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## 8th PRIORITY PROJECT LIST REPORT

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION  
TASK FORCE

November 1999



Coastal Wetlands Planning, Protection and Restoration Act  
(Breau Act)

8<sup>th</sup> Priority Project List Report

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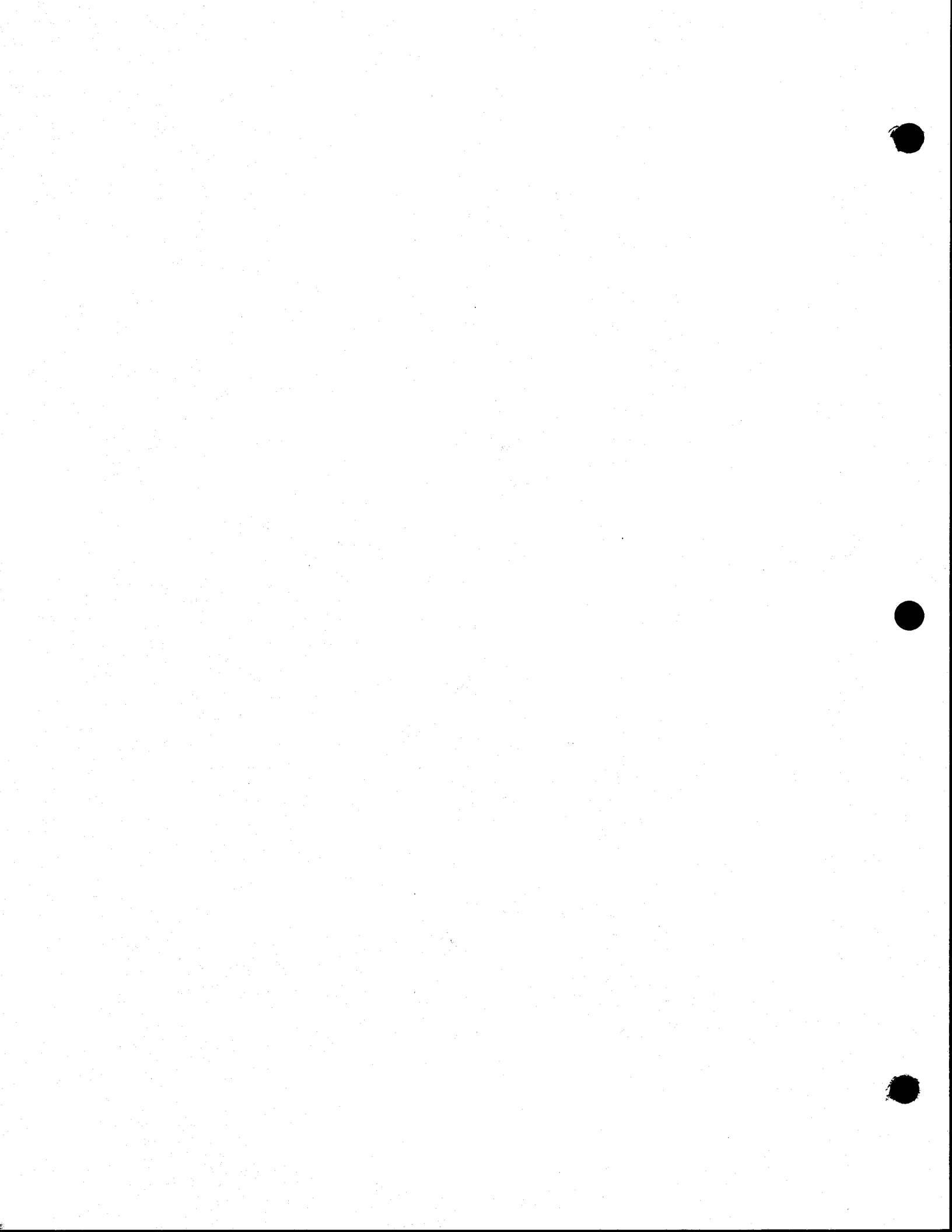
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INTRODUCTION

