, lines 11 and 12. The sentence should be rewritten to state that saltwater intrusion is closely monitored to avoid impacts to rice agriculture.

Chenier Subbasin.
Page 8, paragraph 1. The third sentence in this paragraph should be rewritten as follows: In brackish marshes, structures are operated on a seasonal basis to allow, at reduced levels, ingress and egress of estuarine-dependent species.

IMPLEMENTATION OF SELECTED PLAN
Table 4, Page 18. All projects between XME-17 and XME-32 are missing from this table. Those missing projects should be included.

SUPPORTING PROJECTS, NEAR TERM
Lakes Subbasin, Hydrologic Restoration
Page 21. Projects PME-14, PME-15, XME-40, and XME-45 have been incorrectly identified as hydrologic restoration projects. These projects more closely fit the definition of marsh management projects as described in the restoration plan and EIS. These projects should be reclassified under the "Wetland Management" (i.e., marsh management) heading.

CALCASIEU/SABINE BASIN
APPENDIX I
INTRODUCTION
EXISTING PROJECTS

STATE OF LOUISIANA
Page 3, paragraph 2. The first sentence mistakenly implies that the breakwaters installed in the gulf would help protect the terracing project on the Sabine National Wildlife Refuge. Also, the meaning of

the second sentence is unclear. We recommend this paragraph be rewritten to better describe the projects implemented in this basin by agencies of the State of Louisiana.

COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT (CWPPRA)
Page 3, paragraph 5. Under Item 2, more information should be provided on the vegetative plantings demonstration project.

Pages 3 and 4. The East Mud Lake, Highway 384, and Brown Lake projects are marsh management projects. As such, it is misleading to use the term "Hydrologic Restoration" as part of their name. We recommend this term be replaced with Marsh Management.

PROBLEM IDENTIFICATION
EXISTING CONDITIONS
Page 4, paragraph 2. The word "extrapolation" should be replaced with petroleum extraction.

GEOMORPHOLOGY AND HYDROLOGY
Page 4, paragraph 4. The meaning of first sentence in this paragraph, which describes the deterioration of fresh marshes, is unclear and the sentence should be rewritten.

VEGETATION AND SOILS
Page 5, paragraph 3. The final sentence in this paragraph is confusing and should be reworded or deleted.

Page 5, paragraph 6. The word "graduating" should be replaced with grading.

Page 5, paragraph 7. The last sentence in this paragraph seems to suggest that excessive rainfall occurring in the basin during the last several years has demonstrated potentially effective wetland restoration techniques. The correlation between rainfall and effective wetland restoration is unclear. This conclusion should be stated more clearly and substantiated, or the final sentence in this paragraph should be deleted.

ECONOMY
Page 7, paragraph 3. In 1991, the port of Cameron was second among all ports in the United States in quantity of commercial fishery landings. Landings at this port have averaged 20 million dollars (dockside value) from 1989 through 1991. This information should be added to the paragraph.

FUTURE WITHOUT PROJECT CONDITIONS
LAND LOSS
Page 9, paragraph 2. It should be indicated that the increase in future wetland loss rates may represent a worst case scenario, since it appears that rates have been decreasing since 1974.
PLAN FORMULATION
KEY ISSUES
Page 13. We recommend the following issue be added to those identified in this section: Potential alteration of tidal amplitude and marsh drainage patterns in areas outside of structurally managed sites.

CRITICAL PROJECTS
GIWW-EAST CALCASIEU RIVER AREA
Page 24, PCS-25 HWY. 384 HYDROLOGIC RESTORATION. This is a marsh management project and should not be termed "hydrologic restoration." We suggest this term be replaced with marsh management.

CALCASIEU SHIP CHANNEL AREA
Page 25, XCS-51 MINE SHIP CHANNEL SPOIL AND PLUG WEST COVE CANAL. We recommend the physical characteristics description be changed to the following: Use spoil from an existing upland spoil disposal site to plug and create marsh in West Cove Canal and create marsh in the northeastern portion of West Cove adjacent to the Calcasieu Ship Channel.

CALCASIEU-SABINE RIVER BASIN AREA
Page 28, CS-9 BROWN LAKE HYDROLOGIC RESTORATION. This project does not fit the description of critical as agreed to by the basin team. We recommend it be moved to the SUPPORTING PROJECTS - NEAR TERM section. In addition, this is a marsh management project and should not be termed "hydrologic restoration." We suggest this term be replaced with marsh management.

SABINE REFUGE AREA
Page 31, XCS-47, 48I, J, & P REPLACE SABINE NWR HEADQUARTERS STRUCTURES. Depending on the structure design and operation, this project could improve or adversely impact marine fishery production on the Sabine National Wildlife Refuge. We recommend this potential impact be identified as a "KEY ISSUE."

Literature Cited

Hartman, RD. ,RN. Ruebsamen, P.M. Jones, and J.L. Koellen. 1993. The National Marine F i i Service Habitat Conservation efforts in Louisiana, 1980 through 1990. Marine Fisheries Review 54(3): 11-20.

Morton, T. 1973. The Ecological Effects of Water-Control Structures on an Estuarine Area, White Lake, Louisiana. MS. Thesis, University of Southwestern Louisiana, Lafayette, LA. 43 pp.

Nyman, J.A., R.H. Chabreck, and R.G Linscombe. 1990. Effects of weir management on marsh loss, Marsh Island, Louisiana, USA. Environmental Management 14(6): 809-814.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast F i e s Center
Galveston Laboratory
4700 Avenue U
Galveston, TX 77551

NOV 2 1992

October 20.1992

MEMORANDUM TO: Rickey Ruebsamen

FROM: Thomas Minello and Gordon Thayer

SUBJECT: Comments on CWPPRA Projects

We have some concerns regarding impacts of Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) projects on marine fishery production in coastal Louisiana. The CWPPRA is intended to provide for the long-term conservation" of coastal wetlands and dependent fish and wildlife populations (Section 303 a1 of Public Law 101-646). The extremely productive fisheries in coastal waters of the northern Gulf of Mexico are supported to a great extent by the large areas of intermediate. brackish and saline wetlands in Louisiana Relationships between coastal wetlands and fishery production are complex, however, and there exists the potential to develop CWPPRA projects with extensive detrimental effects on fishery resources. Although we understand that maintaining fishery production is only a partial goal of the Act, it is important that project selection and monitoring consider fisheries. The attached pages outline our concerns.

Attachment

cc: A. Mager
B. Brown
T. Osborn
A. Kemmerer

Enclosure 2

Effects of CWPPRA Projects on Fishery Resources

Types of Projects Selected

A i variety of proje e been proposed to protect and restore wetlands in coastal i Some proje will l l) im diate b ficial effe on wetland dependent fisheries, some will have 2) immediate detrimental effects (e.g., replacement of shallow open water with land) but long-term beneficial effects, while other projects are likely to cause 3) immediate and lasting reductions in fishery productivity of the area e support ct of pr jec in the first two categories. In addition. we support pro-active projects where wetlands are built. over reactive projects intended to slow wetland l

Projects that involve reduction of access to marine fishery organisms through impoundments and marsh management have negative impacts on production of marine fisheries (Herke et al. 1987. Rogers and Herke 1985. Herke a al. 1992. Rogers et al. . 1992ab). Thus. selection of these projects under the W P R A is disconcerting. .. especially when available evidence brings into question whether such projects even will achieve the goals of preventing wetland loss or reducing saltwater intrusion (Cowan et al. 1988. Turner and Cahoon 1988. Turner et al. 1988. Cahoon and Groat 1990, Turner 1990, Reed 1992). The incentives for supporting these projects are not always clear (improvement of duck hunting, retention of oil and aas rights, flood control). but what is clear is that these projects are not intended to increase marine fishery productivity. S j certainly should not be "sold" with the objective of im ɔ:c ries

The project review and selection process is partly responsible for this problem. Descriptions are developed by project proponents and are filled with undocumented statements-such as "the project will be beneficial to fish and wildlife'. An unbiased scientific review of the project goals and the likelihood of success is needed. Project statements should document use of the area by marine fishery organisms, and benefits gained by the project should be weighed against potential losses in fishery production. The Wetland Valuation Assessment (WVA) process was developed to provide such estimates and fill the need for an unbiased assessment of project impacts. Reasons for ignoring WVA results in the final selection of projects should be clearly stated.

Monitoring

Use of the WVA model for project selection is necessary due to time constraints and the lack of a better assessment tool. This model is mainly qualitative, however, and is based on speculative estimates and limited scientific information. The uncertainty involved in the model enforces the need for monitoring of project effects. Results of the WVA model should not be used to determine whether or not projects need monitoring.

At the request of the Monitoring Working Group, a fishery monitoring plan has been developed by NMFS scientists with assistance from other federal and state agencies and academia (Minello et al. 1992). This peer-reviewed plan outlines acceptable methods for monitoring impacts of projects on fishery resources. In addition. the plan identifies projects that need monitoring for fishery productivity. These projects include all marsh management. hydrological restoration, and freshwater diversion projects. The plan also recommends monitoring for selected projects involving sediment diversion. beneficial uses of dredged material. and sediment and nutrient trapping.

The fishery monitoring plan was developed to minimize monitoring costs, even to the point of severely restricting temporal replication of sampling. We understand that monitoring resources are limited, but fishery monitoring is essential to determine impacts on coastal fishery resources. Projects known to have a great potential for restricting ingress and egress and reducing fishery use of an area (all marsh management and some hydrological restoration projects) need to be monitored to document any fishery losses. Because-marsh management projects are commonly and persistently proposed and implemented, operational characteristics that are least damaging to fishery production need to be identified and promoted for future projects.

The effects of many other proposed CWPPRA projects on fishery production in both the long-term and short-term are difficult to predict. Those project types on which we have little information should be developed a . demonstration projects and monitored extensively (including for fisheries). Specifically, we believe monitoring effects on fishery resources should be given a very high priority at demonstration projects on shallow delta habitat creation (e.g., Atchafalaya Delta building project). terracing. and freshwater diversion. Such an approach will enable NMFS to provide scientifically-based recommendations on CWPPRA projects in the future.

The cost of fishery monitoring has often been used as an excuse to eliminate this type of monitoring from consideration. Based on the fishery monitoring plan, however. scientifically-sound assessments of effects on fishery resources can be conducted for about $75 k per year per project (500 samples). The first one or two years following project implementation will require monitoring. Over the remaining portion of the 20 year project l ɪ ɪ ever, monitoring during one or two additional years should be sufficient. Thus, for $150 to $300 k. valuable information on s of ti projecu can be obtained. This kind of information is critical for making mid-course project modifications and for making decisions on fumre projects. Considering the size of the fishery resource involved. this expense does not seem unreasonable.

Literature Cited

Cahoon. D. R and C. G. Groat 1990. A study of marsh management practice in coastal Louisiana Report Nos. MMS 90-0075-8 to the Minerals Management Service.

Cowm, J. H.. R. E. Turner and D. R. Cahoon 1988. Marsh management plans in practice: Do they work in coastal Louisiana. USA? Environ. Manage. 12: 37-53.

Herke. W. H. E. E. Knudsen. P. A. Knudsen and B. D. Rogers 1987. Effects of semi-impoundment on fish and crustacean nursery use: evaluation of a "solution". p. 2562-76 In Coastal Zone '87. ASCE, Seattle.

Herke. W. H.. E. E. Knudsen. P. A. Knudsen and B. D. Rogers 1992. Effects of semi-impoundment of Louisiana marsh on fish and crustacean nursery use arid export. N. Amer. J. Fish. Manag. 12: 151-160.

Minello, T. J.. R Boe, G. Bodin, W. McQuiddy, M. Nichols. and J. Pitre. 1992. Assessment of CWPPRA project impacts on fishery resources. Submitted to the Fishery Monitoring Subgroup. 16 p.

Reed. D. 1.1992. Effect of weirs on sediment deposition in Louisiana coastal marshes. Environmental Management 16: 55-65.

Rogers. B. D. and W. H. Herke 1985. Estuarine-dependent fish and crustacean movements and wier management. p. 201-19 In Bryan. C. F., P. J. Zwank and R. H. Chabreck (ed.). Fourth coastal marsh and estuarine management symposium. LSU, Baton Rouge.

Rogers. B. D. W. H. Herke and E. E. Knudsen 1992 Effects of three different water-control structures on the movements and standing stocks of coastal fishes and macrocrustaceans. Wetlands 12: 106-120.

Rogers. D. B. Rogers and W. Herke 1992. Effects of marsh management plan on fishery communities in coastal Louisiana. Wetlands 12: 53-62.

Turner. R E. 1990. Managing wetlands in coastal Louisiana for plants. waterfowl, f i h and other animals. Bull. Ecol. 21: 21-24.

Turner, R E. and D. R Cahoon (Editors) 1988. Causes of wetland loss in the coastal central Gulf of Mexico, Final report submitted to Minerals Management Service. New Orleans. LA Contract No. 14-12-0001-30252 OCS Study/MMs 87-0119.32 p.

Turner, R. J. Day and J. Gosselink 1988. Weirs and their effects in coastal Louisiana wetlands.(exclusive of fisheries). p. 378 In Duffy. W. and Clark, D (ed.). Marsh Management in Coastal Louisiana: Effects and Issues-Proceedings of a Symposium. U.S. Fiih and Wildlife Service and Louisiana Department of Natural Resources.. Baton Rouge.

Comment Package 24

UNITED STATES DEPARTMENT OF
National Oceanic and Atmospheric Administration
Office of the Chief Scientist
Washington, D.C. 20230

August 17, 1993

Mr. Richard E. Boe
U.S. Army Corps of Engineers
CELMN-PD-RS, P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Boe:

Enclosed are comments on the Draft Environmental Impact Statement for the Louisiana Coastal Wetlands Restoration Plan. We hope our comments will assist you. Thank you for giving us an opportunity to review the document.

Sincerely,

Donna Whiting
(for) David Cottingham
Director
Ecology and Conservation Office

Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL FISHERIES
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, Florida 33702

August 13, 1993

Colonel Michael Diffley
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
P.O. Box 60267
New Orleans; Louisiana 70160-0267

Dear Colonel Diffley:

The National Marine Fisheries Service (NMFS) has received the June 1993 draft programmatic environmental impact statement (EIS) for the Louisiana Coastal Wetlands Restoration Plan. The programmatic EIS provides an overview of plans and effects of alternatives (project types) proposed in the Restoration Plan prepared in response to the Coastal Wetland Planning, Protection, and Restoration Act of 1990 (CWPPRA). We have reviewed the document and offer the following comments for your consideration.

General Comments

24.1 While most of the programmatic EIS adequately analyzes and discusses the effects of various types of projects considered in the Restoration Plan, we find that it presents a subjective, inaccurate, and misleading review and assessment of marsh management activities. The document portrays marsh management, using levees and water control structures, as a proven and effective technique for addressing coastal marsh loss when, in fact, benefits of such projects to estuarine wetlands are speculative and severe adverse impacts to commercially and recreationally valuable marine fishery resources are well documented in the scientific literature. Long-term and cumulative impacts to wetlands and marine fishery resources are crucial issues, but are not addressed.

The most pertinent scientific study of marsh management in coastal Louisiana (Cahoon and Groat 1990) has been largely ignored, presumably because some of its findings appear to question the efficacy of marsh management in preventing or reversing wetland loss. For example, mapping data (16 paired sites) suggest that passive management is unsuccessful in preventing marsh loss and active management can have negative, positive, or have no affect on marsh stability. That report also finds that actively managed sites had lower sediment accretion, bulk soil density, soil mineral content, and organic matter accumulation. An objective reporting of the findings of this study in the programmatic EIS is essential.

RESPONSE 24.1: We have substantially revised our discussions on the effects of marsh management. We believe the revised discussions fairly and accurately describe the current knowledge of management's effects.

The study of 16 paired sites which was included in the Cahoon and Groat report has been cited in the document as Sweeney et al. (1990). Much of the information that you suggest in this comment has been added to the report.

Specific Comments

SUMMARY
Introduction

24.2 Page EIS-1, paragraph 2. This paragraph should indicate that the third Priority Project List will be submitted to Congress along with the Restoration Plan and was developed from projects discussed in the Plan.

Alternatives.

24.3 Page EIS-3, paragraph 1. Project types apparently are listed in random order with marsh management first. In order to not convey the idea that marsh management is the most important project type, we suggest that, here and in the remainder of the document, the 13 project types be listed and discussed in alphabetical order.

24.4 Page EIS-4, Table 1. The summary of effects of marsh management on coastal wetlands should indicate that active management also can have mixed effects on land loss. As reported in Sweeney et al. (1990), marsh coverage in 60 percent of the actively managed marshes investigated through mapping either decreased or did not change as compared to unmanaged control areas.

24.5 Marsh management impacts to fishery resources should indicate that reduced access results in significant reductions in productivity of commercially and recreationally important marine fisheries. Regarding resident species, it only should be indicated that management may provide benefits.

24.6 Effects to threatened and endangered species of marsh management operations should reflect the discussion of sea turtle impacts presented in section 3.3.7.3.

24.7 Page EIS-6, Table 1. The impacts of marsh management to navigation and other forms of transportation incorrectly suggest that water control structures are "commonly fitted with boat bays." Boat bays typically may be used in hydrologic restoration-type projects but seldom are incorporated in management projects.

24.8 Under the marsh management heading, the summary of flood protection should address the implications of reduced wetland sheet flow and attendant increases in channelized flow and tidal amplitude. The summary of recreational opportunities also should address reduced public access and reduced production and harvest of most sought after estuarine-dependent species.

RESPONSE 24.2: We have included your recommendation.

RESPONSE 24.3: Please refer to Response 21.1a

RESPONSE 24.4: We have modified the table to be, less definitive about the beneficial effects of active management on marsh vegetation.

RESPONSE 24.5: We have added a statement under socioeconomic items about the effect of management on estuarine fisheries. We have revised our statement about resident species to be less definitive.

