12TH PRIORITY PROJECT LIST REPORT (APPENDICES)

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

DECEMBER 2003

Coastal Wetlands Planning, Protection, and Restoration Act

12th Priority Project List Report

Table of Contents

Coastal Wetlands Planning, Protection, and Restoration Act

12th Priority Project List Report

Appendix A

Summary and Complete Text of the CWPPRA

SECTION 303. Priority Louisiana Coastal Wetlands Restoration Projects.

- Section 303a. Priority Project List
- NLT 13 Jan 91, Sec. Of Army (Secretary) will convene a Task Force
  - Secretary
  - Administrator, EPA
  - Governor, Louisiana
  - Secretary, Interior
  - Secretary, Agriculture
  - Secretary, Commerce
- NLT 28 Nov. 91, Task Force will prepare and transmit to Congress a Priority List of wetland restoration projects based on cost effectiveness and wetland quality.
- Priority List is revised and submitted annually as part of President's budget.
- Section 303b. Federal and State Project Planning
  - NLT 28 Nov. 93, Task Force will prepare a comprehensive coastal wetlands Restoration Plan for Louisiana.
  - Restoration Plan will consist of a list of wetland projects, ranked by cost effectiveness and wetland quality.
  - Completed Restoration Plan will become Priority List.
  - Secretary will ensure that navigation and flood control projects are consistent with the purpose of the Restoration Plan.
  - Upon submission of the Restoration Plan to Congress, the Task Force will conduct a scientific evaluation of the completed wetland restoration projects every 3 years and report findings to Congress.

SECTION 304. Louisiana Coastal Wetlands Conservation Planning.

- Secretary; Administrator, EPA; and Director, USFWS will:
  - Sign an agreement with the Governor specifying how Louisiana will develop and implement the Conservation Plan.
  - Approve the Conservation Plan.
  - Provide Congress with periodic status reports on Plan implementation.
- NLT 3 years after agreement is signed. Louisiana will develop a Wetland Conservation Plan to achieve no net loss of wetlands resulting from development.

SECTION 305. National Coastal Wetlands Conservation Grants.

- Director, USFWS, will make matching grants to any coastal state to implement Wetland Conservation Projects (projects to acquire, restore, manage, and enhance real property interest in coastal lands and waters).
- Cost sharing is 50% Federal/50% State.

SECTION 306. Distribution of Appropriations.

- 70% of annual appropriations not to exceed (NTE) $70 million used as follows:
  - NTE $15 million to fund Task Force completion of Priority List and Restoration Plan—Secretary disburses the funds.

    - NTE $10 million to fund 75% of Louisiana's cost to complete Conservation Plan—Administrator disburses funds.
    - Balance to fund wetland restoration projects at 75% Federal/25% Louisiana-Secretary disburses funds.
- 15% of annual appropriations, NTE $15 million for Wetland Conservation Grants—Director, USFWS disburses funds.
- 15% of annual appropriations, NTE $15 million for projects authorized by the North American Wetlands Conservation Act—Secretary, Interior disburses funds.

SECTION 307. Additional Authority for the Corps of Engineers.

- Section 307a. Secretary authorized to:
    - Carry out projects to protect, restore, and enhance wetlands and aquatic/coastal ecosystems.
- Section 307b. Secretary authorized and directed to study feasibility of modifying MR&T to increase flows and sediment to the Atchafalaya River for land building wetland nourishment.
    - 25% if the state has dedicated trust fund from which principal is not spent.
    - 15% when Louisiana's Conservation Plan is approved.

TITLE III--WETLANDS

Sec. 301. SHORT TITLE.

This title may be cited as the "Coastal Wetlands Planning, Protection and Restoration Act".

Sec. 302. DEFINITIONS.

As used in this title, the term--

(1) "Secretary" means the Secretary of the Army;
(2) "Administrator" means the Administrator of the Environmental Protection Agency;
(3) "development activities" means any activity, including the discharge of dredged or fill material, which results directly in a more than de minimus change in the hydrologic regime, bottom contour, or the type, distribution or diversity of hydrophytic vegetation, or which impairs the flow, reach, or circulation of surface water within wetlands or other waters;
(4) "State" means the State of Louisiana;
(5) "coastal State" means a State of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes; for the purposes of this title, the term also includes Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands, and American Samoa;
(6) "coastal wetlands restoration project" means any technically feasible activity to create, restore, protect, or enhance coastal wetlands through sediment and freshwater diversion, water management, or other measures that the Task Force finds will significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of coastal wetlands in the State of Louisiana, and includes any such activity authorized under this title or under any other provision of law, including, but not limited to, new projects, completion or expansion of existing or on-going projects, individual phases, portions, or components of projects and operation, maintenance and rehabilitation of completed projects; the primary purpose of a "coastal wetlands restoration project" shall not be to provide navigation, irrigation or flood control benefits;
(7) "coastal wetlands conservation project" means--
(A) the obtaining of a real property interest in coastal lands or waters, if the obtaining of such interest is subject to terms and conditions that will ensure that the real property will be administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon; and
(B) the restoration, management, or enhancement of coastal wetlands ecosystems if such restoration, management, or enhancement is conducted on coastal lands and waters that are administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon;
(8) "Governor" means the Governor of Louisiana;
(9) "Task Force" means the Louisiana Coastal Wetlands Conservation and Restoration Task Force which shall consist of the Secretary, who shall serve as chairman, the Administrator, the Governor, the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Commerce; and
(10) "Director" means the Director of the United States Fish and Wildlife Service.