The State of Louisiana contains about 40 percent of the Nation's coastal wetlands in the lower 48 states. The wetlands, bays, and islands of coast constitute an enormously productive ecosystem. For example, Louisiana coastal wetlands and adjacent areas contribute nearly 30 percent by weight of the total commercial fisheries harvest in the lower 48 states, and on the average, provide overwintering habitat for 50 percent of the migratory waterfowl using the Mississippi Flyway, as well as significant numbers of waterfowl using the Central Flyway. Unfortunately, Louisiana's coastal wetlands are also experiencing about 80 percent of the coastal wetland loss in the lower 48 states, a disproportionately high rate of loss. The problem is extensive and complex, involving 9 separate hydrologic basins. To address the problem, Federal and State agencies have proposed many alternative solutions, providing a wide spectrum of possible means for diminishing, neutralizing, or reversing these losses. In addition, a global observation of these past efforts by Federal, state, and local governments and the public has led to the conclusion that a comprehensive approach is needed to address this significant environmental problem. In response to this, the Coastal Wetlands Planning, Protection and Restoration Act (Public Law 101-646) was signed into law by President Bush on November 29, 1990. This report documents the implementation of Section 303(a) of the cited legislation.

STUDY AUTHORITY

Section 303(a) of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA, or the Breux Act), displayed in Appendix A, directs the Secretary of the Army to convene the Louisiana Coastal Wetlands Conservation and Restoration Task Force to:

. . . initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based upon the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such

coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

#### STUDY PURPOSE

The purpose of this study effort was to prepare the 8<sup>th</sup> Priority Project List (PPL) and transmit the list to Congress, as specified in Section 303(a)(3) of the CWPPRA. Section 303(b) of the act calls for preparation of a comprehensive restoration plan for coastal Louisiana; that effort was completed in November 1993, with the submission of the Louisiana Coastal Wetlands Restoration Plan.

#### PROJECT AREA

A map of the Louisiana coastal zone is presented in Plate 1, which indicates project locations by number of Priority Project Lists 1 through 8. Plate 2 contains a listing of these project names, referenced by number and grouped by sponsoring agency, for each Priority Project List. The entire coastal area, which comprises all or part of 20 Louisiana parishes, is considered to be the CWPPRA project area. To facilitate the study process, the coastal zone was divided into nine hydrologic basins (refer to map of Plate 1).

#### STUDY PROCESS

The Interagency Planning Groups. Section 303(a)(1) of the CWPPRA directs the Secretary of the Army to convene the Louisiana Coastal Wetlands Conservation and Restoration Task Force, to consist of the following members:

- the Secretary of the Army (Chairman)
- the Administrator, Environmental Protection Agency
- the Governor, State of Louisiana
- the Secretary of the Interior
- the Secretary of Agriculture
- the Secretary of Commerce.

The State of Louisiana is a full voting member of the Task Force except for selection of the Priority Project List [Section 303(a)(2)], as stipulated in President Bush's November 29, 1990, signing statement (Appendix A). In addition, the State of Louisiana may not serve as a "lead" Task Force member for design and construction of wetlands projects of the priority project list.

In practice, the Task Force members named by the law have delegated their responsibilities to other members of their organizations. For instance, the Secretary of the Army



authorized the commander of the Corps' New Orleans District to act in his place as chairman of the Task Force.

The Task Force established the Technical Committee and the Planning and Evaluation Subcommittee, to assist it in putting the CWPPRA into action. Each of these bodies contains the same representation as the Task Force -- one member from each of the five Federal agencies and one from the State. The Planning and Evaluation Subcommittee is responsible for the actual planning of projects, as well as the other details involved in the CWPPRA process (such as development of schedules, budgets, etc.). This subcommittee makes recommendations to the Technical Committee and lays the groundwork for decisions that will ultimately be made by the Task Force. The Technical Committee reviews all materials prepared by the subcommittee, makes appropriate revisions, and provides recommendations to the Task Force. The Technical Committee operates at an intermediate level between the planning details considered by the subcommittee and the policy matters dealt with by the Task Force, and often formalizes procedures and formulates policy for the Task Force.