RESPONSE 24.6: We have added a statement about your concerns.

RESPONSE 24.7: We have modified the table as you have suggested.

RESPONSE 24.8: We believe that the low-level natural ridges, levees, and spoil banks that delineate the vast majority of marsh management projects would normally be overtopped before flood protection systems for developed areas would be threatened. Reduced public access is addressed under the heading of Property Ownership and Values.

1. PURPOSE AND NEED
1.2. BACKGROUND ON COASTAL WETLAND LOSS IN LOUISIANA

24.9 Page EIS-18, line 3. The first complete sentence should be revised to emphasize that sediment is being deposited in the Gulf of Mexico. We suggest " . . . sediment transported by the river is being deposited in the Gulf of Mexico in areas too deep to create land."

2. ALTERNATIVES
2.3. ALTERNATIVES CONSIDERED IN DETAIL
2.3.2. Marsh Management

24.10 Page EIS-27, paragraph 3. The last sentence should be revised to highlight the great uncertainty involved in marsh management. We suggest it be revised to read, "By attempting to selectively modify attributes . . . managers try to induce . . .."

24.11 Page EIS-27, paragraph 4. This section should indicate that new spoil banks are constructed on marsh or in shallow, open water where elevations of the management area periphery are insufficient to block tidal flows.

24.12 Page EIS-27, paragraph 5. Because of varying biological responses, the second sentence should indicate that structures are used to attempt to produce desired results.

24.13 Page EIS-27, paragraph 6. In the sentence continuing on page EIS-28, the term "fisheries production" should be deleted and the word mariculture substituted in its place. We are aware of no marsh management plan in Louisiana, planned or implemented, which would benefit fisheries production other than for a selected species, i.e., mariculture.

24.14 Page EIS-28, line 5. This sentence should indicate that management is one of several alternative ways of attempting to deal with marsh loss but scientifically documented studies indicate that success apparently is limited.

2.3.2.1. passive Management.

24.15 Page EIS-28, paragraph 3. This section should thoroughly discuss the findings of Sweeney et al. (1990) regarding the poor success of passive management in preventing or reducing marsh loss in coastal Louisiana. In some cases, passive management appeared to cause an increase in wetland loss rate, possibly because of excessive ponding and toxic soil conditions. To avoid potential confusion, the word "dependent" should be deleted from line 5. Documentation of success and a discussion of conditions necessary to provide sediment and nutrient enrichments to passively managed areas should be provided.

RESPONSE 24.9: We have included your suggestion.

RESPONSE 24.10: We have incorporated your suggestion.

RESPONSE 24.11: We have included a statement to the same effect as your suggestion.

RESPONSE 24.12: We have removed the phrase that you suggested modifying.

RESPONSE 24.13: During our discussion with you, we agreed to leave in "fisheries production" but linked it with practices more common to South Carolina.

RESPONSE 24.14: We have modified our statement in an attempt to make it less objectionable.

RESPONSE 24.15: Discussions of effects have been moved to Section 3. Reference to Sweeney et al. (1990) has been incorporated into the EIS in Section 3.3.2.3.

24.16 Page EIS-28, paragraph 5. The suggestion in the second sentence that only "some types of passive structures" can restrict movement of estuarine-dependent fisheries is incorrect. We are unaware of any scientific studies which have documented structure designs which did not reduce fishery movements. We recommend this sentence be rewritten as follows: "One effect is that all types of passive structures restrict the free movement of migratory estuarine-dependent fish species." The third sentence should indicate that passive structures affect sediment transport only to the degree that water can flow over or through a structure as controlled by tidal events. The overriding effect of passive management is a reduction in tidal flux and sediment accretion (Boumans and Day 1990, Cahoon 1990, and Reed 1992).

24.17 Page EIS-28, paragraph 6. The inference that structures can be selected to eliminate all adverse impacts is incorrect. The word "necessarily" should be deleted.

24.18 Page EIS-29, paragraph 1. This section should note that hydrologic restoration projects differ greatly from passive management in that most involve minimal disruption of natural channels and do not include levees which prevent sheet flow of water and organism movement over the marsh surface from adjacent water bodies.

2.3.2.1.1. Fixed-crest weirs.

24.19 Page EIS-29, paragraph 5. This section should reference the intensive, long-term fishery study by Herke et al. (1987) who found that annual production of estuarine-dependent fisheries was reduced by 50 percent to 93 percent.

2.3.2.1.2. Slotted Weirs.

24.20 Page EIS-30. This section should note that slotted weirs, while not as intrusive as fixed crest weirs, still significantly reduce estuarine-dependent fishery production. The last paragraph is speculative and appears to have been included only to minimize the significance of adverse weir impacts. It should be deleted unless supported by credible scientific data.

2.3.2.2. Active Management.

24.21 Page EIS-31, paragraph 2. To avoid confusion, line 11 should refer to resident fish species.

24.22 Page EIS-31, paragraph 3. In line 1, delete the term "sufficient" and insert in its place to attempt. This section also should thoroughly review the photo-documentation of wetland response to active marsh management presented by Sweeney et al. (1990). The responses enumerated in this paragraph often are unmet in Louisiana coastal marshes.

RESPONSE 24.16: We have rephrased the portion of this paragraph regarding fisheries to reflect your comments and have moved it to Section 3.3.6.3. We have also rephrased and moved the other portion dealing with sediments to Section 3.3.2.3.

RESPONSE 24.17: This paragraph has been restructured and moved to appropriate sections within Section 3 since it dealt with effects of management. The sentence referenced in your comment has been deleted, but your suggestion is captured elsewhere.

RESPONSE 24.18: Your suggestion has been added to the report.

RESPONSE 24.19: All mention of effects, which is the thrust of your comment, has been moved to Section 3. Herke et al. (1987) is referenced in Section 3.3.6.3.

RESPONSE 24.20: This paragraph has been reworded and now appears under Section 3.3.2.3.

RESPONSE 24.21: The phrase you reference has been incorporated into two sentences under Section 3.3.6.3. where your suggested modification has been made.

RESPONSE 24.22: We have amended the sentence to reflect a degree of uncertainty as your comment suggests. Sweeney et al. (1990) has been referenced in Section 3.3.2.3.

24.23 Page EIS-31, paragraph 5. Phase 3 operation (freshwater and sediment input) has had very limited use and, in general, its purported benefits are undocumented.

24.24 Page EIS-32, lines 1-17. The sentence beginning on line 9 should be revised to read, "Achieving the desired responses is attempted by setting the crests . . . at 1 foot or occasionally 2 feet below . . .." The last sentence is only partly correct and should include the concern that, 1) short-term management impacts are variable and can be negative and 2) long-term impacts generally are unknown. This paragraph also should discuss the frequently noted increase in soil and water salinities during drawdown periods, especially during periods of low rainfall.

24.25 Page EIS-32, paragraph 1. This paragraph ignores the great uncertainty in achieving desired wetland responses by management and the potential for negative wetland impacts. This paragraph, as with others in this section, should be rewritten to clearly indicate the speculative nature of active management, even under ideal conditions, in obtaining desired short or long-term marsh responses. Most often, conditions for successful management are not ideal and are negatively affected by rainfall patterns, drought, subsidence, sea level rise, storm events, prolonged low or high tides, etc.

24.26 Page EIS-32, paragraph 2. This paragraph is not correct. As noted previously, the NMFS is concerned about lost fishery production and potential adverse impacts to coastal wetlands.

24.27 Page 32, paragraph 3. This section (continues on page EIS-33) should indicate that Phase 3 operations and the effects of such operations largely are untested and that situations where Phase 3 operation could be beneficial are uncommon. Data are not available to predict operational effects. Unless the sentence is changed, the last word on the page should be corrected to "is."

24.28 'PageEIS-33, paragraph 3. Information presented in this paragraph is very misleading. The study of marsh management in Louisiana, edited by Cahoon and Groat (1990) was very intensive but of a shorter duration than the South Carolina study. Nevertheless, the Louisiana study provided valuable insight into the impacts of marsh management. Results of that study should be much more thoroughly discussed with particular emphasis on nutrient/sediment flux, sedimentation, plant health, and habitat trends documented through mapping.

2.3.3. Hydrologic Restoration.

24.29 Page EIS-33, paragraph 4. Depending on the type of structures used and their location, hydrologic restoration projects may reduce the use of a project area by migratory, estuarine-dependent fishery species.

RESPONSE 24.23: We have indicated the limited use of Phase 3 operations at the end of the paragraph describing Phase 3 in response to your comment.

RESPONSE 24.24: The sentence on line 9 has been revised as per our discussions. We have moved all discussion of impacts to appropriate sections within Section 3.

RESPONSE 24.25: We have added-in some of the uncertainties of marsh management. Discussions of effects have been moved to Section 3.

RESPONSE 24.26: Your representatives have agreed to delete this paragraph.

RESPONSE 24.27: See comment 24.24.

RESPONSE 24.28: Numerous references to the comprehensive Cahoon and Groat (1990) report appear in Section 3 of the report.

RESPONSE 24.29: Your suggestion has been included under Section 3.3.6.4.

3. AFFECTED ENVIRONMENT/ENVIRONMENTAL EPPECTS
33. BIGNIPICANT RESOURCES AND EFFECTS OF ALTERATIONS
3.3.1. Introduction.

24.30 Page EIS-49, paragraph 2. This paragraph should indicate the anticipated completion date of the programmatic impact statement for marsh management, how future CWPPRA and non-CWPPRA applications will be processed, and the current level of management (number of permits issued and acres affected) in coastal Louisiana.

3.3.2. Coastal Marsh.
3.3.2.3. Harsh Manaaement.

24.31 Page EIS-50, paragraph 3. The last sentence should be objective and reflect that marsh management studies have reported both beneficial and detrimental impacts to wetland vegetation.

24.32 Page EIS-50, paragraph 4. This paragraph is misleading, poorly worded, and should be revised. While a management proponent may hope that a project will provide wetland benefits, that is not a reasonable expectation. A study of existing management areas (see Cahoon and Groat 1990) suggests that impacts to vegetation are about equally apt to be positive, negative, or insignificant.

24.33 Page EIS-51, paragraph 1. Discussion should include the findings of Sweeney et al. (1990) who compared vegetative changes at passively managed and unmanaged wetland sites. This most extensive, controlled study of marsh management in coastal Louisiana found that no passively managed areas produced net gains in marsh area or net water-to-marsh gains.

24.34 Page EIS-51, paragraph 4. To somewhat reflect the great uncertainty of management success, in the second line delete "strive" and insert attempt. The last sentence should be expanded to ". . . resident fishery species and migratory species when accessible."

24.35 Page EIS-52, paragraph 1. It should be noted at the end of this paragraph that water level drawdowns frequently are unsuccessful in maintaining lowered water levels during the drawdown period.

24.36 Page EIS, paragraph 3. This paragraph typifies the overall lack of an objective analysis of marsh management and associated impacts presented throughout the programmatic EIS. The Cahoon and Groat (1990) report is the most thorough and intensive investigation of marsh management conducted in coastal Louisiana. Studies which comprise the report were undertaken by some of the best wetland scientists in the country. A number of state and federal agency representatives and private interests formed an advisory panel which provided input and guidance throughout study planning, implementation, analysis and report preparation. The study evaluated long-term changes of 16 management sites using

RESPONSE 24.30: There is no estimated completion date for the programmatic EIS on marsh management. Section 404 and Section 10 permit applications for marsh management projects, whether CWPPRA related or not, are being processed under normal regulatory procedures. We don't believe its necessary to go into details on the number of permits issued and acres affected in this EIS. This information will be discussed in great detail in the marsh management EIS.

RESPONSE 24.31: The referenced sentence has been rewritten. Beneficial and detrimental effects of passive management are discussed in the first three paragraphs under Section 3.3.2.3. All three paragraphs must be read to get the overall perspective of effects.

RESPONSE 24.32: This paragraph has been rewritten and now comprises the second half of the fourth paragraph under Section 3.3.2.3. We believe that the revised sentence should be less objectionable to you.

RESPONSE 24.33: The second-to-last paragraph under Section 3.3.2.3. contains the information that is the basis of your comment.

RESPONSE 24.34: We have made the change suggested in the first part of your comment. We think that the second part of your comment refers to the following paragraph. That sentence has been eliminated because it was out of place under effects to marsh. See discussions under Section 3.3.4.3., 3.3.5.3, and 3.3.6.3.

RESPONSE 24.35: The paragraph you reference has been eliminated.

24.36 Cont. interpretation of aerial imagery and analyzed the wetland functional attributes Of managed and unmanaged sites. Rather than characterizing the investigations as "not definitive," an objective presentation of the study results should be provided.

24.37 Page EIS-53, paragraph 1. A discussion should be included to address the long-term viability of marsh management in an environment experiencing eustatic sea level rise of approximately 2 inches every 5 years. The discussion should address the sustainability of these systems over a period of 20 or more years; requirements for future operational changes to maintain sufficiently low water levels within the management area; cumulative fishery impacts if access is impaired by revised operations to cope with elevated water levels; and probable effects of project abandonment.

3.3.4. Submerged Aquatic Vegetation.
3.3.4.3. Marsh Manaaement.

24.38 Page EIS-61, paragraph 1. It should be noted in this paragraph that inadequate tidal flushing of management areas results in rapid growth of algal mats, which shade out more beneficial vascular plant species.

3.3.4.7. freshwater Diversion.

24.39 Page EIS-61, paragraph 6. This section indicates that "increased sediment and nutrients would tend to increase coverage of SAV." It also should be recognized that higher sediment levels could increase turbidity and increased nutrient delivery could stimulate plankton production, factors which would reduce SAV growth.

3.3.6. Fisheries Resources.
3.3.6.1. No Action.

24.40 Page EIS-65, paragraph 7. Reference should be made to the study of Browder et al. (1988) who reported on the relationship between brown shrimp catch and wetland interface. Based on their analysis, they found that shrimp yields will decline when interface declines, "possibly beginning about 1995."

3.3.6.3. Marsh Manaaement.

24.41 Page EIS-66, paragraph 2. For clarification, we recommend that the phrase "freshwater and estuarine-dependent" be deleted from line 3. In the third sentence, the presumption that resident species are benefitted by protection or expansion of aquatic or emergent vegetation is unfounded. While wetland vegetation frequently is not benefitted by management, resident species still are selected preferentially. Reduced predation and competition, altered salinity conditions, or a variety of other factors may play more pivotal roles in the community structure of managed wetlands.

RESPONSE 24.36: We believe that the revised text gets to the real controversy surrounding the Cahoon and Groat report, especially the second-to-last paragraph of Section 3.3.2.3.

RESPONSE 24.37: Although your comment is focused on marsh management, sea level rise will affect the long-term viability of other project types as well. Fact is, we don't know very much about the long-term viability of most of the proposed project types because we don't have long-term monitoring data.

RESPONSE 24.38: We agree that algal mats could form in managed areas, but we believe that projects implemented under the CWPPRA would be operated to minimize this occurrence.

RESPONSE 24.39: Your suggestion change has been made.

RESPONSE 24.40: Your suggested addition has been added.

RESPONSE 24.41: We have deleted "freshwater and estuarine-dependent" as suggested. We have added some of the other factors that may affect resident fish populations, as you suggested.

24.42 Finally, based on scientifically credible studies, the last sentence should be revised to read, Estuarine-dependent migratory species are adversely impacted.

24.43 This section also should thoroughly discuss and analyze long-term and cumulative impacts to commercially and recreationally important marine fishery resources and dependent industries. The analysis should consider the hundreds of thousands of acres of coastal fishery habitat currently subject to marsh management as well as the acreage subject to future management by landowners and through the CWPPRA.

24.44 Page EIS-66, paragraph 3. The last sentence should indicate that the expansion of aquatic vegetation may occur in actively managed areas.

24.45 Page EIS-66, paragraph 4. Ranges in the reduction of fishery standing crop or production of economically important species should be provided from the cited studies.

24.46 Page EIS-66, paragraph 5. See preceding comments on paragraph 2.

24.47 Page EIS-67, paragraph 2. Reference should be to Hoese and Konikoff's manuscript rather than their "publication" since it is unpublished.

24.48 Page EIS-67, paragraph 4. The citation for USFWS, 1991 is not provided. This discussion also should indicate whether this was a controlled study and if differences were statistically significant.

3.3.6.4. Hydrologic Restoration.

24.49 Page EIS-68, paragraph 1. There are many projects proposed for funding under the CWPPRA that are identified as "hydrologic restoration" that would reduce tidal flow into restored areas by restricting, to a large extent, the cross-sectional areas of natural waterways leading to the project area. These projects could reduce use of project areas by migratory estuarine-dependent organisms. This potential impact should be identified.

3.3.6.7. Outfall Management.

24.50 Page EIS-68, paragraph 4. This section should note that some outfall management projects are essentially marsh management with a freshwater input component. As such, impacts would be similar to or more severe than those described for marsh management.

RESPONSE 24.42: It would be imprudent to make such a definitive statement when we know there are normally exceptions. Such a case may occur for areas that are so far removed from tidal influence that the use of the area by estuarine-dependent species is virtually non-existent.

RESPONSE 24.43: The information that you request in your comment will be a major focus of the programmatic EIS on marsh management. We are not prepared to delve into these issues at this time.

RESPONSE 24.44: We have modified the sentence so that is it less definitive about marsh management increasing SAV.

RESPONSE 24.45: We have added a figure for the decrease in fisheries production in the third paragraph of the section.

RESPONSE 24.46: We have included most of your suggestions.

RESPONSE 24.47: We have referred to the document as an unpublished manuscript.

RESPONSE 24.48: We determined that your copy of the document was missing a page of the Literature Cited section.

RESPONSE 24.49: We have identified the potential for these projects to reduce access by migratory species.

RESPONSE 24.50: We disagree with your assertion. None of the conceptual designs that we have reviewed for outfall management resemble marsh management projects.