SEC. 303. PRIORITY LOUISIANA COASTAL WETLANDS RESTORATION PROJECTS.

(a) PRIORITY PROJECT LIST.--
(1) PREPARATION OF LIST.--Within forty-five days after the date of enactment of this title, the Secretary shall convene the 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 on 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.
(2) TASK FORCE PROCEDURES.--The Secretary shall convene meetings of the Task Force as appropriate to ensure that the list is produced and transmitted annually to the Congress as required by this subsection. If necessary to ensure transmittal of the list on a timely basis, the Task Force shall produce the list by a majority vote of those Task Force members who are present and voting; except that no coastal wetlands restoration project shall be placed on the list without the concurrence of the lead Task Force member that the project is cost effective and sound from an engineering perspective. Those projects which potentially impact navigation or flood control on the lower Mississippi River System shall be constructed consistent with section 304 of this Act.
(3) TRANSMITTAL OF LIST.--No later than one year after the date of enactment of this title, the Secretary shall transmit to the Congress the list of priority coastal wetlands restoration projects required by paragraph (1) of this subsection. Thereafter, the list shall be updated annually by the Task Force members and transmitted by the Secretary to the Congress as part of the President's annual budget submission. Annual transmittals of the list to the Congress shall include a status report on each project and a statement from the Secretary of the Treasury indicating the amounts available for expenditure to carry out this title.
(4) LIST OF CONTENTS.--
(A) AREA IDENTIFICATION; PROJECT DESCRIPTION--The list of priority coastal wetlands restoration projects shall include, but not be limited to--
(i) identification, by map or other means, of the coastal area to be covered by the coastal wetlands restoration project; and
(ii) a detailed description of each proposed coastal wetlands restoration project including a justification for including such project on the list, the proposed activities to be carried out pursuant to each coastal wetlands restoration project, the benefits to be realized by such project, the identification of the lead Task Force member to undertake each proposed coastal wetlands restoration project and the responsibilities of each other participating Task Force member, an estimated timetable for the completion of each coastal wetlands restoration project, and the estimated cost of each project.
(B) PRE-PLAN.--Prior to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that can be substantially completed during a five-year period commencing on the date the project is placed on the list.
(C) Subsequent to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that have been identified in such plan.
(5) FUNDING.--The Secretary shall, with the funds made available in accordance with section 306 of this title, allocate funds among the members of the Task Force based on the

need for such funds and such other factors as the Task Force deems appropriate to carry out the purposes of this subsection.

(b) FEDERAL AND STATE PROJECT PLANNING.--

(1) PLAN PREPARATION.--The Task Force shall prepare a plan to identify coastal wetlands restoration projects, in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing the long-term conservation of 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. Such restoration plan shall be completed within three years from the date of enactment of this title.

(2) PURPOSE OF THE PLAN.--The purpose of the restoration plan is to develop a comprehensive approach to restore and prevent the loss of, coastal wetlands in Louisiana. Such plan shall coordinate and integrate coastal wetlands restoration projects in a manner that will ensure the long-term conservation of the coastal wetlands of Louisiana.

(3) INTEGRATION OF EXISTING PLANS.--In developing the restoration plan, the Task Force shall seek to integrate the "Louisiana Comprehensive Coastal Wetlands Feasibility Study" conducted by the Secretary of the Army and the "Coastal Wetlands Conservation and Restoration Plan" prepared by the State of Louisiana's Wetlands Conservation and Restoration Task Force.

(4) ELEMENTS OF THE PLAN.--The restoration plan developed pursuant to this subsection shall include--

(A) identification of the entire area in the State that contains coastal wetlands;

(B) identification, by map or other means, of coastal areas in Louisiana in need of coastal wetlands restoration projects;

(C) identification of high priority coastal wetlands restoration projects in Louisiana needed to address the areas identified in subparagraph (B) and that would provide for the long-term conservation of restored wetlands and dependent fish and wildlife populations;

(D) a listing of such coastal wetlands restoration projects, in order of priority, to be submitted annually, incorporating any project identified previously in lists produced and submitted under subsection (a) of this section;

(E) a detailed description of each proposed coastal wetlands restoration project, including a justification for including such project on the list;

(F) the proposed activities to be carried out pursuant to each coastal wetlands restoration project;

(G) the benefits to be realized by each such project;

(H) an estimated timetable for completion of each coastal wetlands restoration project;

(I) an estimate of the cost of each coastal wetlands restoration project;

(J) identification of a lead Task Force member to undertake each proposed coastal wetlands restoration project listed in the plan;

(K) consultation with the public and provision for public review during development of the plan; and

(L) evaluation of the effectiveness of each coastal wetlands restoration project in achieving long-term solutions to arresting coastal wetlands loss in Louisiana.