The Planning and Evaluation Subcommittee established several working groups to evaluate projects for priority project lists. The Environmental Work Group was charged with estimating the benefits (in terms of wetlands created, protected, enhanced, or restored) associated with various projects. The Engineering Work Group reviewed project cost estimates for consistency. The Economic Work Group performed the economic analysis, which permitted comparison of projects on the basis of their cost effectiveness. The Monitoring Work Group established a standard procedure for monitoring of CWPPRA projects and developed a monitoring cost estimating procedure based on project type.

The Citizen Participation Group. The Task Force also established a Citizen Participation Group to provide general input from the diverse interests across the coastal zone: local officials, landowners, farmers, sportsmen, commercial fishermen, oil and gas developers, navigation interests, and environmental organizations. The Citizen Participation Group was formed to promote citizen participation and involvement in formulating priority project lists and the restoration plan. The group meets at its own discretion, but may at times meet in conjunction with other CWPPRA elements, such as the Technical Committee. The purpose of the Citizen Participation Group 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 membership of the Citizen Participation Group is shown in Table 1.

Table 1  
Membership of the Citizen Participation Group

---

Gulf Coast Conservation Association	Concerned Shrimpers of America
Coalition to Restore Coastal Louisiana	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)	Police Jury Association of Louisiana
Organization of Louisiana Fishermen	

---

Involvement of the Academic Community. While the agencies sitting on the Task Force possess considerable expertise regarding Louisiana's coastal wetlands problems, the Task Force recognized the need to incorporate another invaluable resource: the state's academic community. The Task Force therefore retained the services of the Louisiana Universities Marine Consortium (LUMCON) to provide scientific advisors to aid the Environmental Work Group in performing Wetland Value Assessments. This Academic Assistance Group also assists the Task Force in carrying out feasibility studies authorized by the Task Force. These include:

- The Louisiana Barrier Shoreline study -- March 1995 - March 1999 (managed by the Louisiana Department of Natural Resources), and
- The Mississippi River Sediment, Nutrient, and Freshwater Redistribution study -- March 1995 - ongoing (managed by the Corps of Engineers).

Public Involvement. Even with its widespread membership, the Citizen Participation Group cannot represent all of the diverse interests affected by Louisiana's coastal wetlands. The CWPRA public involvement program provides 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 Task Force has held at least eight public meetings each of the last eight years to obtain input from the public. In addition, the Task Force distributes a quarterly newsletter with information on the CWPPRA program and on individual projects.

## PLAN FORMULATION PROCESS FOR THE 8<sup>th</sup> PRIORITY PROJECT LIST

### BACKGROUND

The planning effort associated with the CWPPRA initially proceeded simultaneously along two tracks. Section 303(b) of the act calls for the development of a comprehensive restoration plan for Louisiana's coastal wetlands. This long-term plan was developed over a three-year period, with the report (the *Louisiana Coastal Wetlands Restoration Plan*) completed in November 1993. Section 303(a), on the other hand, deals with projects that can be implemented within a short period of time. This section requires that any project selected for a priority project list be substantially complete within five years of its appearance on a list. The intent of this section is to provide a rapid response to the loss of coastal wetlands. The first Priority Project List was to be submitted within one year of enactment of the CWPPRA, with subsequent lists to be prepared annually.

Section 303(a) actually requires that priority project lists be submitted only until such time as the comprehensive restoration plan called for in section 303(b) has been prepared. Projects can then be drawn from the comprehensive plan. In practice, however, the Task Force has found the annual priority list process to be an effective means of developing projects and has continued to use that process -- without the five-year implementation limit. This allows the Task Force to consider the most effective projects to address the state of wetlands loss on an annual basis.