3.3.9. Water Quality.
3.3.9.1. Existing Conditions.

24.51 Page EIS-77, paragraph 4. The fifth sentence should be revised to indicate that increased salinity levels ~~have contributed to~~ marsh and swamp loss and continue to contribute to marsh loss.

3.3.11. Property Ownership and Values.
3.3.11.8. Freshwater Diversion.

24.52 Page EIS-85, paragraph 5. This discussion would be more appropriate in section 3.3.16.

3.3.12. Flood Protection.
3.3.12.4. Marsh Management.

24.53 Page EIS-87, paragraph 4. It has been reported (e.g., Boumans and Day 1990) that the construction of canals and levees for marsh management or other purposes can cause water level amplification in adjacent areas. Levees also can hinder stormwater runoff from within a watershed. Increased water levels caused by management area levees could negate any flood protection benefits which may occur if marsh acreage can be increased through management. A more thorough and objective assessment of flood protection impacts should be presented.

3.3.14. Recreation Opportunities.
3.3.14.3. Marsh Management.

24.54 Page EIS-94, paragraph 3. This paragraph should mention that state law restricts harvesters from fishing within 500 feet of the water control structure.

3.3.16. Socioeconomic Items.
3.3.16.3. Commercial Fishing and Trapping.
3.3.16.3.3. Future With CWPPRA Projects.

24.55 Page EIS-108, paragraph 2. While most alternative project types either will not affect or will beneficially effect commercial fisheries, this section fails to address significant adverse impacts associated with the marsh management alternative. NMFS has calculated lost marine fishery production (recreational and commercial) from a moderately sized (3,000 acres) active management area to be about $500,000 per year. At least 28 potential marsh management projects are identified in this programmatic EIS. The loss in production of commercially and recreationally important marine fisheries should be discussed in depth in this document.

RESPONSE 24.51: We have made the editorial correction.

RESPONSE 24.52: We couldn't find an appropriate place for the discussion in Section 3.3.16.

RESPONSE 24.53: We have included some of the information contained in your comment.

RESPONSE 24.54: We checked with the LDWF about the law that you refer to (RS 56:329). The law states that certain types of nets (mainly commercial fishing nets) are prohibited within 500 feet of a water control structure if they prevent the free passage of fish. According to the LDWF, it is very difficult to prove whether or not a net prevents the free passage of fish. There is no state law that prohibits recreational angling, crabbing, cast netting, or dip netting around a water control structure.

RESPONSE 24.55: We have added a paragraph under the referenced section to disclose the possibility that certain types of projects have the potential to reduce commercial fishery harvest.

3.4. CUMULATIVE IMPACTS OF ALTERNATIVES

24.56 Pages EIS-117 through 127. This section should include the acreage of coastal wetlands potentially created and conserved within each hydrologic basin through implementation of the restoration plan. The area that CWPPRA projects Would add to the total area of coastal wetlands impounded for marsh management should be specified. The cumulative adverse fishery impacts of CWPPRA and non-CWPPRA projects should be identified and discussed as well.

Sincerely,

Andreas Maqer, Jr.
Assistant Regional Director
Habitat Conservation Division

RESPONSE 24.56: The information that you suggest including in the EIS has not been determined. We have developed very rough benefit calculations for about half of the projects included in the Restoration Plan, but we are reluctant to use these numbers in the EIS due to the potential inaccuracy of the numbers. The numbers are used extensively in the main report and basin plans.

Literature Cited

Boumans, R., and J. W. Day, Jr. 1990. Short-term sedimentation and water and materials flux. In: Cahoon, D.R., and C.G. Groat, eds. A Study of Marsh Management Practice in Coastal Louisiana. Final report submitted to Minerals Management Service, New Orleans, LA. Contract No. 14-12-0001-30410. OCS Study/MMS 90-0075.

Browder, J.A., L.N. May, A. Rosenthal, R.H. Baumann, and J.G. Gosselink. 1988. Utilizing remote sensing of thematic mapper data to improve our understanding of estuarine processes and their influence on the productivity of estuarine-dependent fisheries. Final report to the National Aeronautics and Space Administration. Center for Wetland Resources, Louisiana State University, Baton Rouge, LA.

Cahoon, D.R. 1990. Soil accretion in managed and unmanaged marshes. In: Cahoon, D.R., and C.G. Groat, eds. A Study of Marsh Management Practice in Coastal Louisiana. Final report submitted to Minerals Management Service, New Orleans, LA. Contract No. 14-12-0001-30410. OCS Study/MMS 90-0075.

Cahoon, D.R., and C.G. Groat, eds. 1990. A Study of Marsh Management Practice in Coastal Louisiana. Final report submitted to Minerals Management Service, New Orleans, LA. Contract No. 14-12-0001-30410. OCS Study/MMS 90-0075.

Herke, W.H., E.E. Knudsen, Z.X. Chen, N.S. Green, P.A. Knudsen, and B.D. Rogers. 1987. Final report for the Cameron-Creole watershed fisheries investigation. Louisiana State University, School of Forestry, Wildlife, and Fisheries, Baton Rouge, LA.

Reed, D. 1992. Effect of weirs on sediment deposition in Louisiana coastal marshes. Environmental Management 16 (1): 55-65.

Sweeney, K.P., M. Swan, K.M. Wicker, and J. W. Day, Jr. 1990. Evaluation of marsh management effectiveness: Analysis of habitat change. In: Cahoon, D.R., and C.G. Groat, eds. A Study of Marsh Management Practice in Coastal Louisiana. Final report submitted to Minerals Management Service, New Orleans, LA. Contract No. 14-12-0001-30410. OCS Study/MMS 90-0075.

PHILLIPS PETROLEUM COMPANY
HOUSTON, TEXAS 77251-1967
BOX 1967

NORTH AMERICA
EXPLORATION AND PRODUCTION

BELLAIRE, TEXAS
6330 WEST LOOP SOUTH
PHILLIPS BUILDING

August 30, 1993

Comments on the **Draft** Environmental Impact Statement lor the **Louisiana** Coastal Wetlands Restoration Plan, **Federal Register** Vol. 58, No. 135, dated July 16, 1993

Mr. Richard E. Boe
EIS Coordinator
CELMN-PD-RS
U.S. Army Engineer District, New Orleans
P. O. Box **60267**
New Orleans, **LA 70160-0267**

Dear Mr. Boe:

Phillips Petroleum Company (Phillips) appreciates this opportunity to comment on the Draft Environmental Impact Statement for the Louisiana Coastal Wetlands Restoration Plan prepared by the Louisiana Coastal Wetlands Conservation and Restoration Task Force. **Our** comments will not address the technical merits of the various **aspects** of the main report or the environmental impact statement, but rather will offer relevant comments on wetlands protection and the balancing of that need to achieve the greatest benefit to our society.

25.1 Wetlands restoration and protection is an important issue to Phillips. Our company has demonstrated its concern for wetlands protection through thoughtful planning of day-to-day operations in the many areas in South Louisiana where we conduct oil and gas exploration and development activities in a mainly wetlands environment **As** an example, in Plaquemines Parish where Phillips operates two major oil and gas fields, we have expended considerable time in engineering and planning of pipeline routes, facility sites and well locations. Generally, our planning as set out in our Section 404 permit applications goes far beyond what we anticipate will be required. It is Phillips' goal to conduct its activities in a manner that will have the least possible impact on the wetlands and areas with emergent vegetation, while at the same time allowing Phillips to construct and maintain facilities necessary to find and produce oil and gas resources prudently and economically. In Cameron Parish where we recently completed a saltwater disposal well, Phillips **saw** an opportunity to create an area that would in time support the growth of new **marsh** grasses. These new grasses will provide additional stability in the surrounding wetlands. The area involved covered approximately one-half acre of dredged material from the **wellsite** and was not required by any federal or state agency. This was an effort Phillips chose to undertake over and above any permit requirements at an additional cost **of** $53,000.00.

25.1 Cont. The examples set out in the foregoing paragraph are presented to demonstrate our company's concern for wetlands protection and restoration. Conversely, we are also concerned that unnecessary regulatory burdens will serve to diminish oil and gas activity to the detriment of the state **and local** communities which rely heavily on our industry as a tax base and for employment opportunities. In closing, we believe it is critical to carefully weigh the **costs** and benefits to our **society** when looking at any wetlands project. Thank you for this **opportunity** to comment.

Very truly yours,

PHILLIPS PETROLEUM COMPANY

Carver Richards

Carver Richards
Laws and Regulations Department

CR/nn

RESPONSE 25.1: The costs and benefits of projects to society are carefully analyzed when projects are considered for funding under **priority** project **lists.** Large-scale projects that are planned for the future will require thorough disclosure and consideration of socioeconomic impacts during feasibility studies.

Southeastern Louisiana University
Department of Biological Sciences
Box 814, SLU
Hammond, LA 70402-0814
504-549-3740

August 27,1993

Dr. Sue Hawes
U.S. Army Corps of Engineers
Planning Division
P.O. Box 60267
New Orleans, LA 70160

Dear Dr. Hawes,

Enclosed are my comments on the most recent version of the "Louisiana Coastal Wetlands Restoration Plan" Main Report and Appendix A. A few general comments may be found below.

Main Report

26.1 1. Many of the priority projects are highly questionable as to their expected outcomes. The overall vision for wetlands restoration in coastal Louisiana should focus on the one method that we know works well, namely small-scale sediment diversion projects. These are the most cost-effective project types and thq require the least funds for maintenance. The new presentation on proposed sediment diversions (pages 36-38) should be the backbone of the overall plan. Although the science of wetlands creatlon Is still in its Infancy, we know that the probability of successful wetlands creatlon is high if an area with sufficient throughput also contains a net aggradation of sediments.

26.2 2. A stronger argument should be made for the storm-abatement value of wetlands by including a sentence comparing the effects of hurricane Andrew in coastal Florida and coastal Louisiana such as: "Hurricane Andrew hit the coasts of Florida and Louisiana with roughly the same wind speeds; the Florida coast was devastated whereas Louisiana's wetlands greatly reduced the energy in Andrew and saved taxpayers millions of dollars."

26.3 3. The sentence circled at the bottom of p. 157 should be in the executive summary so that the reader realizes that, under natural conditions, net gain of emergent vegetation occurred for coastal Louisiana as a whole. The current version does not make a clear enough point that human alterations are largely responsible for today's alarming rates of net loss of emergent vegetation.

26.4 4. Now that the basin plans have been prepared. it is obvious that some basins provide much greater opportunities for obtaining net gains in emergent wetland vegetation than others. It is absurd to divide funds in such a manner that each basin gets a couple of projects each year. Cost-benefit analysis should be performed with all projects in a single pot and on a level-playing field.

26.5 5. Cost-benefit analysis should Include only emergent vegetation that will be gained or protected from loss. Our science is not far enough along to offer quantitative assessment of "acres enhanced" or "acres benefited," or whether one species association is more or less valuable than another. The estimated value of many of the currently proposed projects is

RESPONSE 26.1: The final plan does focus on sediment diversions as the tool that will restore Louisiana's coastal wetlands over the long-term. Several small-scale sediment diversions and at least one large-scale diversion form the backbone of the Restoration Plan. Limiting the plan to small-scale sediment diversions is not practicable since sediment sources are not available in every basin.

We do not feel that the success of many of the priority projects is questionable. Over 50 percent of the projects on the first three priority project lists are marsh creation, sediment diversion, and shoreline protection projects that we know will work. We are quite certain that the remaining hydrologic restoration and marsh management projects will be successful. All projects will be monitored and what we learn from this program will be used to make future projects work better.

RESPONSE 26.2: The plan recognizes the value of wetlands as a storm buffer. However, no specific data is available that permits a meaningful comparison between the effects of Hurricane Andrew on Florida versus Louisiana.

RESPONSE 26.3: The main report and the Executive Summary have been revised to more clearly recognize the role that human activity has had in causing wetland loss.

RESPONSE 26.4: Cost-benefit analyses are performed on every project on a level playing field. The same group of scientists analyzed nearly all the projects in the Restoration Plan. This interagency team developed the modified rapid-assessment version of the Wetlands Value Assessment especially for this purpose. We recognize that some basins provide greater opportunities for obtaining net gains in wetlands. However, there are opportunities in every basin to cost-effectively create or protect wetlands. These cost-effective projects are the ones that are chosen for priority project lists.

RESPONSE 26.5: The Wetlands Value Assessment methodology developed for CWPPRA is a peer reviewed, scientifically valid method for evaluating projected wetland benefits. We recognize that the modified rapid-assessment version is less accurate, but it is the only method that could fairly compare over 500 projects in about a month's time to meet the mandated deadline for report submission. As projects become candidates for priority lists, a true WVA will be completed for them and secondary criteria will be applied.

highly inflated due to these nebulous categories.

26.6 6. It should be made clear in the Main Document that many of the proposed projects are experiments.

26.7 7. The current monitoring scheme appears to contain an inherent bias: the agency responsible for implementing most of the projects is also the agency responsible for judging their success. An independent body (such as the university community and/or private enterprise) should be solely responsible for monitoring the success of CWPPRA projects.

26.8 8. All sections entitled "FUTURE WITHOUT-PROJECT CONDITIONS' should be entitled "FORECASTED FUTURE WITHOUT-PROJECT CONDITIONS." Current predictions are based on pseudo-science at best.

Appendix A

The Pontchartrain document is in much better shape than the previous version but could still be improved.

26.9 1. In my estimation, the most cost-effective project in the list is the "Amite River Diversion Canal Bank Modification" (XPO-47) project. I am still perplexed that this project is not a priority project.

26.10 2. Several people from DEQ have told me that data over the last several years indicate that the Mississippi River is higher in water quality (including lower fecal coliform counts) than any of the rivers and bayous (with exception to the Pearl) that currently drain into the lake. If so, this would boost public support of the Bonnet Carre diversion project. However, I have also heard that nitrogen (the expected limiting nutrient in the Pontchartrain system) may be higher in the Mississippi River. In either case, a water quality comparison of the Mississippi River and the other rivers and bayous emptying into the Pontchartrain should be presented.

26.11 3. If the Bonnet Carre project is going to win university support, the destruction of 200 acres of cypress swamp must be avoided. As I mention in the document, I am also concerned with the timing of the discharge; the system needs freshening in the fall and most of the planned discharge will occur during the spring. In addition. I don't understand why the diversion is planned biennially.

26.12 4. Treatment of MRGO is biased. The current version reads as if MRGO is a major conduit for ship traffic to New Orleans; I am told that it actually accommodates less than 2% of the traffic. Closing this environmental catastrophe should be a priority.

Specific comments are written in the documents - many are editorial in nature. I am sure this last round has been intensive and nerve-wracking. Hopefully you will get a rest following the next re-write. You are doing an admirable job.

Warm Regards,

Gary Shaffer
Scientific Advisory Panel

fc: Lee Wilson & Associates

RESPONSE 26.6: The only projects that we feel are experiments are the demonstration projects. As discussed in Response 26.1 above, we believe that the projects proposed in the Restoration Plan will succeed in restoring Louisiana's coastal wetlands.

RESPONSE 26.7: In a Task Force comprised of five Federal agencies and the State of Louisiana, all of whom have different missions, any single agency's bias is lost.

Louisiana Department of Natural Resources (LDNR), with the assistance of U.S. Fish and Wildlife Service, has been designated by the Task Force to administer the monitoring program. The work will be done by trained professionals. The monitoring protocol has been developed by the Task Force agencies with the help of the academic community.

RESPONSE 26.8: We feel the "forecasted" is implicit.

RESPONSE 26.9: This project (XPO–47) is recommended as a demonstration in the final plan.

RESPONSE 26.10: The water quality of the rivers on the north shore of Lake Pontchartrain is very poor as evidenced by the fact that they, and not leakage from the Bonnet Carré spillway, were responsible for the algal bloom in Lake Pontchartrain during the summer of 1993. However, since it is the Mississippi River that is being diverted into the lake, the only fair impact analysis is that of the Mississippi River water on the lake.

RESPONSE 26.11: Swamp loss has been minimized as much as possible by moving the disposal area for material taken from the outfall channel to a non–wetland area in the center of the spillway. No further reduction is feasible. The diversion still preserves a net of 10,000 acres of wetlands over 50 years.

Operation of the structure in the fall when salinity is high would greatly benefit the wetlands around the western portion of Lake Pontchartrain. This will be given serious consideration when the operating scheme for the project is finalized.

As described in the Pontchartrain Basin appendix, the Bonnet Carré diversion will be operated when salinities are high in the basin. On the average, this occur every other year.

RESPONSE 26.12: Vessels using the MRGO carry slightly over 3 percent of the tonnage of goods passing through the Port of New Orleans. However, the value of the goods moved on the MRGO, because of their containerized nature, compose 13 percent of the monetary value of goods passing through the port.

United States Department of Agriculture
Soil Conservation Service
3737 Government Street
Alexandria, Louisiana
71302

August 30, 1993

Colonel Michael Diffley
District Engineer
U.S. Army Engineer.District
New Orleans
Corps of Engineers
P.O. Box '60267
New Orleans, Louisiana 70160-0267

Dear Colonel Diffley:

I would like to congratulate you, as chairman, and the entire Task Force for an outstanding job on the Louisiana Coastal Wetlands Restoration Plan. The plan is an excellent example of the results that can be achieved when government agencies, groups and individuals work together to save Louisiana's coastal wetlands.

Overall the plan adequately discusses the problems and strategies to abate wetland loss in Louisiana; however, I feel compelled to address the marsh management issue. The Main Report and EIS present some negative findings and generally fail to identify the positive role of rarsh management. Harsh management is one tool for restoring wetlands in certain areas where conditions warrant its use. Other techniques such as hydrologic restoration, shoreline protection, freshwater and
27.1 sediment diversions, beneficial use of dredge spoil, revegetation and barrier island restoration are applicable only to certain conditions in coastal Louisiana as well.