Typically, Priority Project Lists are completed within a one-year time limit. The relatively short time period associated with developing a priority project list necessitated a deviation from the usual plan formulation process. Rather than beginning with a clean slate, it was preferable to begin with projects that were already developed to some degree. The emphasis was to develop where possible projects on which some planning had already been done, although this was not absolutely required for a project to receive consideration. The projects on the First Priority Project List submitted in November 1991 fell into the former category of these.

Preparation of subsequent lists involved somewhat more lead-time than did the first list and employed a more traditional approach. This section describes the process by which the 8<sup>th</sup> Priority Project List was developed.

Development of the 8<sup>th</sup> list was a three-stage process: identification and selection of candidate projects, evaluation of candidate projects, and selection of the priority project list.

#### IDENTIFICATION OF CANDIDATE PROJECTS

Candidate projects are those that the Task Force will evaluate in some detail in order to choose a priority project list. The Planning and Evaluation Subcommittee selects a number of candidate projects as the first step in priority project list development.

Projects considered for the 8<sup>th</sup> list were derived from the *Louisiana Coastal Wetlands Restoration Plan*, as well as altogether new projects presented for consideration. An identification number was assigned to each project to help keep track through the screening and evaluation process. Each project received a two-letter code to identify its basin; these codes are shown below.

PO	Pontchartrain	AT	Atchafalaya
BS	Breton Sound	TV	Teche/Vermilion
MR	Mississippi River Delta	ME	Mermentau
BA	Barataria	CS	Calcasieu/Sabine
TE	Terrebonne		

Projects that were originally part of the State's Coastal Wetlands Conservation and Restoration Plan use these two letters followed by a number. Projects that were derived from the scoping meetings held in the fall of 1991 are identified by a "P" ("public") preceding the two-letter code (e.g., PPO-52, PTV-18).

Plan formulation meetings held from February through May 1992 were an additional source of projects for consideration for priority project lists. Projects that were proposed during and after these meetings are identified with an "X" (e.g., XTE-41).

Some projects are not specific to one project area, but rather may be applied at any appropriate site on a coastwide basis. These projects are designated "CW," followed by a numerical identifier.

#### SELECTION OF CANDIDATE PROJECTS

In April 1998 the Planning and Evaluation Subcommittee held a series of meetings for project nominations and the selection of candidate projects. The meetings were held according to the schedule shown in Table 2.

Table 2  
Meetings for Project Nominations  
and Selection of Candidate Projects

Purpose and Location	Date	Hydrologic Basins
Abbeville, Louisiana	April 1, 1998	Teche-Vermilion Terrebone Mermentau
New Orleans, Louisiana	April 3, 1998	Calcasieu/Sabine Pontchartrain Mississippi River Delta Atchafalaya Barataria Breton Sound

The public was invited to participate in these meetings to nominate projects of their own. An emphasis was placed on nomination of projects listed in the *Louisiana Coastal Wetlands Restoration Plan*, although altogether new projects could also be nominated. A meeting was conducted on April 21, 1998, for the CWPPRA agencies to review and discuss the publicly nominated projects and also to nominate projects of their own. The subcommittee selected the candidate projects from among the nominees at a meeting conducted on April 24, 1998.

The Planning and Evaluation Subcommittee established in advance that the nominee projects to be selected as candidates were to be the top fourteen by closed-ballot agency popular vote. The subcommittee considered the qualitative benefits of each nominee project to establish the project value to the ecosystem and the respective popular vote. In the voting process, the projects having highest- to lowest-value to the ecosystem, respectively, received the highest- to lowest-numerical vote. The popular vote for the nominees is displayed in Table 3.

Of the nominees, 14 projects were chosen as candidates to be evaluated in detail; these were the projects from which the 8<sup>th</sup> Priority Project List would be selected. In addition, the Planning and Evaluation Subcommittee decided 4 demonstration projects (some proposed by the agencies, others proposed by the public) merited consideration for the 8<sup>th</sup> Priority Project List. By Task Force decision, the total cost of the 8<sup>th</sup> Priority Project List was to be in the range of between \$6 to \$8 million. As in prior lists, the Task Force agreed that demonstration projects would generally be limited to about \$2 million.

Upon candidate project selection from the list of nominees, a lead federal agency was then assigned to the development of each candidate project. During project development, the lead agency was responsible for more fully producing designs and cost estimates. The Engineering Work Group met and reviewed each agency's design and cost estimate for the projects.

Table 3

Summary of Candidate Projects of the Nominees for the 8th Priority Project List

<b>Status Key:</b> PE = previously evaluated as presented -- no new evaluation necessary ED = previously evaluated, different version -- needs new evaluation NE = new project -- needs evaluation		Status	Summary of Agency Voting							Total
Project No.	Nominee Project Name		DNR	EPA	NRCS	FWS	NMFS	COE		
PBS-1	Upper Oak R. FW Introduction Siphon <sup>a</sup>	PE	0	14	<sup>b</sup> 15	12	13	9	63	
XCS-48 (SA-1)	Sabine Refuge Marsh Creation (Revised) <sup>a</sup>	ED	3	9	4	15	14	<sup>b</sup> 15	60	
PPO-38	Hopedale Hydrologic Restoration <sup>a</sup>	NE	8	0	13	9	<sup>b</sup> 12	14	56	
PO- <sup>c</sup>	Bayou Bienvenue Pumping Station/Terracing <sup>a</sup>	NE	10	5	0	0	<sup>b</sup> 11	13	39	
CS-1d	Constance-Holly Beach Sand Management Plan <sup>a</sup>	NE	15	1	11	2	4	<sup>b</sup> 6	39	
PME-15	Humble Canal Hydrologic Restoration <sup>a</sup>	ED	11	0	<sup>b</sup> 14	7	6	0	38	
XBA-63ii	Barataria Land Bridge Shoreline Protection, Phase 2 <sup>a</sup>	ED	0	2	<sup>b</sup> 12	14	5	3	36	
TE-8	Bayou Pelton Wetland Protection <sup>a</sup>	NE	0	0	5	<sup>b</sup> 13	9	4	31	
PBA-44	Ft. Jackson/Boothville Diversion <sup>a</sup>	PE	0	10	0	0	<sup>b</sup> 15	5	30	
PTV-20	Lake Portage Land Bridge <sup>a</sup>	NE	7	<sup>b</sup> 13	<sup>b</sup> 10	0	0	0	30	
XBA-73a	Ft. Jackson/Boothville Marsh Creation <sup>a</sup>	NE	0	<sup>b</sup> 15	0	0	0	8	23	
ME- <sup>c</sup>	Grand Cheniere Terracing <sup>a</sup>	NE	2	0	0	0	<sup>b</sup> 10	11	23	
TE-11a"ii"	Lake Pelto Dedicated Dredging and New Cut Closure	ED	9	11	1	0	0	0	21	
PME-2	Breakwaters at Rockefeller Refuge	ED	14	0	0	0	7	0	21	
XBA-52a	Grand Isle State Park Breakwaters	NE	13	0	6	0	0	0	19	
TV-10b	Weeks Bay Sediment Trapping/Shore Protection	NE	6	0	0	0	0	10	16	
XTE-62	Wine Island Eastward Expansion	PE	12	3	0	0	0	0	15	
PTE-1a	Bayou Terrebonne Ridge Protection	NE	0	6	0	5	3	0	14	
XTE-58	South Bully Camp Outfall Management	NE	0	0	9	3	0	2	14	
MR- <sup>c</sup>	Contained Submarine Maintenance Dredging (CoSMaD) Sediment Trap Operation in the Mississippi River Delta	NE	0	0	0	0	0	12	12	
PTE-15bii	Isles Dernieres Restoration, Whiskey Island, Parts 2 & 3	ED	0	12	0	0	0	0	12	
TE- <sup>c</sup>	East Timbalier Is. Restoration	PE	0	4	0	0	8	0	12	
XTE-55	South Falgout Canal Hydrologic Restoration	NE	0	0	0	11	0	0	11	
C/S-16	Black Bayou Culverts (Modified)	ED	0	0	3	8	0	0	11	
XME-40	North Little Pecan Bayou	NE	0	0	0	10	0	0	10	
CW-6a	Lafourche Dedicated Dredging	PE	0	8	0	0	1	0	9	
TE-2	Falgout Canal Marsh Mgt. Enhancement and Expansion	NE	0	0	8	0	0	0	8	
XCS-48 (SO-8)	Oyster Bayou Hydrologic Restoration	NE	0	0	7	1	0	0	8	
PO-13	Tangipahoa/Pontchartrain Shore Protection	NE	0	0	0	0	0	7	7	