Modern rarsh management techniques involve a holistic approach to ecosystem management. They address soil, water, animals, plants, and air; all of which are essential to a balanced ecosystem. There are many success stories across the coast that demonstrate clearly the desirability of marsh management as an option to coastal restoration. This has been a concern of many landowners who have recognized the critical erosion and catastrophic loss of their wetlands and have demonstrated great resourcefulness in attempting to reverse these losses.

While many of the large scale projects identified in the restoration plan may be conceptually valid, planning needs and socioeconomic constraints may substantially delay or even preclude their implementation. In the interim or as an alternative we must implement measures to retain the marsh soil substrate where it currently exists.

The Soil Conservation Service is an agency of the Department of Agriculture

AN EQUAL OPPORTUNITY EMPLOYER

27.1 Cont. Attached are comments submitted to the Louisiana Coastal Wetlands Restoration Plan and Environmental Impact Statement from the USDA - Soil Conservation Service comments.

Sincerely,

Donald W. Gohmert

Donald W. Gohmert
State Conservationist

RESPONSE 27.1: Comments acknowledged and appreciated.

BOIL CONSERVATION SERVICE RESPONSES TO THE LOUISIANA COASTAL WETLANDS RESTORATION DRAFT PLAN, MAIN REPORT AND ENVIRONMENTAL IMPACT STATEMENT, August 30, 1993

EXECUTIVE SUMMARY

PG. 4 Restoration. ...Fresh water will be added, salt water will be blocked, and ~~dredged-material-banks-will-be~~ breached other measures will be used to restore.....

INTRODUCTION

THE PROBLEM: THE LOSS OF COASTAL WETLANDS

Pg. 7. Para 1. Sentence 2.
Tho causes of soil orosion that lead to wetland loss include subsidence .... These causes result in orosion of organic surface soil and mineral shorelines.

Pg. 7. Para 1. Sentence 4.
Rapid submergence of soils and ....

27.2 Pg. 7. Para 1. Sentence 5.
These stresses ... organic matter to the soil substrate ..... (Mitsch and Gosselink 1986) and encourage land loss by severe orosion of existing organic soil layers.

Pg. 7. Para 1. Sentence 6.
A variety of more local ... , hurricanes, herbivory, and soil erosion by increase tidal uchango,...

Pg. 7. Para 1. Last sentence.
Add: Erosive effects due to wind and water have boon documented to be a major factor in tho loss of coamtal wetlands duo to high organic nature of marsh soils. Associated land loss in coamtal marshes is directly related to tho loss of the organic surface layer of marsh soils.

Pg. 7. Para 2. Sentence 1.
All of the soil built by ....

Pg. 7. Para 3. Sentence 2.
Each of the "primary causes" of soil loss ....

Pg. 8. Para 4. Sentence 3.
Pumping of the marsh organic soils caused rapid subsidence .....

Pg. 8. Para 7. Sentence 1.
The suspended ... helped build soils apparently declined ...

Pg. 10 Para 1. Sentence 1.
...exploring the potential of the Gulf Intracoastal Watervay and othe rmajor water transport routes as a

Page 12. Para 2.
A11 of Louisiana coastal marsh soils have tho common characteristics of wetness, flooding. low elevation, and low relief. They vary widely in many other characteristics, however, that are important to their use and management.
Marsh moils can be divided into two categories; mineral and organic. Mineral marsh moils have organic surface layers of less than 16 inches in thickness. Soils with more than 16 inches of organic accumulations are classified as organic soils.
Tho highest rates of soil orosion in coastal marshes are occurring in tho deep organic soils. Tho natural processes of geologic orosion coupled with tho main-induced alterations of tho fragile ecosystem has shifted tho balance of marsh soil development.

27.2 Cont.

Pg. 12. Para 4. Sentence 5.
Soil erosion along both gulf and bay ....

Page 15. General Comment
The majority of the Teche/Vermilion Basin is in the Deltaic Plain. The Mississippi subdelta lobes of the Teche and Maringouin are located within the Basin.
The area between Freshwater Bayou - LA Hwy. 82 and the western shoreline of Vermilion Bay is predominantly within the Chenier Plain.

Pg. 21. Para 3. Sentence 3.
Even a very ... duration of flooding of soils in Louisiana ...

Page 22. Para. 2
.... organic mass, ~~particularly-belowground,~~ ~~organic-matter-stock~~, and removal ...

Pg. 22. Para 3. Sentence 2.
As a result, ...to the marsh moil substrate .... each year to the soil substrate ....

Pg. 22. Para 3. sentence 4.
These include lateral soil erosion ...(Gagliano and Wicker 1989), sheet orosion of organic materials from increased tidal exchange,

Pg. 22 Para 4. Sentence 1.
While all wetland...Louisiana swamp, fresh, brackish,...

Pg. 22. Para 5. Sentence 1.
Sudden increases .... fresh marsh soils can result in .....

Pg. 23. Para 2. Sentence 1.
Increased ... to fresh marsh orosion in ...

Pg. 23. Para 4. Sentence 2.
Such collapses, duo to erosion, have been observed to result in moil erosion that leads to a surface lowering ...

Pg. 23. Para 4. Sentence 5.
....(Stevenson el al., Reed 1991). These impacts are also observed in vertically stable marsh landscapes. Those effects....

27.2 Cont.

THE VALUE OF COASTAL WETLANDS

Fish and Wildlife Values
pg. 25 [Incorporation USFWS National Fishing, Hunting and Wildlife Associated Recreation Surveys (USDI-PWS, 1985; USDI-FWS, 1992). Linscombe and Kinler's Fur Harvest Data (Linscombe and Kinler, 1984), and LDWF's annual migratory waterfowl surveys. This information will add to the importance of all recreational and commercial values associated with coastal wetlands]

SOLUTIONS TO WETLAND LOSS IN LOUISIANA

Page 33. Para 6.
Restructure sentence. Should be: .... Louisiana's coastal wetland system....

Page 39. Section : Rebuilding Barrier Islands
Use of subaqueous shoals would remove some of the protection for interior marshes.

pg. 42 Gulf Shorelines
... ~~Unfortunately, ... material to the beach~~ ...
[misleading and confusing, not caused by segmented breakwaters, mud has been in Holly Beach or other areas for a long time, especially after dredging of Calcasieu Ship Channel, other places this is a natural process of chenier forming] [Add section on the Holly Beach project.]

Page 43. para 4. sentence 1.
Hydrologic ..... drainage pathways.~~-by-the-selective blocking-of-dredged-channels.~~

Page 43. para 4. sentence 2.
Often, these excavated channels ....

Page 43. para 5. sentence 1.
[strike the first sentence - the concept of gapping spoil banks is NOT new, and has been an extremely controversial issue for about a decade]

Page 43. para 5. sentence 2.
intersecting canals has should read
...intersecting drainage channels has

'age 43. para 5. sentence 5.
....Studies suggest that, in a f w cases, there may be some merits, however often tho banks provide protection as they exist and gapping will cause more harm than good.

27.2 Cont.

Page 43. para 6. sentence 2.
[Should include additional features besides gapping spoil banks. It is NOT the only tool available in hydrologic restoration.]

Include "Such structures have been used successfully in the Chenier Plain in Cameron Parish."

Page 44. Para 1. Sentence 3
these closures are design to .... should rewrite needs to say: may retard or restrict.

Page 44. Para 2. sentence 1.
Marsh Management
... practices in Louisiana for at least 50 years to protect tho resource base, by reducing orosion, salinity surges, tidal scouring, and enhance emergent and submergent vegetation Ce-manage-Ier ~~waterfowl-and-furbearers.~~

para. 4 Landowners have found that this has boon proven to be an effective tool under certain conditions, encompassing approximately 168 of coastal wetland acreage, and should be considered when specific site evaluations are done.
[see Chabreck, 1978 - Soil and Water Characteristics of Coastal Marshes Influenced by Weirs - reducing turbidity, siltation behind structures]

pg. 53 para. 1 Sentence 2.
... Therefore, region-scale solutions to problems causing land loss are desirable in tho long term.

However, because of funding and socioeconomic constraints, tho length of time needed to plan and implement larger, regional-scale projects, and tho need to protect critical wetland areas in a timely manner, smaller-scale projocts rust also be an integral put of tho restoration plan.

para. 3 Add this sentence:
Tho restoration plan must remain flexible so that critical smaller-scale projocts identified in tho future can be implemented in a timely manner.

pg. 73 para. 1 Line 5.
Misspelled word. Replace "scarsity" with scarcity.

pg. 73 para. 5 Line 1.
Reword to "Subsidence, and subsequent erosion,...

pg. 74 para. 1 Sentence 4.
The project and will direct .....

pg. 79 Table BS-2
OM is used as a project type but is not listed in the legend along with other project types.

27.2 Cont.

pg. 81. Geomorphology Section. para 1. Sentence 3.
During this period, the river shifted coursed and .... (delete the d in coursed).

pg. 113 para 3. Last sentence.
(This is an assumption and may be inaccurate. If land loss rates are used and not defended in other basins, it should not in this one.) A better statement would be: Tho Penchant marshes receive a largo amount of freshwater and sediments; however, without proper outfall management of these waters and sediments, erosion is expected to continuo.

pg. 115 para 3. Sentence 2.
Take out the word passive.

pg. 115 para 4. Sentence 2.
... conveyance channels and improve the distribution and maintenance of sediment-laden water.

pg. 117 para 4. Sentence 1.
Hydrologic models are valuable tools to determine ...

pg. 117 para 4. Sentence 4.
Duo to tho insufficient use of freshwater and sediments ... (This basin ham more freshwater and sediments than most.)

pg. 127
Alternative C. Sentence describes Wax Lake Outlet as "the more efficient." It should be clarified that Wax Lake Outlet is tho more efficient in building marsh.

pg. 133 para 4. After sentence 1.
... spring. Salinity levels are also influenced by tho GIWW and discharge from terraced uplands which are affected by rice oulturo.

pg 136 Para 2 Sentence 4.
The underlying cause of .... human induced, of hydrology, ...

pg 137 Para 2 omit.
[The paragraph is a repeat of the last paragraph on page 136].

May insert this paragraph in the place of the omitted paragraph:
A proforred strategy would go beyond tho above mentioned projocts by dealing more comprehensively with tho major resources of basin, tho freshwater and sediment of tho Atchafalya Basin. Thus, for example, under this strategy a particular priority would be placed on demonstration projocts aimed at overall goals of sediment management.

27.2 Cont

pg. 138 Key Issues
Several of the projects .... [This entire paragraph is inappropriate since all projects can have these problems, and all projects go through a planning stage to insure all aspects in the project are addressed. Why single out hydrologic restoration as needing to be planned carefully. A project that is not planned carefully has a greater chance of failure.]

pg. 148 4. Fisheries Impacts. ... control structure ~~will likely~~ in some cases could reduce recruitment .... However several projects in tho Mermentau Basin are designed to reduce water levels and will have a positive impact on tho movement of estuarine organisms.

pg 157 Top of page change "Mapone largen to largo open

pg. 158 Add paragraph after 1st complete paragraph.
In areas where saltwater intrusion destroyed fresh and low-salinity vegetation growing on fragile organic marsh soils, large areas of shallow open water now uist. Wind induced wave action continues to erode exposed marsh edges. Additionally strong winds create tides which often create flow patterns which export eroding soils and discharge interior freshwater and/or introduce saltrator. Unless this erosive cycle is interrupted, erosion on exposed marsh edges will likely continue.

Page 159 Table CS-2
21,900 acre instead of 1,900.

Overview of Basin Strategy
3) Change to- treating critical areas of wetland loss.

Page 164 Para. 2 1st sentence.
Change 1st sentence to " Supporting projects address erosion in interior largo open water areas and other severely eroding areas, where perimeter projoats alone cannot provide sufficient protoation.
Add project under Marsh Sound of Calcasieu Lake XCS-51/44 Mine CSC spoil and plug West Cove Canal.

27.2 Cont.

Page 166 Under erosion control along the GIWW strike out CS-11 and XCS-41. and add them as a combined project CS-11/XCS-41 Sweet Lake-Willow Lake Bank Stabilization.

Page 168 Table CS-3
Line out Project XCS-44.

Page 170 Line out Project XCS-51.

EXHIBIT 4
pg. 9 U.S. Department of Agriculture (Soil Conservation Service. Aaricultural Stabilization and Conservation Service).

United States Department of Agriculture
Soil Conservation Service
Work in Protection and Restoration of Wetlands

The Soil Conservation Service (SCS) objectives include working with landowners to reduce soil erosion and thus retain land productivity. The State Conservationists for Louisiana have understood the problems confronting landowners with wetland erosion for many years.

The district conservationists, in coastal parishes, have worked with landowners to plan conservation measures on wetland soils since the early 1950's (Broussard and Floyd, 1987). The planning has not only been done on small areas of wetlands, but on a basin level. The SCS Water Resources Staff has worked with local conservation districts on both Cooperative River Basin Studies and Watershed plans which encompass both public and private lands.

The SCS has also been involved in conservation planning on public lands with the United States Department of Interior-Fish and Wildlife Service (USFWS) on many refuges. In 1951 two reports were issued jointly by the USFWS and the SCS in regard to Cameron Parish. These reports contained a map of vegetative types, including all marshlands, within the parish.

River Basin Studies and Watershed planning is provided for under the authorization of the Small Watersheds Planning Act (Public Law 83-566). The Public Law was passed by the 83rd Congress, House Bill Number 566, in August 1954. It authorizes the United States Department of Agriculture to cooperate with Federal, state, and local agencies in making surveys and investigations of the watersheds of rivers and other waterways.

27.2 Cont.

The SCS, to date, has completed two river basin studies and is working on three others within Louisiana's Coastal Zone. The SCS completed the Lafource-Terrebonne Cooperative River Basin Study in September 1986. In September 1989 the SCS completed the Central Barataria Cooperative River Basin Study. The Calcasieu-Sabine Cooperative River Basin study will be finalized by September 1993. The Mermentau Cooperative River Basin will be completed by September 1994 and the Teche/Vermilion Cooperative River Basin Study will be completed in September 1995.

The SCS, to date, has completed two watershed planning studies, has one study pending and is in the process of completing a supplement on one watershed for coastal vetlands. The Cameron-Creole Watershed Plan was completed in October 1972. The West Fork of Bayou L'Ours Watershed Plan was completed in March 1987. This watershed plan will have most Of the components implemented under the BA-2 project listed on the first priority list. The Sabine-Black Bayou Watershed, in Cameron and Calcasieu Parishes, will begin the study phase later in Fiscal Year 1993 and will be completed by September 1994. The West Fork of Bayou L'Ours Watershed Supplement Number 2 is in the planning phase and will be completed by September of 1993.

The Soil Conservation Service is also involved in program-neutral natural resource planning in wetland areas. These plans are funded under other sources than the PL 83-566 watershed funds. A natural resource plan will be completed on

the Bayou Penchant area of Terrebonne Parish in Fiscal Year 1994. The Lake Boudreaux Plan has been approved and is in the planning process. This natural resource plan will be completed by September 1993.

The SCS is also involved in a plant materials program for coastal wetlands. The Plant Materials Center is located in Golden Meadow, Louisiana. The center actively collects and grows various wetland vegetation to be introduced into the marsh. The goals of the program are to find plant materials that can withstand greater ranges in water depths and salinity, improve hybrid vigor, increase productivity, evaluate additional species and successions, and determine best planting methods for erosion control.

Various publications and other studies regarding coastal areas have also been a part of SCS's involvement in marsh conservation planning. These documents include various coastal soil surveys, the Gulf Coast Wetlands Handbook, and the Coastal Marsh Inventory. The soil surveys (Table 1) generally contain information about marsh soil types, structural and land use suitability, and productivity for various uses. All the other parishes have either been published, are at the printing office, or being surveyed. A Gulf Coast wetlands Handbook was developed in the early 1970s for use by the field offices in conservation planning for landowners in the marsh. In 1983, a Coastal Marsh Inventory was made to determine aspects of the marsh that did not fit within the National Resource Inventory that SCS does every five years.

27.2 Cont.

a l e 1 Soil Surveys in Coastal Louisiana

Soil Survey	Publication Date
Ascension Parish	1976
Assumption Parish	1978
Calcasieu Parish	1988
Cameron Parish	1993
Iberia Parish	1977
Jefferson Parish	1982
Lafourche Parish	1983
Livingston Parish	1991
Orleans Parish	1989
Plaquemines Parish	1993
St. Bernard Parish	1989
St. Charles Parish	1987
St. James and St. John Parishes	1973
St. Martin Parish	1977
St. Mary Parish	1959*
St. Tammany Parish	1990
Tangipahoa Parish	1990
Terrebonne Parish	1960*
Vermilion Parish	1994

*Currently being updated.

EXISTING PROJECTS

U.S. Department of Agriculture, Soil Conservation Service

TABLE OP SCS MARSH WORK

Lafourche-Terrebonne	Terrebonne
Central Barataria	Barataria
Calcasieu-Sabine	Calcasieu-Sabine
Mermentau	Mermentau
Teche-Vermilion	Teche-Vermilion

Watershed Planning Studies	Basin
Cameron-Creole	Calcasieu-Sabine
West Pork of Bayou L'Ours	Barataria
West Pork of Bayou L'Ours Supplement #2	Barataria
Sabine-Black Bayou	Calcasieu-Sabine

Natural Resource Protection Plans	Basin
Lake Boudreaux	Terrebonne
Bayou Penchant	Terrebonne

27.2 Cont.

Summary of Landowner Marsh Conservation Plans from 1981-1990.