Table 3 (continued)

Summary of Candidate Projects of the Nominees for the 8th Priority Project List

<b>Status Key:</b> PE = previously evaluated as presented -- no new evaluation necessary ED = previously evaluated, different version -- needs new evaluation NE = new project -- needs evaluation		Summary of Agency Voting								
Project No.	Nominee Project Name	Status	DNR	EPA	NRCS	FWS	NMFS	COE	Total	
BA <sup>c</sup>	Highway 1 Marsh Creation and Reef Protection	NE	0	7	0	0	0	0	7	
XTV-27	Freshwater Bayou Humble Wetlands (modified)	ED	0	0	0	6	0	0	6	
ME <sup>c</sup>	Terracing in Grand/White Lake Land Bridge	NE	5	0	0	0	0	1	6	
CS <sup>c</sup>	Terracing in Cameron-Creole Watershed	NE	1	0	0	4	0	0	5	
XBA-1b1	Detached Segmented Breakwaters at East Grand Terre Is.	NE	4	0	0	0	0	0	4	
XME-26	Warren Canal Structure	NE	0	0	0	0	2	0	2	
XME-42	South Grand Cheniere Freshwater Introduction	PE	0	0	2	0	0	0	2	
PPO-2d, h	Lake Borgne Shore Protection, Shell Beach	PE	0	0	0	0	0	0	0	
XPO-74a	Lake Borgne Shore Protection., Proctor Point	NE	0	0	0	0	0	0	0	
PO <sup>c</sup>	Fontainbleau State Park Breakwater/Beach Nourishment	NE	0	0	0	0	0	0	0	
XPO-81	Point aux Herbes Shore Protection	NE	0	0	0	0	0	0	0	
BA <sup>c</sup>	Mendicant Island Restoration	NE	0	0	0	0	0	0	0	
XBA-1f1	Bay Champagne Gulf Shore Sediment Replacement	NE	0	0	0	0	0	0	0	
PTE-28	Chacahoula Basin Hydrologic Restoration	NE	0	0	0	0	0	0	0	
PTV-19	Indian Point Stabilization	NE	0	0	0	0	0	0	0	
TV <sup>c</sup>	GIWW Bank Stabilization at Seventh Ward Canal	NE	0	0	0	0	0	0	0	
C/A-1a&c	Constance-Holly Beach Breakwater Plan	NE	0	0	0	0	0	0	0	
TE-DEMO	Mandalay Erosion Control (DEMO)	NE						b		
PME-5	South Shore Grand Lake Stabilization (DEMO)	NE						b		
ME-DEMO	Flyash Stabilization (White Lake) (DEMO)	NE						b		
CW-DEMO	Maintenance Dredging Matching Fund (DEMO)	NE					b			
Totals:			120	120	120	120	120	120	720	

<sup>a</sup> Selected by the Planning & Evaluation Subcommittee on April 24, 1998 as a candidate project to be evaluated on the 8<sup>th</sup> Priority Project List.

<sup>b</sup> Indicates project sponsor/co-sponsor, as established on April 24, 1998.

<sup>c</sup> New project -- not in Restoration Plan

During the development of designs and cost estimates, the lead agencies furnished this information to the Environmental Work Group. The Environmental Work Group performed a Wetland Value Assessment (WVA) for each candidate project. The section of this report entitled "Evaluation of Candidate Projects" summarizes the information developed by the lead agencies in this process.

## EVALUATION OF CANDIDATE PROJECTS

Benefit Analysis (WVA). The WVA is a quantitative, habitat-based assessment methodology developed for use in prioritizing project proposals submitted for funding under the Breaux Act. The WVA quantifies changes in fish and wildlife habitat quality and quantity that are projected to emerge or develop as a result of a proposed wetland enhancement project. The results of the WVA, measured in Average Annual Habitat Units (AAHUs), can be combined with economic data to provide a measure of the effectiveness of a proposed project in terms of annualized cost per AAHU protected and/or gained.

The Environmental Work Group developed the WVA for each project. The Environmental Work Group is assembled under the Planning and Evaluation Subcommittee of the CWPPRA Technical Committee. The Environmental Work Group includes members from each agency represented on the CWPPRA Task Force. The WVA was designed to be applied, to the greatest extent possible, using only existing or readily obtainable data.

The WVA has been developed strictly for use in ranking proposed CWPPRA projects; it is not intended to provide a detailed, comprehensive methodology for establishing baseline conditions within a project area. Some aspects of the WVA have been defined by policy and functional considerations of the CWPPRA; therefore, user-specific modifications may be necessary if the WVA is used for other purposes.

The WVA is a modification of the Habitat Evaluation Procedures (HEP) developed by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service, 1980). HEP is widely used by the Fish and Wildlife Service and other Federal and State agencies in evaluating the impacts of development projects on fish and wildlife resources. A notable difference exists between the two methodologies. The HEP generally uses a species-oriented approach, whereas the WVA uses a community approach.

The WVA was developed for application to the following coastal Louisiana wetland types: fresh marsh (including intermediate marsh), brackish marsh, saline marsh, and cypress-tupelo swamp. Future reference in this document to "wetland" or "wetland type" refers to one or more of those four communities.

The WVA operates under the assumption that optimal conditions for fish and wildlife habitat within a given coastal wetland type can be characterized, and that existing or predicted conditions can be compared to that optimum to provide an index of habitat quality. Habitat quality is estimated or expressed through the



use of a mathematical model developed specifically for each wetland type. Each model consists of the following components:

1. a list of variables that are considered important in characterizing fish and wildlife habitat:
  - a.  $V_1$ --percent of wetland covered by emergent vegetation,
  - b.  $V_2$ --percent open water dominated by submerged aquatic vegetation,
  - c.  $V_3$ --marsh edge and interspersions,
  - d.  $V_4$ --percent open water less than or equal to 1.5 feet deep,
  - e.  $V_5$ --salinity, and
  - f.  $V_6$ --aquatic organism access.
2. a Suitability Index graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and
3. a mathematical formula that combines the Suitability Index for each variable into a single value for wetland habitat quality; that single value is referred to as the Habitat Suitability Index, or HSI.

The Wetland Value Assessment models have been developed for determining the suitability of Louisiana coastal wetlands for providing resting, foraging, breeding and nursery habitat to a diverse assemblage of fish and wildlife species. Models have been designed to function at a community level and therefore attempt to define an optimum combination of habitat conditions for all fish and wildlife species utilizing a given marsh type over a year or longer.

The output of each model (the HSI) is assumed to have a linear relationship with the suitability of a coastal wetland system in providing fish and wildlife habitat.

A comprehensive discussion of the WVA methodology is presented in Appendix E.