Field Offices	# of Plans	Acres	Basin(s)
Abbeville	31	111,547	Merm./Teche-Verm.
Belle Chasse	13	28,420	Breton S./Miss. R.
Covington	2	9,338	Pontchartrain
Franklin	7	8,057	Teche-Verm./Atch.
Houma	27	356,858	Terrebonne
Jennings	5	10,053	Calcasieu-Sabine
Lake Charles	29	171,391	Calcasieu-Sabine
New Iberia	14	105,000	Teche-Vermilion
New Orleans	40	201,443	Bar./Breton/Pont.
Thibodaux	15	179,888	Bar./Terrebonne

Landowner Marsh Conservation Plans on Priority Lists 1 & 2

BA-2	Gulf Intracoastal Watervay to Clovelly Farms
CS-20	Mud Lake marsh Management
CS-9	Brown Lake Hydrologic Restoration

Comments on the Environmental Impact Statement

27.3 EIS-4 [The Tables are well done, the information is correct - modify Marsh Management under Fisheries Resources change "would be restricted" to "could restrict or be increased"

RESPONSE 27.2: All comments on the executive summary, main report, and basin plans submitted by Task Force agencies have been addressed by work groups made up of representatives from those agencies. The comments are not specifically responded to in this document.

RESPONSE 27.3: We have modified the table to be less definitive.

2. Alternatives
2.3. Alternatives Considered in Detail
EIS-27 2.3.2 Marsh Management

27.4 para. 4 ... ~~induce-the-desired-plant-and/or-animal community-responses~~ **increase** tho vegetative **extent,** productivity, and **diversity.** Plans to **be permitted** should meet this desired **response.**

27.5 para. 5 ....restricted by **inadequate** structures ..., **properly** designed **structures** rill **eliminate** this **problem.** Canal banks may **be modified** ~~gapped-or-closed-off~~ depending ...

27.6 **para. 7** [Eliminate paragraph - South Carolina does not apply to Louisiana]

EIS-28
para. 1 & 2 [omit entire paragraph - South Carolina marshes are totally different from those in Louisiana]

2.3.2.1 passive Manaaement.

27.7 para. 3 ... would likely be to ~~enhance-some-attributes ,,,-minor-environmental-problems~~ stop further erosion from occurring, and stabilize water conditions.

27.8 para. 4 .... ~~Producing-favorable-,,,-(Chabreck-and Nyman,-1989).~~

27.9 para. 6 However, passive **water management** ...~~some unavoidable variable~~ effects. ~~One-effect-is~~ **One** study indicates that some types of passive ... (Herke, Rogers, and **Knudsen, 1984), however,** other studios **(Wicker,** 1983; Horko, 1971; **Herke,** 1992; **Gagliano** and **Roberts,** 1987; Chabreck and Hoffpauir, 1962; **Nyman, et al,** 1990; **Hoese** and **Konikoff, unpubl.)** from tho **same** area shows **no noticeable impact** on **these same** organisms. ~~Another-effect-is-that-,,,-into and-out-of-managed-areas,~~ Although this can **somewhat limit** sediment introduction, **many** areas in Louisiana's **marshes are** not **dependent** upon sediment, and **there are** usually no sufficient sediment available. The **deep** organic **soils** of the **marshes** indicate that **sediment has** played a very minor **role** in **marsh** creation, a much greater dependency is on organic accumulation **which requires lessened** tidal actions and increased plant **growth,** both possible through use of **passive management (Nyman,** Chabreck, **DeLaune** and Patrick, **1993).** Additionally, ... marsh soils (Turner, Day and Gosselink, 1989). (Broussard, 1988)

RESPONSE 27.4: Please refer to Response 12.2.

RESPONSE 27.5: We do not believe the first part of your comment is appropriate. New tidal connections can form in managed or unmanaged areas. In managed areas, new tidal connections could form, regardless of the adequacy of the structures to relieve hydrologic pressures. We believe it is appropriate to add your second suggestion rather than to modify the original text as you suggest.

RESPONSE 27.6: Please refer to Response 12.2.

RESPONSE 27.7: We have reworded the referenced sentence, using a portion of your suggestion.

RESPONSE 27.8: Please refer to Response 12.4

RESPONSE 27.9: Please refer to Response 12.5.

EIS-30 2.3.2.1.1 Fixed-crest weirs.

para. 3 Proposals to use only fixed-crest weirs to manage areas are extremely-rare useful in areas to stop or reduce erosion, more active structural measures are required to regenerate marshes (Carney and Chabreck, 1977; Hess, et al, 1988). Fixed-crest weirs are more often ... objectives.

27.10

2.3.2.1.2 Slotted weirs.

para. 2 Developed in the late 1980's ...conventional fixed-crest weirs. It has proven-itself-to boon indicated that it might be an improvement in this regard (Rogers, Herke, and Knudsen, 1992), however tho final analysis is still incomplete.

27.11

para. 5 Apparently-undocumented Speculated effects of slotted weirs ...

2.3.2.1.3 Rock weirs.

para. 6 ...naturally drained areas. The voids between rocks allows quicker passage of water than earthen or other structures and may in fact allow access to a very limited extent of organisms, tho extreme tidal fluctuations causing scouring are greatly lessened, as in other structural measures, than those of open direct channels. Use of rock weirs is limited to areas ...

27.12

EIS-32 2.3'. 2.2 Active Management.

para. 1 .... Periodic water level reduction ... fishery resources, however, in order to increase tho resource base that these organisms depend upon, it is a necessary aspect of active management.

27.13

para. 2 ...This phase is also controversial because it, too, adversely effects fishery access and usage of the area, on a short-term basis. However, as stated in phase 1, it is necessary in order to maintain tho rosourco base that these organisms depend upon.

27.14

para. 3 The paragraph should stricken from the document due to the fact that the restoration plan of the Task Force is from consensus building and there is no need for one agency's concerns. The concerns were addressed in the Table on page EIS-4. However, if this paragraph is not stricken we suggest the following to be appended to the paragraph.

Based upon ... candidate projects. Tho Boil Conservation Service, along with other agencies

ax 15

RESPONSE 27.10: Your comment refers to paragraph 2 instead of 3. The concepts that your comment addresses appear elsewhere in the report and therefore have not been included here.

RESPONSE 27.11: During discussions with SCS, it was decided that the original text was adequate.

RESPONSE 27.12: Please refer to Response 12.8.

RESPONSE 27.13: This section has been moved to Section 3.3.6.3. where the essence of your comment has been added.

RESPONSE 27.14: The sentence that you refer to has been removed from this section because it refers to an effect. The essence of your suggestion appears in the fifth paragraph under Section 3.3.6.3.

27.15 Cont.

and private landowners, have realized that the overall benefits in creating mush resources outweigh the temporary impacts upon fisheries. The overall loss of these resources impact fisheries in the long term, therefore any temporary decrease in access would result in a net increase in resource base when the big picture is examined.

EIS-33

27.16

para. 3 [delete paragraph on South Carolina study - different soils, tidal fluctuations and weather patterns make these areas impossible to correlate].

27.17

para. 4 May delete this paragraph from the present EIS because it has no impact at this point. If that is not acceptable then we suggest the following:
~~Comparably-intensive-studies-of-similarly managed-Louisiana-marshes-are-lacking.~~ Many studies have been conducted in marshes, however the majority are either examining impacts to either furbearers and waterfowl, or to fisheries, and many ere contradiatory.

EIS-34

27.18

para. 3 ... Rock weirs ...differ in their top elevation. As in other instance these structures can only be used where soils are capable of supporting them. The entire width of the weir ...

EIS-37 2.3.5 Sediment Diversion.

27.19

para. 1 ... as an example of this type of sediment diversion.
In the western part of the state, and other areas, sediment is not available in sufficient amounts to utilize a project of this typo. Tho growth of marshes in these areas are more dependant upon organic accumulations (Nyman, et al, 1993; Gagliano and Roberts, 1987) and the use of other project types are more appropriate.

EIS-38 2.3.6 Freshwater Diversion.

27.20

para. 3 ... During wet periods ... over-freshening inundating the system. The constructed ...

EIS-39 2.3.8 Uarsh Creation with Dredged Material

27.21

para. 4 "Red Mud" and other industrial by-products are not dredge material and should not be in this section. A section 2.3.15 should be created to handle this project type. The main report has

RESPONSE 27.15: This sentence has been removed from the document with the concurrence of the NMFS.

RESPONSE 27.16: We believe that enough similarities exist between marsh management in South Carolina and Louisiana to include this information. It has been moved to Section 3 of the EIS.

RESPONSE 27.17: The first sentence of the paragraph has been deleted but related information is included in Section 3.3.2.3. The rest of the paragraph has been rewritten and moved to Section 3.3.1.

RESPONSE 27.10: Your suggestion has been added.

RESPONSE 27.19: Your suggestion has been added.

RESPONSE 27.20: We have kept our original language and included your suggested change as addition.

27.21 Cont.

this material as Inert Industrial By-Products. If this comment is unacceptable we suggest that the following modifications to the paragraph: Proposals have been made... Many of these proposals are very controversial and include ... addressed in the CWPPRA. The Falgout Canal ... Houma, Louisiana. tho effects of this material on tho resource is unknown, and ray pose drastic effects on tho resource that it is trying to protect. Even in tho proposed demonstration tho results may not be directly applicable to use in marshes and a careful study must be done before this project is considered.

27.22

EIS-40 2.3.11 Shoreline Erosion Control with Vegetation.
para. 4 ...Giant cutgrass (*Zizaniopsis miliacea*), Seashore paspalum (Paspalum vaginatum), and California bulrush (Scirpus californicus) are 4s-a desirable species ...

27.23

EIS-41 2.3.12 Terracing.
para. 3 ... minimizing turbidity and shoreline erosion on windward sides of open water areas from wind-generated waves. ...

3. Affected Environment / Environmental Effects

27.24

EIS-46 3.1 Description of Habitats
para. 2 [delete duckweed (*Lemna minor*) - NOT in brackish areas]

27.25

EIS-47
para. 2 .... baldcypress (Taxodium distichum) ... . water hyacinth, alligatorweed, and duckweed ....

3.3. Significant Resources and Effects of Alternatives
3.3.2. Coastal Marsh
3.3.2.3 Marsh Management

27.26

EIS-52
para.4 [deletealloftthisparagraphnodirect conclusions by authors, many conflicting results determined in literature - ~~Cahoon and Great-... by other authors.~~]

27.27

EIS-53
para. 1 ~~...These findings parallel closely with ... South Carolina ... these differences.~~ [South Carolina, as earlier stated is so different from Louisiana no comparisons can be justified]

para. 6 ~~In South Carolina, ...~~ (delete entire paragraph - see above comment]

RESPONSE 27.21: We have not designated a separate section for "red mud" projects. We have used some of your suggested changes in the revised text.

RESPONSE 27.22: We have included your suggested addition.

RESPONSE 27.23: We have included your suggested addition.

RESPONSE 27.24: We have made the suggested deletion.

RESPONSE 27.25: Your suggested changes have been made.

RESPONSE 27.26: Please refer to Response 12.13.

RESPONSE 27.27: The text has been revised for the final report. We believe that enough similarities exist between marsh management in South Carolina and Louisiana to include this information.

EIS-55 3.3.2.8 Outfall Management
para. 5 .... sediment deposition. Care must be exercised that additional water input is often not possible when it is most needed, and conversely, when it is possible to provide water tho areas that will receive it may not need additional water at that time period.

27.28

EIS-56 3.3.2.9 Marsh Creation with Dredged Material
para. 3 ... ~~The key point ... not function equally~~. [The duration of Minello's study is insufficient to support this.]

27.29

3.3.2.10 Barrier Island Restoration
para. 4 [There are drawbacks to barrier island restoration techniques, taking material from one area to use in another may just shift the problem in the long run, particularly if the material source is from back bay areas. Many of the functions and values are not totally understood, and the extent of protection to interior marshland is not fully quantifiable at this time.]

27.30

EIS-57 3.3.2.12 Shoreline Erosion Control vith Vegetation
para. 3 [Would be more appropriate to place vegetative plantings under a separate section]

27.31

3.3.2.14 Sediment Trapping
para. 5 [wave dampening fences could be a component or shoreline erosion control vith structures]

27.32

3.3.3. Cypress-Tupelo Swamp
EIS-58 3.3.3.3 Marsh Management
para. 3 ...reality can be construed am a management project since by one definition water levels would be actively managed.

27.33

EIS-60 3.3.4 Submerged Aquatic Vegetation
para. 2 [Floating aquatic vegetation, although a little different, provides a lot of the same benefits as SAV and should be included in this section]

27.34

para. 5 ~~The occurrence ... fresh marshes~~. [Delete this paragraph the distribution of SAV and PAV are well known, and easy to predict.]

27.35

3.3.4. Submerged Aquatic Vegetation
EIS-61 3.3.4.3 Marsh Management
(This section appears to be satisfactory; can add references of: Larrick and Chabreck, 1976; Chabreck, 1967)]

27.36

RESPONSE 27.28: We believe that your suggested addition is more appropriate under Section 3.3.2.7., where it has been included.

RESPONSE 27.29: We have eliminated the referenced sentence.

RESPONSE 27.30: We have added some of your suggestions to the report.

RESPONSE 27.31: We have changed the name of this project type to Vegetative Plantings in order to include plantings that are not for shoreline erosion control.

RESPONSE 27.32: We have added the information that you suggested.

RESPONSE 27.33: We have included a part of your suggestion.

RESPONSE 27.34: Please refer to Response 12.19.

RESPONSE 27.35: During our discussions, we agreed that this comment could be disregarded.

RESPONSE 27.36: We have added one of your suggested references. We didn't add the other because it wasn't included in your list of references.

3.3.5. Wildlife Resources

27.37 EIS-63 3.3.5.3 Marsh Management
[This section appears to be adequate]

EIS-64 3.3.5.8 Outfall Management

27.38 para. 3 Effects .. projects, however expansion of habitat is incorporated and this requires fresher conditions and will therefore displace fisheries intolerant of these fresher conditions.

3.3.6 Fisheries Resources

EIS-66 3.3.6.3 Marsh Management

27.39 para. 1 ...managed areas, the impact is might be significant (Herke, 1979), or it may be negligible (Hoese and Konikoff, unpubl., Herke, 1992; Wicker, 1983; Herke, 1971; Gagliano and Roberts 1987; Chabreck and Hoffpauir, 1962; Nyman, et al, 1990).

27.40 para. 3 ...experimental marsh management area. Other studies have showed no significant impact on fisheries (Hess, Paille, Moertle, and Guidry, 1988), while others have shown an increase in biomass production of fisheries (Herke, 1987, Wicker, 1983). Herke's findings are not unique to Louisiana. Similar ... (DeVoe and Baughman, 1986), however, South Carolina differs so much from Louisiana in soil types, tidal fluctuations, weather patterns, etc. that comparisons between the two states are sometimes meaningless. There is also ...

27.41 para. 4 ....;Rogers ,et al 19 2). Spe ation on how much reduct on o<curs ,... but ot-for-all possible-co mbna○ions much mor needs to be examined if any ≤inal conclusi can be made

EIS-67

27.42 para. 3 .... managed and unmanaged areas. This study indicat that overall populations of managed systems s maintained despite partial restrict ons on organism movements due to water control structures. In addition, this study suggest that recruitment, growth and eventual export rapidly increases in managed areas.

27.43 para. 4 [...SAV is sometimes c lime≤ as a benefit in marsh manag≤ment.. ? I has been claimed in previous sections [see pg. = 31, 61, and 63)]

27.44 para. 5 However, improving .... management. There are exceptions to this in that some of the landowners are extremely interested in

RESPONSE 27.37: Comment noted.

RESPONSE 27.38: We have added information contained in your suggestion.

RESPONSE 27.39: Please refer to Response 12.23.

RESPONSE 27.40: We have substantially revised this section of the report. We have already addressed criticisms of using South Carolina data.

RESPONSE 27.41: During our discussions, we agreed that this comment could be disregarded.

RESPONSE 27.42: Please refer to Response 12.24.

RESPONSE 27.43: Please refer to Response 12.25

27.44 Cont.

maintaining fisheries resources (CS-20, Mud Lake), and recognize the loss of habitat to have a long-term negative impact on tho fisheries resource they want to maintain. Landowners need to continuo to have a major impaot on methods for protoation of their lands since they are tho one impacted the most by these decisions. Historically, ...

27.45

EIS-68 3.3.6.4 para. 2

Hydrologic Restoration.

These projects often ~~typically~~ allow ...

3.3.7. Threatened and Endangered Species

EIS-72 3.3.7.3 para. 2

Marsh Management

... nowadays occur infrequently. Managed marshes are typically located farther inland than these turtles historically utilize.

27.46

Preservation of nesting and feeding areas from marsh losses and tho increased habitat possible with active management can increase resources available for birds, along with terrestrial mammals.

EIS-72 3.3.7.9 para. 8

Marsh Creation with Dredged Material

[It is difficult to draw similarities between hydrologic restoration and dredge material. Under hydrologic restoration the openings will be reduced to an area. If dredged spoil is placed in a containment levee then no access is initially afforded to estuarine species.]

27.47

... require evaluation. As in a11 other creation activities initial impaot upon existing marine organisms within dredge location vould adversely be effected, and this habitat would be removed from their possible utilization, however tho overall benefit of resource addition probably outweighs this negative impact.

3.3.9. Water Quality

EIS-78 Marsh Management para. 1

management projects is that salinity levels, on the average, would ash be increased-above-(he ~~levels-expected-without~~ decreased where active management scenarios are planned to meet this objective.

27.48

Other studies suggest that improved water quality parameters would be benefited under managed areas after temporary adverse effects during construction (Chabrock, et al, 1978).

RESPONSE 27.44: Please refer to Response 12.26.

RESPONSE 27.45: We have changed the word "typically" to "normally".

RESPONSE 27.46: We have added the first part of your suggested change. We did not add the second suggestion because we did not believe it was appropriate.

RESPONSE 27.47: We believe that the description of effects under Hydrologic Restoration is also appropriate for Marsh Creation with Dredged Material. In this section, we are refer only to effects to threatened and endangered species.

RESPONSE 27.48: Please refer to Response 12.27.

3.3.11 Property Ownership and Values

-84 3.3.11.1 Existing condition

para. 1 ~~Under-Louisiana-law,-...-the-State-of Louisiana.~~ [Delete this entire paragraph, ownership has already been mentioned earlier (p47-48 and EIS-82 L 83). This area is too complicated for this report, since the definition of tidal overflow lands can be interpreted differently, thus leading to the very controversial aspects of this paragraph.]

27.49

para. 3 ~~Property-values-...-surrounding-waters.~~ [Delete this entire paragraph - this report is regarding resource base, and not concerned with changing any property values.]

27.50

3.3.14. Recreational Opportunities

EIS-94 3.3.14.3 Marsh Management

para. 1 ~~The-possibility-...-Federal-permits.~~ [Delete this entire paragraph - this has been addressed in easements that have been prepared for 1st and 2nd lists to protect-the rights of landowners, the public gains benefit with increase resource base available to species that would not necessarily be confined to managed area - e.g., birds can fly in and out, and fish can swim in and out: in addition to the hurricane protection that additional marshes provide]

27.51

References to be added:

Broussard, Loland and Marty Floyd
1987. Involvement and Ongoing Program of the Soil Conservation Service in the Coastal Marsh of Louisiana, p.187-193, in Proc. of the Fourth Water Quality L Wetlands Management Conf., Sept. 24-25, 1987, New Orleans, LA.

Carney, D. F. and R. H. Chabreck
1977 *An* evaluation of spring drawdown as a waterfowl management practice in floating fresh marsh, 31st Ann. Conf. Southeast Assoc. Game and Fish Comm.

Chabreck, R. H. and C. M. Hoffpauir
1962 The Use of Weirs in Coastal Marsh Management in Louisiana, Proc. *Ann.* Conf. Southeast. Assoc. Game and Fish Comm. 16:103-112.

Chabreck, R. H.
1968 Weirs, Plugs, and Artifical Potholes for Management of Wildlife in Coastal Marshes, pp172-192 in Proc. 1st Coastal Marsh and Estuary Mngt. Symp.

RESPONSE 27.49: Please refer to Response 12.28.

RESPONSE 27.50: During our discussions, we agreed that this comment could be disregarded.

RESPONSE 27.51: We have deleted the part of this paragraph that we identified as being the most objectionable during our discussions.

The rest of the Department of Agriculture, Soil Conservation Service's comments pertain to the Basin Appendices. As stated previously, these comments were resolved during work group meetings of Task Force agency representatives and responses to individual comments have not been prepared.

Chabreck, R. H., et al
1978 Soil and Water Characteristics of Coastal Marshes Influenced by Weirs, in Proc. 3rd Symp. Coastal Marshes and Estuaries Mngt., p127-146.

Gagliano, S. M. and D. Roberts
1987 Management of Private Wetlands in Coastal Louisiana, presented at 4th Water Quality and Wetlands Mngt. Conf., 9pp.

Good, Bill and Darryl Clark
1993. Louisiana Department of Natural Resources Position Paper Concerning Wetland Management and Hydrologic Restoration, Baton Rouge, LA, 16pp.

Herke, W. H.
1971 Use of Natural and Semi-impounded Louisiana Tidal Marshes as Nurseries for Fishes and Crustaceans, PhD dissertation, LSU, 264pp.

Hess, T. J., Jr., R. F. Paille, R. J. Moertle, and K. P. Guidry.
1988. Results of an intensive marsh management program at Little Pecan Wildlife Management Area, in Marsh Management in Coastal Louisiana: Effects and Issues, Baton Rouge, June 7-10 1988, p278-310.

Larrick, W. D., Jr. and Chabreck, R. H.
1976 Effect of Weirs on Aquatic Vegetation along Louisiana Coast, Proc. Southeast. Assoc. Game and Fish Comm., 30:581-589.

Leblanc, Rufus J.
1988 The Geological History of the Marshes of Coastal Louisiana, in Proceedings of a Symposium, Marsh Management in Coastal Louisiana: Effects and Issues, Baton Rouge, June 7-10 1988, pl-27.

Linscombe, Greg and Noel Kindler
1984 Fur Harvest Distribution in Coastal Louisiana in Proc. 4th Coastal Marsh and Estuary Management Symp., p187-199

Nyman, J. A., R. H. Chabreck, and R. G. Linscombe
1990 Effects of Weir Management on Marsh Loss, Marsh Island, Louisiana, Env. Mngt. 14:809-814.

Nyman, J. A., R. H. Chabreck, R. D. DeLaune, and W. H. Patrick, Jr.
1993 Submergence, Salt-Water Intrusion, and Managed Gulf Coast Marshes, in Proc. 8th Symp. Coastal and Ocean Mngt, p1690-1704.

U. S. Dept. Interior - Fish and Wildlife Service
1992 Preliminary Findings of the 1991 National Survey of Fishing, Hunting and Wildlife Associated Recreation, Wash. DC, 24pp

U. S. Dept. Interior - Fish and Wildlife Service
1988 1985 National Survey of Fishing, Hunting and Wildlife Associated Recreation, Wash. DC, 167pp

Wicker, K. M., et al
1983 Rockefeller Sate Wildlife Refuge and Game Preserve Evaluation of Wetland Management Techniques. La. Dept. Nat. Res., Coastal Mngt. Sect., 56pp.

U.S. Department of Agriculture - Soil Conservation Service
1977. Gulf Coast Wetlands Handbook. Alexandria, LA, 82pp.

U.S. Department of Agriculture - Soil Conservation Service, 1976, Ascension Parish Soils Survey, 55+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1978, Assumption Parish Soils Survey, 50+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1988, Calcasieu Parish Soils Survey, 161+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1993 (scheduled publication), Cameron Parish Soils Survey.

U.S. Department of Agriculture - Soil Conservation Service, 1977, Iberia Parish Soils Survey, 67+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1982, Jefferson Parish Soils Survey, 95+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1983, Lafourche Parish Soils Survey, 106+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1991, Livingston Parish Soils Survey, 159+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1989, Orleans Parish Soils Survey, 89+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1993 (scheduled publication), Plaquemines Parish Soils Survey.

U.S. Department of Agriculture - Soil Conservation Service, 1989, St. Bernard Parish Soils Survey, 96+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1987, St. Charles Parish Soils Survey, 115+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1973, St. James and St. John the Baptist Parishes Soils Survey, 50+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1977, St. Martin Parish Soils Survey, 71+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1959, St. Mary Parish Soils Survey, 45+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1990, St. Tammany Parish Soils Survey, 141+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1990, Tangipahoa Pariah Soils Survey, 142+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1960, Terrebonne Parish Soils Survey, 43+pp.

U.S. Department of Agriculture - Soil Conservation Service, 1994 (scheduled publication), Vermilion Parish Soils survey.

USDA - Soil Conservation Service Comments on Louisiana Coastal Wetlands Restoration Plan, Individual Basin Reports

PONTCHARTRAIN BASIN, Appendix A

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Pontchartrain Basin.

BRETON SOUND BASIN, Appendix B

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Breton Sound Basin.

MISSISSIPPI RIVER DELTA BASIN, Appendix C

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Mississippi River Delta Basin.

BARATARIA BASIN, Appendix D

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program vith local landowners in the Barataria Basin.

TERREBONNE BASIN, Appendix E

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Terrebonne Basin. Two of the larger scale projects:

1) a 500,000 acre marsh conservation plan with the landowners in the Penchant Sub-Basin
2) an ongoing resource plan for a potential watershed project for the Lake Boudreaux area in the Timbalier Sub-Basin

This is being done in conjunction with local landowners and South Terrebonne Tidewater Management and Conservation District.

Pg. 9 Para. 3. Sentence 2.
... to man-made impediments to natural distribution and retention of sediments.

Pg. 33 PTE-26 ?Description". Para. 1.
[Delete last sentence and insert the following:]
Tho concept of this management plan is to better utilize tho sediments and nutrients in tho basin by moans of hydrologic restoration. Sediments are introduced to tho area via tho Gulf Intracoastal Waterway (GIWW) and tho Atchafalaya River. At present a large percentage of these sediments are not retained within tho interior marsh areas because of rapid water exchange rates. Tho plan proposes tor

1) restore some historic water flow patterns through natural bayous (distibutary channels).
2) allow bettor distribution and retention of sediment-laden waters.
3) increase freshwater flov to intermediate and brackish marsh areas by utilizing oilfield and pipeline canals.
4) provide outlets to reduce flooding during high-water periods.
5) control outflow velocities at major outlets.

Pg. 34. Para. 5. "Effects" Sentence 2.
...of this hydrologic restoration is to increase sediment retention in the fresh marshes and to increase freshwater and sediment retention ~~and flow~~ to intermediate and brackish marsh areas~~, it can ..... will occur~~.

ATCHAFALAYA BASIN, Appendix F

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Atchafalaya Basin.

TECHE/VERMILION BASIN, Appendix G

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Teche/Vermilion Basin.

MERMENTAU BASIN, Appendix H

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Mermentau Basin.

CALCASIEU/SABINE BASIN, Appendix I

Add:
Pg. 1. EXISTING PROJECTS AND PROGRAMS

U.S.D.A. SOIL CONSERVATION SERVICE
The Soil Conservation Service has an active marsh conservation planning program with local landowners in the Calcasieu/Sabine Basin.

SAVE OUR TICKFAW

TICKFAW RIVER BASIN GROUP

P.O. Box 549, Springfield, LA 70462
Phone (504) 542-6266
(504) 695-6571 - FAX (504) 542-6371

Comment 28

August 30, 1993

CELMN-PD-RS
V.S. Army Engineer District, New Orleans
P. O. Box 60267
New Orleans, LA 70160-0267

Attention: Mr. Richard Boe
EIS Coordinator

Dear Mr. Boe,

I have read the draft executive summary of the Louisiana Coastal Wetlande Restoration Plan and thank you people for doing a11 this work to solve this urgent problem.

I suggest that more emphasis be placed on allowing the natural process that built South Louisiana be unleased to help correct these problems. While we must protect from nature those things for which we have the highest priority our river port, our towns and factories - natural forces rhould be allowed to work around us. This means accepting a certain amount of change that happens in this type of dynamic geological landscape. Current government philosophy holds that we can manage this huge complicated system and somehow make the most people happy. I don't believe that this can be done. We have seen that our efforts often times bring on unforseen and unwanted results. The system is too complex, too chaotic to manage well.

Sincerely yours,

Ben Al Taylor

BAT/plk

— PROUDLY PRINTED ON RECYCLED PAPER —

RESPONSE 28.1: The plan places great emphasis on using natural processes for wetland restoration, especially in the long term.

U.S. Department of Housing and Urban Development

Fort Worth Regional Office, Region VI
1600 Throckmorton
P. O. Box 2905
Fort Worth, Texas 76113-2905

August 12, 1993

Mr. Richard E. Boe
U.S. Army Corps of Engineers, CELMN-PD-RS
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Boe:

SUBJECT: Draft Environmental Impact Statement (DEIS), Louisiana Coastal Wetlands Restoration Plan

The subject Draft Environmental Impact Statement with its appendices has been reviewed by our New Orleans Office.

29.1 This Department has no jurisdiction, expertise, or authority over wetlands. It is for this reason that we submit a no comment response to the subject Draft EIS.

Sincerely,

I. J. Ramsbottom
Environmental Clearance Officer

RESPONSE 29.1: Comment acknowledged

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

SEP 3 1993

ER 93/668

Mr. R. H. Schroeder, Jr.
Chief, Planning Division
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Schroeder:

The Department of the Interior has reviewed the Draft Louisiana Coastal Wetlands Restoration Plan Report and Environmental Impact Statement. We have the following comments and recommendations.

General Comments

The draft report, appendices, and programmatic draft environmental impact statement (PDEIS) are well written. Those documents, in general, adequately address natural resources which concern this Department and the anticipated effects of the recommended wetland restoration measures on those resources. The Department of the Interior has been involved throughout the formulation of the draft Louisiana Coastal Wetlands Restoration Plan, and supports the overall restoration strategy recommended for each of the nine coastal basins addressed in that plan.

30.1 The Restoration Plan describes a very complex set of problems in coastal Louisiana that has led to the accelerated loss of coastal wetlands. In review of these problems, it becomes apparent that causes of land loss in the Chenier Plain are somewhat different from causes in the Deltaic Plain. Perhaps even more important to this plan, the types of restoration opportunities available in the two regions are significantly different.

opportunities available in the Chenier Plain are primarily shoreline protection, hydrologic and salinity management, and some limited freshwater diversion. These actions address more local, symptomatic problems that are generally caused by the underlying problems of subsidence, salinity intrusion, hydrologic modifications, easily eroded soils, and an inadequate sediment source. Unfortunately, a long-term sediment source is not available to this region to help address these more basic problems. Hence, a skillful reliance upon well-understood, protective projects is needed.

In the Deltaic Plain, substantial opportunities exist for diverting sediment from the Mississippi and Atchafalaya Rivers to reestablish natural land building processes. Although those projects are more expensive to implement, they would provide long-term solutions to the basic, underlying problems of land loss, subsidence, the enlarging tidal prism, and erosion of organic soils. Sediment diversion projects would reestablish natural processes that were disrupted by human activities.

The Restoration Plan recognizes that there is a limit to the number of diversions that can be constructed and the volume of water that is available to distribute sediment without adversely affecting navigation channel maintenance and the fresh water supply of New Orleans and other communities. The Plan further recognizes that detailed studies will be required to evaluate the various options for improving dispersal of sediment and fresh water from the Mississippi and Atchafalaya rivers to the Deltaic Plain. A wide range of economic, social, engineering and environmental factors must be addressed during detailed analyses of large-scale sediment diversion proposals. Those analyses and the required project design and construction will likely take more than 10 years to complete. In the meantime, other critical projects and smaller projects recommended in the basin restoration plans are needed to prolong the life of existing wetlands until the larger projects are installed and more natural hydrologic and sedimentation regimes can be reestablished. Furthermore, the smaller projects would be designed to complement the large-scale projects.

30.1 Cont.

The Department of the Interior urges expeditious initiation of studies needed to determine feasibility and optimum location of major sediment diversion projects, as well as other large-scale projects, that would establish a framework for stabilizing, restoring, and creating deltaic wetlands. Once that framework is in place, the need for many of the smaller, site-specific restoration projects will be reduced, and there will be a greater probability of success of those small projects which are installed. We plan to continue to advocate those measures that provide the most cost-effective approach to long-term conservation of coastal wetlands.

Specific Comments

Main Reoort and Appendices

30.2 Page 5, PROGRAM STATUS - We recommend deletion of the phrase "... for each of the five years of its duration."

Page 25 and 26, Fish and Wildlife Values - While the Louisiana coastal wetlands are of great economic importance, those wetlands provide other nationally important fish and wildlife habitat values that transcend monetary evaluation. Therefore, we recommend that the following wording be added to this section.

The wetlands of coastal Louisiana are a vital component of the Gulf Coast Joint Venture, established by the Fish and Wildlife Service to help achieve the goals of the North American Waterfowl Management Plan. Those wetlands and associated coastal habitats also support an estimated 150 nesting colonies of wading birds, shorebirds, and seabirds, representing 25 species and hundreds of thousand nesting adults. The endangered bald eagle and brown pelican nest extensively in coastal Louisiana. The fact that coastal Louisiana contains seven National Wildlife Refuges, encompassing over 257,000 acres, attests to the national importance of that area to fish and wildlife.

Paaes 33-47. SOLUTIONS TO WETLAND LOSS IN LOUISIANA - This section repeatedly advocates sediment introduction as the primary solution to Louisiana's coastal wetland loss problem. We agree that improved sediment and freshwater distribution is key to effective restoration of those wetlands. However, the approach taken in the individual basin restoration plans was to address wetland loss problems via the most practical solutions available in those basins. In some basins, large-scale freshwater and sediment introduction was deemed to be impractical, and alternate restoration measures were recommended. The basin plans recommended numerous short-term projects as well as long term measures, while the focus of this section is mostly on long-term measures. Based on these discrepancies, this section should be revised to be more consistent with the basin restoration plans.

30.2 cont.

This section should also be revised to acknowledge that the Task Force, with input from researchers, has developed rigorous protocols for monitoring restoration projects; details regarding those protocols are shown in Exhibit 3.

Paae 44. Marsh Management Section. paragraph 3 - This paragraph should be modified to indicate that properly designed and operated marsh management projects can serve as useful tools for reducing wetland loss, especially where it is not feasible to transport sediments into subsiding wetlands. Marsh management can also be used as an interim wetland conservation tool while more ambitious projects such as large-scale sediment introduction are being planned and implemented.

Page 53. paragraph 5 - We recommend changing "develop" to "demonstrate" in the first sentence of this paragraph, to be in agreement with pertinent language in the Coastal Wetlands Planning, Protection and Restoration Act.

Paae 57. Fiaure PO-1 - Key symbols used in this figure should be defined in the legend.

Page 74. paragraph 1 - It is unclear how impoundment is causing marsh loss in the outfall area of the Caernarvon Freshwater Diversion Structure, as indicated in the fifth sentence.

Page 88, paragraph 2 - In the fourth sentence, "cannot" should be changed to "should not".

Page 94, Table BA-1 - The column designated "Barataria" should be deleted; it does not represent one of the nine regions listed in paragraph 1 on page 93. We also recommend that a "Total" column be added, to show the total acreage of each habitat type present. Page 125, Table AT-1 - In the fourth column, a minus symbol should be used to indicate a projected gain of 23,410 acres in Subbasin 2 in 50 years.

Page 129. IMPLEMENTATION OF SELECTED PLAN - We recommend that this section specify that an interagency work group will be established to help guide placement of dredged material during maintenance of the Atchafalaya Bay navigation channel, to optimize delta development.

Page 137, paragraph 2 - This paragraph repeats the last paragraph on page 136, and should be deleted.