Designs and Cost Analysis. During the plan formulation process, each of the Task Force agencies assumed responsibility for developing designs, and estimates of costs and benefits for a number of candidate projects. The cost estimates for the projects were to be itemized as follows:

1. Construction Cost
2. Contingencies Cost
3. Engineering and Design
4. Environmental Compliance
5. Supervision and Administration (Corps and the Louisiana Department of Natural Resources (LADNR) Project Management)
6. Supervision and Inspection (Construction Contract)
7. Real Estate
8. Operation and Maintenance
9. Monitoring

In addition, each lead agency provided a detailed itemized construction cost estimate for each project. These estimates are shown in Appendix C.

An Engineering Work Group was established by the Planning and Evaluation Subcommittee, with each Federal agency and the State of Louisiana represented. The work group reviewed each estimate for accuracy and consistency.

When reviewing the construction cost estimates, the work group verified that each project feature had an associated cost and that the quantity and unit prices for those items were reasonable. In addition, the work group reviewed the design of the projects to determine whether the method of construction was appropriate and the design was feasible.

All of the projects were assigned a contingency cost of 25 percent because detailed information such as soil borings, surveys, and -- to a major extent -- hydrologic data were not available, in addition to allowing for variations in unit prices.

Engineering and design, environmental compliance, supervision and administration, and supervision and inspection costs were reviewed for consistency, but ordinarily were not changed from what was presented by the lead agency.

Economic Analysis. The Breaux Act directed the Task Force to develop a prioritized list of wetland projects "based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands." The Task Force satisfied this requirement through the integration of a traditional time-value analysis of life-cycle project costs and other economic impacts and an evaluation of wetlands benefits using a community-based version of the U.S. Fish and Wildlife Service's Habitat Evaluation Procedure. The product of these two analyses was an Average Annual Cost per Average Annual Habitat Unit figure for each project, which was used as the primary ranking criterion. The method permits incremental analysis of varying scales of investment and also accommodates the varying salinity types and habitat quality characteristics of project wetland outputs.

The major inputs to the cost effectiveness analysis are the products of the lead Task Force agencies and the Engineering and Environmental Work Groups. The various plans were refined into estimates of annual implementation costs and respective AAHUs.

Implementation costs were used to calculate the economic and financial costs of each wetland project. Financial costs chiefly consist of the resources needed to plan, design, construct, operate, monitor, and maintain the project. These are the costs, when adjusted for inflation, which the Task Force uses in budgeting decisions. The economic costs include, in addition to the financial cost; monetary indirect impacts of the plans not accounted for in the implementation costs. Examples would include impacts on dredging in nearby commercial navigation channels, effects on water supplies, and effects on nearby facilities and structures not reflected in right-of-way and acquisition costs.

The stream of economic costs for each project was brought to present value and annualized at the current discount rate, based on a 20-year project life. Beneficial environmental outputs were annualized at a zero discount rate and expressed as AAHUs. These data were then used to rank each plan based on cost per AAHU produced. Annual economic costs were also calculated on a per acre basis. Financial costs were adjusted to account for projected levels of inflation and used to monitor overall budgeting and any future cost escalations in accordance with rules established by the Task Force.

Following the review by the Engineering Work Group, costs were expressed as first costs, fully funded costs, present worth costs, and average annual costs. The Cost per Habitat Unit criterion was derived by dividing the average annual cost for each wetland project by the Average Annual Habitat Units (AAHU) for each wetland project. The average annual costs figures are based on 1999 price levels, a discount rate of 7.125 percent, and a project life of 20 years. The fully funded cost estimates developed for each project were used to determine how many projects could be supported by the funds expected to be available in fiscal year 1999. The fully funded cost estimates include operation and maintenance and other compensated financial costs.

#### DESCRIPTION OF CANDIDATE PROJECTS

This section provides a brief description of each candidate project. The descriptions include the project location, features, anticipated benefits, and a map identifying the project area and project features.

One candidate project, Grand Cheniere Terracing, was terminated early in the project development process, due to the identification of difficulties with land rights acquisition. For this reason, a description for this project is not presented in this report.