Page 144, Figure ME-1 - This figure should be modified to indicate that the basin boundary encompasses wetland north of the Gulf Intracoastal Waterway.

Page 145, paragraph 1 - The last sentence is inaccurate. The channel's spoil banks, not the channel itself, have reduced drainage. Also, the channel's spoil banks are maintained to protect the marshes from erosion and saltwater intrusion.

30.2 Cont.

Paae 147. Fiaure ME-2 - The figure indicates an area of critically eroding interior marsh just south of Grand Chenier and east of Lower Mud Lake. That area is accreting, not eroding..

Page 172. Table 8 - The Secretary of the Interior's representative on the Task Force is the Regional Director, Southeast Region, U.S. Fish and Wildlife Service.

Exhibit 4. Studies. Plans. Programs, and Existing Projects

Page 7, paragraph 2 - This paragraph should indicate that the Fish and Wildlife Service administers seven National Wildlife Refuges in coastal Louisiana.

Paae 8. paragraph 4 - This paragraph should be deleted; the Fish and Wildlife Service no longer administers a Partners for Waterfowl Program. The private lands activities carried out by the Fish and Wildlife Service are now administered under its Partners for Wildlife Program.

Draft Programmatic Environmental Impact Statement

30.3

Paae EIS-27. Section 2.3.2. Marsh Management. The description of marsh management should be condensed so that it is commensurate with the description of the other 12 project types. Specifically, this section should be limited to an easily understood definition of the

0.3 cont. project type; a brief description of active and passive management measures and operational details; a brief discussion of management benefits and detriments; the status of management projects in the restoration plan; and the status of the PDEIS preparation for marsh management in coastal Louisiana.

0.4 gaae EIS-30, Section 2.3.2.1.2., paragraph 2 - In recent years, permits for structural management of brackish marshes have regularly required that actively managed flap-gated, variable-crest water control structures include a vertical slot in their variable-crest portions. Typically, the slot functions only during non-drawdown periods. The slot is provided prior to structure installation; this modification is very inexpensive and involves little or no additional maintenance costs.

0.5 Page EIS-32, last paragraph - Phase 3 should be described as including operations that range from simple freshwater introduction to more complicated flow-through operations.

In the third sentence, it should be noted that the desired responses include increased sediment introduction and retention.

0.6 Page EIS-33, last paragraph - The primary focus of marsh management is the control of salinities and water levels.

0.7 Paae EIS-39, paragraph 4 - This paragraph should acknowledge that potential contaminant-related problems would be addressed before a decision is made to proceed with implementation of the "red mud" project.

0.8 Pages EIS-50 throuah EIS-53, Section 3.3.2.3 - This section should acknowledge the extent to which the Louisiana coastal marshes have been altered and are deteriorating, and the effects of marsh management on factors contributing to the deterioration process. In response to widespread salinity increases, brackish marsh plant communities are invading intermediate and fresh marshes. Human hydrologic alterations, especially canals, have greatly accelerated this conversion by allowing saltwater intrusion and increased water exchange rates. The rapidity of these man-induced changes has exceeded the ability of wetland plant communities to adapt. The result has been rapid marsh loss, especially in organic soil areas. If brackish marsh vegetation becomes established on the remaining marsh, the growth of brackish marsh plants is often poor due to the lack of mineral material in the soils. Under such conditions, continued deterioration usually results in the near-total conversion of marsh to open water.

0.9 The proposed marsh management projects would likely be installed in hydrologically altered areas where sediment and freshwater introduction is not feasible. Management would attempt to partially re-establish and maintain historic salinities and water exchange rates. Viewed in this context, marsh management is an attempt to actively assist marshes in counteracting the detrimental effects of man-induced hydrologic changes.

RESPONSE 30.1: Comments acknowledged and appreciated.

RESPONSE 30.2: All comments on the executive summary, main report, and basin plans submitted by Task Force agencies have been addressed by work groups made up of representatives from those agencies. The comments are not specifically responded to in this document.

RESPONSE 30.3: We have considerably shortened Section 2.3.2. by eliminating some redundant items and by moving all discussion of effects to appropriate sections within Section 3 of the report. The discussions of marsh management and its effects is considerably longer and more specific than discussions of other project types because there is considerably more literature published on marsh management.

RESPONSE 30.4: Your suggestion has been added in the fourth paragraph under the description of active management where it is more appropriate.

RESPONSE 30.5: We have included your suggestions in the last paragraph under Section 2.3.2.

RESPONSE 30.6: We have modified the text in the first paragraph under Section 2.3.2. to more closely reflect your suggestion. We have not included salinity as the focus of marsh management because we believe that salinity control is secondary to water control.

RESPONSE 30.7: We have included your suggestion under section 3.3.9.9. where it is more appropriate.

RESPONSE 30.8: Although we agree with the main points of your comment, it doesn't fit into the discussion of effects. It is more of a problem statement. In the EIS we have referenced the main report for a detailed description of the problems that have caused coastal wetland loss.

RESPONSE 30.9: Most of your suggestion has been added to the end of the first paragraph under Section 2.3.2.

30.10 Paae EIS-60. Section 3.3.4.2 - Submerged aquatic vegetation may prevent formation of wind-driven waves and dissipate wind-driven wave energy thus reducing erosion of marsh edges.

30.11 Page EIS-65. Fisheries Resources - This section should include a brief discussion of the freshwater fish communities present in coastal Louisiana and the effects of wetland losses and salinity intrusion on those communities.

30.12 paae EIS-67. first paragraph - During waterfowl hunting and trapping seasons, stoplogs are often set at, or slightly below, marsh level.

Appendix A. Pontchartrain Basin

Page 29a and 30. Description of Protect Features - These paragraphs incorrectly imply that the recommended features have been completed.

Appendix D. Barataria Basin

paae ii. Table of Contents - Long Term Supporting Projects should be listed after Near Term Supporting Projects.

paae 7. Table 1. - The TOTAL figures actually represent subtotals. The sum of those subtotals should also be provided to ensure agreement with acreage totals provided in the text.

Paae 10. paragraph 3 - The phrase "...,erosion and sediment export" should be added to the end of the last sentence.

Paue 13. OVERVIEW OF BASIN STRATEGY - Strategy 3 should be revised to read as follows: "Protection of deteriorating canal banks and shorelines of interior water bodies to stabilize and retain adjacent healthy marshes."

Page 14. paragraph 4 - We recommend changing "may" to "will" in the first sentence.

Paae 16. paragraph 3 - We suggest adding the following sentence to the end of this paragraph: "Freshwater diversions will be coordinated with sediment diversion to minimize over-freshening of the basin."

Pages 19, 20, and 25 - We recommend combining the treatment of sediment and freshwater diversions into an integrated discussion.

Appendix E. Terrebonne Basin

Page 5. last paragraph - In the third sentence, it would be more correct to state that the transition from intermediate to brackish marsh occurs in the Lost Lake/Jug Lake area.

Page 10. paragraph 1 - Increasing salinities in the GIWW might also be caused by land loss in the Timbalier Subbasin and subsequent saltwater intrusion northward into the GIWW.

RESPONSE 30.10: This information is included in the first paragraph under section 3.3.4.1.

RESPONSE 30.11: We have included the additional information that you provided us under a separate cover.

RESPONSE 30.12: We have modified the text as per your suggestion.

The rest of the Department of Interior's comments (except for their closing summary which we acknowledge) pertain to the Basin Appendices. As stated previously, these comments were resolved during work group meetings of Task Force agency representatives and responses to individual comments have not been prepared.

Page 10, last paragraph - The first sentence should begin, "The estimated loss...."

Page 11, paragraph 4 - In the second sentence, the word "declining" should precede "long-term productivity."

Page 12, Near-term strategies - The Fish and Wildlife Service is not convinced that protection and restoration of the barrier islands is the "highest priority objective." The Service is not aware that such a determination was made by the basin team.

Page 17, paragraph 3 - The last sentence notes 117,000 acres of marsh would be "quickly lost" with loss of the barrier islands. That estimate was apparently based on interpretation of the model study results. The Fish and Wildlife Service has identified several technical problems with the modeling study. Therefore, we recommend that the model-based estimates of marsh loss be deleted until those problems are resolved.

Appendix G, Teche Vermilion Basin

Page 5, Biological Resources - The description of fisheries resources should to be expanded to better document the biological value of the basin's wetlands. We recommend that paragraph 2 be replaced with the following paragraph:

> The basin supports an important and diverse fishery. In fresh and low-salinity areas, catfishes, gars, and freshwater drum are commercially harvested. Those areas also support a recreational fishery for largemouth bass, crappie, other sunfishes, and catfishes. The basin's marshes also provide valuable nursery habitat for many estuarine-dependent commercially and recreationally important species such as white shrimp, blue crab, Gulf menhaden, Atlantic croaker, sand seatrout, spotted seatrout, red drum, black drum, and southern flounder. Oysters are commercially harvested from Southwest Pass and the Gulf south of Marsh Island.

Page 6, paragraph 2 - We recommend that the first sentence be reworded as: "The underlying causes of interior marsh hot spots are natural or human-induced disruption of sediment supply, and increased tidal scour."

Page 8, paragraph 2 - The second sentence should be reworded as: "However, productivity will eventually decline as vegetated wetlands are lost and organic matter production decreases below the threshold needed to sustain such high productivity."

Page 8, paragraph 6 - We suggest that the first and second sentences be reworded as follows:

> Addressing such a basin-wide problem as shoreline erosion will require numerous independent shoreline protection and

> sediment trapping projects. Projects to address hot spot loss will be developed as needed.

The third sentence repeats ideas conveyed in the first two sentences, and should be deleted.

Page 9, Selected Plan - We suggest that the first sentence be altered to read "A combination of defensive and offensive measures ...."

Appendix H, Mermentau Basin

Page 9, LAKES SUBBASIN - The last sentence of the first paragraph is inaccurate. The channel's spoil banks, not the channel itself, have reduced drainage. Those spoil banks are also maintained to protect the adjacent marshes from intrusion and erosion. The first sentence of the second paragraph is redundant and should be deleted.

Page 11, paragraph 2, last sentence - The phrase "Prior to its closure in 1985," should precede the sentence, and the word "contributes" should be changed to "contributed".

Page 14, PLANNING OBJECTIVES FOR THE BASIN - For clarity, the second sentence should be modified to read as follows:

> Although deposition of Atchafalaya River sediments is building marsh along the Mermentau Basin's eastern Gulf shoreline, the remainder of the basin is sediment-starved and deteriorating. The potential for large-scale wetland accretion in those areas is virtually non-existent due to lack of sediment input.

Page 15 - The figure indicates an area of critically eroding interior marsh just south of Grand Chenier and east of Lower Mud Lake. That area is accreting, not eroding.

Appendix I, Calcasieu/Sabine Basin

Page 2, paragraph 2 - The last sentence of this paragraph refers to a U.S. Fish and Wildlife Service project constructed on Sabine National Wildlife Refuge; that sentence should be moved to the appropriate section on Page 1.

Page 4, paragraph 3 - We recommend deleting the phrase, "... as well as riverine sediment deposition over time...."

Page 4, paragraph 6 - To more clearly explain the cause and effect relationship regarding marsh deterioration within the basin, the first sentence should be modified to read as follows:

> Because of canal-induced saltwater intrusion, the vast interior fresh marshes south of the GIWW experienced substantial deterioration and conversion to more saline marsh types. Presently, fresh marshes exist in only three fresh

marsh impoundments and a few very small remnants located elsewhere.

paae 6. last paragraph - The following sentence should be inserted after the first sentence:

Those impoundments, however, have preserved and restored fresh marshes and associated fish and wildlife resources which once dominated basin marshes prior to man-induced habitat changes.

paae 8. paragraph 1 - The fourth sentence should be modified to read: "Almost all fresh marsh was converted to intermediate and brackish marsh by the late 1970's, except marsh within freshwater impoundments and that preserved...."

paae 12. paragraph 1 - In the second sentence, the words "detrimental water" should be used to modify "circulation patterns." Similarly, the words "to create marsh" should be inserted after "pumped dredged material."

Paaes 14 throuah 16. Figures 3 throuah 5 - The legend does not indicate what the heavy dark line delineates. If that line delineates the boundaries of the Calcasieu/Sabine Basin, it has erroneously excluded marshes north of the Gulf Intracoastal Waterway (GIWW), between the Sabine River and the Calcasieu River, and the marshes adjacent to Sweet Lake and Willow Lake.

In Figure 4, perimeter control is indicated along the northern boundary of Sabine National Wildlife Refuge. This area is not part of the basin's perimeter. However, a critical project is located in that area that would benefit a large area of interior marshes. To avoid confusion, the designation of perimeter control in this area should be avoided.

Paae 17. Proiect XCS-47/48i/48j/48p - This project should be titled: "Sabine Refuge Water Control Structures."

Page 19. Figure 6 - Several projects listed in Table 4 are not shown in Figure 6.

Paae 25. Proiect CS-4AIPCS-7 - The project description should be revised to indicate that only funds for maintenance (i.e., not operation) of the Cameron-Creole Watershed lakeshore levee and five lakeshore water control structures are requested. Fish and Wildlife Service personnel operate those structures.

paae 25. Proiect XCS-42 - The project location is the south bank of the GIWW in the vicinity of Sweet Lake.

Page 27. Proiect XCS-33 - The project would provide additional releases from Toledo Bend and Sam Rayburn Reservoirs to reduce excessive salinities in Sabine Lake and adjacent marshes. An additional key issue would be the potential reduction in marine fisheries production within affected marshes.

Paae 29. Proiect XCS-46 - Regarding the project effects, the proposed structure would help restore the original hydrologic boundary between the Calcasieu and Sabine estuaries.

paae 31. Proiect XCS-47.481. J. & P - The project title should be "Replace Sabine National Wildlife Refuge Water Control Structures." The project's physical characteristics involve replacing existing structures with those having substantially greater discharge capability and management flexibility. The "(8)" should be deleted.

paae 33. Proiect XCS-48F - The scheme of operation will be formulated via consultation among several resource agencies during the Section 404 permitting process, and not unilaterally by the Fish and Wildlife Service.

paae 34. Proiect CS-13 - Key issues for this project are the same as those for project CS-4B.

paae 35. Proiect CS-14 - The problems and opportunities statement should be reworded as follows: "Vegetation in the area is deteriorating...."

Page 35. Proiect XCS-52 - The proposed plug will be installed in a pipeline canal, not a borrow canal. A key issue is reduced boater access and subsequent landowner opposition.

Paae 35. Proiect CS-15 - Regarding problems and opportunities, marshes edges adjacent to large shallow ponds are eroding.

paae 35. Proiect CS-10 - The project location is on the eastern shore of Calcasieu Lake. Key issues include possible reduction of marine fisheries production within the project area.

Page 38. Proiect XCS-48(NO-2) - The problems and opportunities should be stated as "Maintenance and improved operation of an existing marsh management project." The description should read: "Rebuild existing levees, install additional water control structures for improved water control,...." Because an existing marsh management project is involved, no additional impacts to marine fisheries are expected. In fact, the project may improve fish and shellfish access. We do not expect the project to additional adverse effects on marine fisheries.

Paae 38. Proiect XCS-48(NO-4) - The problem is severe erosion threatening an existing marsh management levee.

Paae 40. Proiect XCS-48(NO-3) - A key issue is the potential reduction of marine fisheries production.

Page 41. Proiect XCS-48(NO-17) - A key issue is the potential reduction of marine fisheries production.

Paae 42. Proiect XCS-48(SA-5) - The project would include only one water control structure.

Page 43. Project XCS-48(SA-8) - The key problem is that higher-salinity Calcasieu Lake water circumvents the Headquarters Canal water control structure during very high tides. The project description should read: "Repair breaks in Headquarters Canal spoil bank and breach Shell Canal spoil bank to establish a new water exchange route between marsh ponds and Shell Canal." Regarding key issues, we believe that this project would increase fisheries production.

Summary Comments

Our Fish and Wildlife Service, under the authority of the Fish and Wildlife Coordination Act, plans to continue active involvement in the evaluation, selection, design and implementation of projects identified in the restoration plan, and in future revisions of that plan. We plan to place special emphasis on our involvement of the detailed analysis of the recommended full-scale, uncontrolled diversion of the Mississippi River into Breton Sound. That diversion is expected to have major impacts on Delta National Wildlife Refuge, and may effect Breton National Wildlife Refuge. The position of the Service on that diversion will be presented following a detailed analysis of its anticipated impacts on fish and wildlife resources, to be completed during the feasibility study.

We hope these comments and recommendations will be of assistance to your efforts.

Sincerely,

for Nancy Blanchard

Jonathan P. Deason
Director
Office of Environmental Affairs

Mr. Richard Boe
EIS coordinator
U. S. Army Corps of Engineers Planning Section
New Orleans District
P.O. BOX 60267
Foot of Prytania Street
New Orleans, Louisiana 70160-0267

August 10, 1993

Hand Delivered

The opinions expressed are entirely my own.

31.1 The Planning, Protection and Restoration Act Section 303. (a)(1) and (b)(1) and (2) directs the task force to develop a plan and projects for long-term conservation of coastal wetlands based on cost effectiveness in creating, restoring, and protecting or enhancing coastal wetlands. Its acknowledged in the draft plan that the trends of subsidence and deterioration of the deltaic basins will continue unless natural deltaic creation forces are reestablished in those basins. Without the reintroduction of sediment all shoreline protection efforts and marsh management projects will become increasingly unstable. Such efforts are then destine to fail after 10-20 years, without adequate long-term conservation of coastal wetlands.

Consequently pursuit of small shoreline and marsh maintenance projects is in conflict with Public Law 101-646, Title III.

31.2 Funds will be best used if applied to projects having a basin wide influence thereby establishing a long term stable framework in which the state and local governments can pursue smaller although needed shoreline and marsh managements projects which protect relatively small areas of the basin.

31.3 Furthermore it is my understanding by the very nature of the funds (Federal Monies) that projects derived from these funds must benefit a majority of people and not just a select few in a select area. Such use of Federal money for supportive projects, not including demonstration projects, would be in direct conflict with the Coastal Zone Management Act of 1972, 16 U.S.C.A. Section 1456 b.(c).

31.4 And in accordance with 40 CFR, Title 40 Chapter V Section 1500.2(b) ".....environmental impact statements shall be supported by evidence that agencies have made the necessary environmental analyses." The environmental analysis and the rational used in determining project consistency and appropriateness for the supportive projects in the Barataria Basin should be provided in this document for agency and public review and if this EIS is addressing primarily projects of 5 million and below then these project definitely need agency and public review before they are included in this EIS.

RESPONSE 31.1: Your comment is similar to others, in that you are promoting efforts to reestablish deltaic processes. We acknowledge this recommendation and we have placed greater emphasis on sediment and freshwater diversion projects in the report. We disagree that small shoreline and marsh maintenance projects are in conflict with the CWPPRA. The Task Force has determined that a 20 year project life is assumed for the small-scale projects implemented under the CWPPRA. Most large-scale projects would have a project life of 50 years. All projects constructed under the CWPPRA are expected to be functional for at least 20 years.

RESPONSE 31.2: The priority project lists have, so far, contained relatively small, more diffuse projects that can help hold the line while larger, more comprehensive projects are studied and designed. The Restoration Plan has been rewritten to place added emphasis on the need for the large-scale restoration efforts that you support. There is general agreement among the agencies represented on the CWPPRA Task Force that our attention now needs to be focused on large-scale projects that will have far reaching benefits. However, most of these costly large-scale projects will have to be funded under separate appropriations. The priority project lists allow the Federal government to add money to the State's limited resources and complete much-needed short-term projects that will help to keep the wetlands that we have until the long-term projects can be studied and implemented.

RESPONSE 31.3: Projects implemented on private lands benefit the general public through all of the resources that the wetlands provide, such as fish and wildlife resources which can enter and leave project areas. We could not determine any relation between your comment and Sections 1456(b) or (c) of the Coastal Zone Management Act of 1972.

RESPONSE 31.4: All this EIS and accompanying documentation is attempting to do is inform the public of the projects that are proposed for the Restoration Plan and disclose the generic types of effects that can be expected from the different types of projects. Conceptual plans for the restoration of each hydrologic basin are presented but by no means are the plans unchangeable. One of the biggest tasks that lies ahead is to determine what is the best overall option for distributing the freshwater and sediment resources of the Mississippi River. The outcome of this effort would obviously effect the Barataria Basin. A master plan to allocate the resources of these rivers will likely require an EIS. As stated in Section 1.3. of the EIS, each project implemented through the CWPPRA will have its own National Environmental Policy Act documentation and will have to be implemented in accordance with all applicable Federal, State, and local laws, rules, and regulations. In addition, plans to implement a basin-wide restoration effort could require an EIS.

40 million is not a lot of money and considering the entire LA Coastal Zone and the job in front of us I don't see that this EIS is addressing the major issues at all. The MRGO needs to be resolved (and not just rip-raped) now. The BBWW is getting wider and wider every year and nothing has been said about this problem (rip-rap is not an answer). The barrier islands will some day have to be abandoned and nothing was said Wednesday, August 10, 1993 about an alternate barrier system as suggested in the EIS. 31.5

What was brought up and is extremely important is that if these issues are not addressed and now it will end up costing the tax payers more in flood control, protection and reimbursement for job, family,. habitat and disaster relief. 31.6

Patricia Willging
721 Dumaine St. Apt. B
New Orleans, LA 70116

RESPONSE 31.5: We agree that the existing funding provided through the CWPPRA is not adequate to address the major problems facing coastal Louisiana. One freshwater diversion project can cost much more than the 40 million dollars available through the CWPPRA and matching state contributions each year. (The Davis Pond Freshwater Diversion will cost approximately 57 million dollars.) Large-scale, comprehensive projects are identified in the Restoration Plan but the funding for implementation of these solutions to major problems may have to come through specific authorizations. If not, more than one year's priority list funding may be necessary to implement a aingle large-scale project.

As described in the Pontchartrain Basin plan, the most cost-effective and environmentally desirable way of resolving "the MRGO problem" is the Bonnet Carré diversion and rip-rap and marsh creation along the MRGO.

A project on the first Priority Project List will create marsh with material dredged from the Barataria Bay Waterway. The dikes to retain this material will stabilize portions of the waterway. Another project in the Barataria Basin plan proposes to stabilize another portion of the Barataria Bay Waterway with dredged material.

Both the Barataria and Terrebonne Basin plans include restoration of barrier islands as critical short-term projects. The first 3 priority project lists contain a total of four barrier island restoration projects.

RESPONSE 31.6: We agree and hope that we have made this point clear in the report.

APPENDIX A

SUMMARY OF PUBLIC HEARING ON THE CWPPRA RESTORATION PLAN ENVIRONMENTAL IMPACT STATEMENT

August 11, 1993

Introduction

Colonel Michael Diffley, District Engineer of the New Orleans District, USACE, and Chairman of the CWPPRA Task Force, welcomed everyone to the meeting. He asked everyone who wanted to speak to please fill out a card with their name and affiliation so that they could be called upon to present their comments. Colonel Diffley then asked the representatives of the other Task Force agencies to introduce themselves, which they did. The other representatives in attendance were Ric Ruebsamen, representing the Department of Commerce, National Marine Fisheries Service; David Frugé representing the Department of the Interior, U.S. Fish and Wildlife Service; Len Bahr, representing the Office of the Governor, Office of Coastal Activities; Norm Thomas, representing the Environmental Protection Agency; and Benny Landreneau, representing the Department of Agriculture, Soil Conservation Service.

Slide Presentation

Colonel Diffley presented a slide presentation to the audience. The slide presentation included information on the priority project lists and on the restoration plan. Colonel Diffley explained how he envisioned the Restoration Plan being implemented. He commented that he intended for the meeting to be run somewhat informally to allow for an exchange of information between the agency representatives and the public.

Basin Plans

Stan Green of Colonel Diffley's staff presented an synopsis of the wetland problems in each of Louisiana's nine coastal hydrologic basins. He also presented the proposed solutions to those problems.

Public Comments

Colonel Diffley asked if their were any questions on what had been presented. There were none, so he called the first speaker.

Terri Bewig spoke on behalf of North Shore Coast Watch. She explained that the group is made up of sportsmen, conservation groups, civic groups, and businesses on the north shore of Lake Pontchartrain. As a group, the North Shore Coast Watch does not .want the Bonnet Carré diversion project in any form. Also, the group does not support the use of hard structures in the lake except for the possible exception of the replacement of (clam) reefs. She also stated that the EPA is funding a comprehensive management plan for Lake Pontchartrain and that this effort is not mentioned in the report. Ms. Bewig said that the Restoration Plan and the EPA-sponsored plan need to be reconciled for either one to effective and she asked that this oversight be corrected. The North Shore Coast Watch also submitted comments by mail at a

later date. Their comments are reproduced as comment package number 7 in Section 2 of this document.

Carlton Dufrechou, Director of the Lake Pontchartrain Basin Foundation, requested that the Bonnet Carré diversion structure be eliminated from the current CWPPRA proposal. His group believes that the project, as currently proposed, poses a risk to Lake Pontchartrain that outweighs any possible benefits. Mr. Dufrechou also stated that the group does not want to see the Bonnet Carrb project jeopardize the entire proposal. The Lake Pontchartrain Basin Foundation also submitted comments by mail at a later date. Their comments are reproduced as comment package number 16 in section 2 of this document.

Barry Kohl was called upon, but did not speak.

Mark Davis, Executive Director of the Coalition to Restore Coastal Louisiana, stated that it is important for us to all keep in mind that the report is in draft form and that it is a living document. He said that his group would be submitting written comments at a later date. He suggested that thought be given to reworking the Bonnet Carrb diversion into more of a restoration idea project and that he looks forward to the Task Force's response on that. The Coalition also submitted comments by mail at a later date. Their comments are reproduced as comment package number 5 in Section 2 of this document.

Bill Savant spoke on behalf of the Louisiana Department of Natural Resources, Coastal Restoration Division. He stated that his department had previously provided comments on the preliminary draft report and that they were pleased with the cooperation received from the Corps. Mr. Savant said that there are some areas that his department would be providing some additional comments and suggestions on before the end on the comment period. The Department of Natural Resources' written comments are reproduced as comment package number 5 in section 2 of this document.

Chris Andry spoke on behalf of St. Bernard Parish Government. Mr. Andry read a resolution unanimously adopted by the St. Bernard Parish Council. The resolution urges the Louisiana Congressional and legislative delegation to look into the matter of disproportionate expenditure of CWPPRA funds for projects in the western part of the State while the eastern part of the State has the highest erosion rates. In particular, the resolution promotes the implementation of the Violet Freshwater Distribution project which will (the resolution states) alleviate some of the problems resulting from construction of the MRGO. Copies of the resolution had previously been sent to all Task Force agencies and the Louisiana Congressional and legislative delegations.

Captain Gordon Green was called upon but did not speak.

Marietta Green spoke on behalf of some of the landowners in the Barataria Basin. She said that she is quite concerned about the proposed ship channel that would totally divide the basin. She

also stated that the proposed channel would cause an increase in the erosion along Bayou Barataria, which has a severe erosion problem. (Note: We assume that she is referring to an alternate channel proposed by Jefferson Parish for a portion of the Barataria Bay Waterway. A Section 10 and 404 permit application for that channel is being evaluated by the USACE Regulatory Functions Branch. The permit applicant has suggested that CWPPRA funds could be used for beneficial use of some of the material excavated for the project, but **neither the project nor any beneficial use of material dredged from it, are part of the Restoration Plan.**

Roy Francis, representing the Lafourche Parish Coastal Zone Management office, spoke in favor of the Plan. He said that the East Timbalier Island project is critical and that sediment diversion is also needed. He said that public knowledge is very important to get the projects implemented and that he wished the whole room was filled with the public, but that it was not. He further stated that his office is working on a project (GIWW to Clovelly Farms, BA-2), but it is going rather slow, and he hopes that the mistakes made will give light to other future projects. The Lafourche Parish Coastal Zone office also submitted comments by mail at a later date. Their comments are reproduced as comment package number 15 in section 2 of this document.

Pete Savoy, President of the St. Bernard Sportsmen's League and chairman of the St. Bernard Coastal Zone Committee, spoke in opposition to the Bonnet Carré diversion project. He stated that only a small number of jobs would be lost if the MRGO was closed; the container industry would just move to the Mississippi River. He also stated that the MRGO is becoming a bigger and bigger hurricane threat every year because of the erosion occurring. He also criticized the Task Force for not recognizing the real problem in St. Bernard (the MRGO) because they are not there to see the problem like the people in St. Bernard can see it.

T. J. Hadley, an oyster fisherman who has extensive oyster lease holdings in Lake Borgne, spoke in opposition to the Bonnet Carré diversion project. He stated that the fishermen had to move their oyster bedding grounds inland when the MRGO was opened because of increased salinity levels and now the proposed diversion would require them to move again. He also was critical of the rock dike that was put along a portion of the MRGO (a non-CWPPRA project), which he said was constructed over a portion of his oyster lease.

Miles Hebert, who works with the Cameron Parish Police Jury, spoke in favor of the Black Bayou By-pass Culverts project (C/S-16) in the Mermentau Basin. He also said that lowering of the water levels in the basin would greatly reduce the rate of erosion that is now occurring.

Ray Carner, Cameron Parish Police Jury , thanked the Task Force for the invitation to the public hearing and for all the work that has been done on the Plan. He spoke highly of the Cameron-Creole watershed project (implemented by other authorities). He

asked for funding (through the CWPPRA) to maintain the Cameron-Creole project for the next twenty years (project CS-4a/PC-7).

Jeanene Peckham, representing the Environmental Protection Agency, read a prepared statement. The statement was submitted to the Colonel Diffley and it is reproduced as comment package number 11D in Section 2 of this document. Briefly, the statement identified several areas of concern to the EPA including: the lack of demonstration projects; the lack of a provision for predictive hydrologic modelling; the appearance of the Restoration Plan as just a broadcast of projects across the coast; the lack of emphasis on the impending collapse of the fish and shellfish industry if nothing is done; and the treatment of marsh management in the EIS.

Tina Horn, Administrator of Cameron Parish and Coastal Zone Administrator for the Parish, expressed thanks for the Coastal Restoration Act that was approved by the citizens of Louisiana and also expressed gratitude to the Louisiana Congressional delegation for the CWPPRA. She spoke in favor of replacing the Hog Island, West Cove, and headquarters control structures (water control structures on the Sabine National Wildlife Refuge).

Chip Groat, Executive Director for the Center for Coastal, Energy, and Environmental Resources at Louisiana State University, gave an presentation that roughly paralleled a written statement that he presented. The written statement is reproduced in Section 2 of this document as comment package number 19. Briefly, Dr. Groat acknowledged the Plan as an important step in dealing with coastal wetland loss; expressed concerns about some types of projects (marsh management and hard structures); encouraged the Task Force to look toward implementing the large-scale projects that deal with systems and result in systematic solutions; expressed appreciation for his group's involvement in the process; and welcomed the opportunity for his group to become an active partner in the program.

Patricia Willging, speaking for herself, gave a presentation that roughly parallels a written statement that she later submitted by mail. Her written statement is provided as comment package number 31 which is in Section 2 of this document. Briefly, Ms. Willging is in favor of the large-scale projects that have a basin-wide influence and that would establish a long-term stable framework. She was critical of smaller-scale projects that would protect relatively small areas of the basins. She doesn't want to see the money divided up and "piecemealed out" with nothing accomplished.

Peter Tesvich, who, together with his father, lease about 2,000 acres of oyster bedding grounds in Lake Borgne, spoke in opposition to the Bonnet Carré diversion project. He believes it will ruin his leases in Lake Borgne.

Neil Armingeon, environmental director for the Lake Pontchartrain Basin Foundation, criticized the 404 permit program for not halting the dredging and filling of wetlands in Louisiana. Mr.

Armingeon also requested better accountability from the Task Force on how funds are being spent. Lastly, Mr. Armingeon asked that the Task Force consult other people outside Louisiana for solutions and not depend on decades-old engineering solutions (especially the Bonnet Carré project).

Colonel Diffley closed the meeting.

Notes: The minutes of the public hearing have been transcribed and are available upon request. Please contact the EIS coordinator, listed on the cover sheet of the EIS.

A list of attendees follows this page.

LIST OF ATTENDEES
PUBLIC HEARING

August 11, 1993

FEDERAL

Michael E. Barber
U.S. Environmental Protection Agency

Anthony Beaubouef
USDA, Soil Conservation Service

Herb Bourque
USDA, Soil Conservation Service

Jim Carson
National Park Service

Joe Conti
USDA, Soil Conservation Service

Michelangelo Perez Cuellar
U.S. Department of HUD

David Fruge'
U.S. Fish & Wildlife Service

Peggy M. Jones
National Marine Fisheries

Bennett Landreneau
USDA, Soil Conservation Service

Bruce Lehto
USDA, Soil Conservation Service

James E. Miculka
U.S. National Park Service

Gregory Miller
National Marine Fisheries

Jeannene Peckham
Environmental Protection Agency

Rickey Ruebsamen
National Marine Fisheries

Rachel Smyk
National Marine Fisheries

Norm Thomas
U.S. Environmental Protection Agency

Paul Wallace
USDA, Soil Conservation Service

STATE & PARISH

Chris Andry
St. Bernard Parish Government

Dr. Len Bahr
Executive Assistant for Coastal Activity

Richard Bejarano
Louisiana Department of Wildlife & Fisheries

Philip Bowman
Louisiana Department of Wildlife & Fisheries

Darryl Clark
Louisiana Department of Natural Resources

Ray Conner
Cameron Parish Police Jury

Roy Francis
Lafourche Parish Coastal Zone Management

Tinal Horn
Cameron Parish Police Jury

Jerry Monier
Lafayette Parish Council

Pamela Porter
Louisiana Soil & Water Conservation

Bill Savant
Louisiana Department Natural Resources

Brandt Savoie
Louisiana Department of Wildlife & Fisheries

Jim Stone
Governor's Office of Coastal Activities

INDIVIDUALS & GROUPS

Guy Alexander

Mary Anderson

Neil A. Armingeon

Vernon Behrhorst

Terri Bewig

Cornelia Carrier

Robert H. Chabreck
School of Forestry, Wildlife, & Fish
LSU

Cathryn Colbert

Paul Coreil
LSU Agricultural Center

Pamela Cuellar

Mark Davis

B. N. Deaton

Robert J. Deaton

Carlton Dufrechou

Dr. Don Duplantier

Allen B. Ensminger

Kenneth Faust

Tyrone Foreman

David Gegenheimer

Maria Gonzalez

Capt. Gordon A. Greene

Mariette Greene

Chip Groat
Center for Coastal, Energy, & Environmental Resources
LSU

T. J. Hadley

Dr. Barry Kohl

Deidre Lloyd

Douglas Lloyd
MARAD U.S. DOT

Oneil Malbrough

Steve Mathies

Dinah Maygarden

David P. Muth

Albert S. Rawle III

Darryl Rodrigue

Charles Savoye

Lori Koen Slavich

Peter L. Tesvich

Jeff Waters

Rick Webb

Patricia Willging

Marnie Winter

Robert Wiygul

Lynn Woods
Barataria Terrebonne National Estuary Program

MEDIA

Avis Landry
WVUE-TV

CORPS OF ENGINEERS

Jim Addison

Tim Axtman

Donnal Bivona

Dave Carney

Colonel Diffley

Jack Fredine

Sue Hawes

Robert Lacy

R. H. Schroeder, Jr.

Jim St. Germain