(5) PLAN MODIFICATION.--The Task Force may modify the restoration plan from time to time as necessary to carry out the purposes of this section.

(6) PLAN SUBMISSION.--Upon completion of the restoration plan, the Secretary shall submit the plan to the Congress. The restoration plan shall become effective ninety days after the date of its submission to the Congress.

(7) PLAN EVALUATION.--Not less than three years after the completion and submission of the restoration plan required by this subsection and at least every three years thereafter, the Task Force shall provide a report to the Congress containing a scientific evaluation of the effectiveness of the coastal wetlands restoration projects carried out under the plan in creating, restoring, protecting and enhancing coastal wetlands in Louisiana.

(c) COASTAL WETLANDS RESTORATION PROJECT BENEFITS.--Where such a determination is required under applicable law, the net ecological, aesthetic, and cultural benefits, together with the economic benefits, shall be deemed to exceed the costs of any coastal wetlands restoration project within the State which the Task Force finds to contribute significantly to wetlands restoration.

(d) CONSISTENCY.--(1) In implementing, maintaining, modifying, or rehabilitating navigation, flood control or irrigation projects, other than emergency actions, under other authorities, the Secretary, in consultation with the Director and the Administrator, shall ensure that such actions are consistent with the purposes of the restoration plan submitted pursuant to this section.

(2) At the request of the Governor of the State of Louisiana, the Secretary of Commerce shall approve the plan as an amendment to the State's coastal zone management program approved under section 306 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455).

(e) FUNDING OF WETLANDS RESTORATION PROJECTS.--The Secretary shall, with the funds made available in accordance with this title, allocate such funds among the members of the Task Force to carry out coastal wetlands restoration projects in accordance with the priorities set forth in the list transmitted in accordance with this section. The Secretary shall not fund a coastal wetlands restoration project unless that project is subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through that project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations.

(f) COST-SHARING.--

(1) FEDERAL SHARE.--Amounts made available in accordance with section 306 of this title to carry out coastal wetlands restoration projects under this title shall provide 75 percent of the cost of such projects.

(2) FEDERAL SHARE UPON CONSERVATION PLAN APPROVAL.--Notwithstanding the previous paragraph, if the State develops a Coastal Wetlands Conservation Plan pursuant to this title, and such conservation plan is approved pursuant to section 304 of this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project under this section shall be 85 percent of the cost of the project. In the event that the Secretary, the Director, and the Administrator jointly determine that the State is not taking reasonable steps to implement and administer a conservation plan developed and approved pursuant to this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project shall revert to 75 percent of the cost of the project: Provided, however, that such reversion to the lower cost share level shall not occur until the Governor, has been provided notice of, and opportunity for hearing on, any such determination by the Secretary, the Director, and Administrator, and the State has been given ninety days from such notice or hearing to take corrective action.

(3) FORM OF STATE SHARE.--The share of the cost required of the State shall be from a non-Federal source. Such State share shall consist of a cash contribution of not less than 5 percent of the cost of the project. The balance of such State share may take the form of lands, easements, or right-of-way, or any other form of in-kind contribution determined to be appropriate by the lead Task Force member.

(4) Paragraphs (1), (2), and (3) of this subsection shall not affect the existing cost-sharing agreements for the following projects: Caernarvon Freshwater Diversion, Davis Pond Freshwater Diversion, and Bonnet Carre Freshwater Diversion.

SEC. 304. LOUISIANA COASTAL WETLANDS CONSERVATION PLANNING.

(a) DEVELOPMENT OF CONSERVATION PLAN.--
(1) AGREEMENT.--The Secretary, the Director, and the Administrator are directed to enter into an agreement with the Governor, as set forth in paragraph (2) of this subsection, upon notification of the Governor's willingness to enter into such agreement.
(2) TERMS OF AGREEMENT.--
(A) Upon receiving notification pursuant to paragraph (1) of this subsection, the Secretary, the Director, and the Administrator shall promptly enter into an agreement (hereafter in this section referred to as the "agreement") with the State under the terms set forth in subparagraph (B) of this paragraph.
(B) The agreement shall--
(i) set forth a process by which the State agrees to develop, in accordance with this section, a coastal wetlands conservation plan (hereafter in this section referred to as the "conservation plan");
(ii) designate a single agency of the State to develop the conservation plan;
(iii) assure an opportunity for participation in the development of the conservation plan, during the planning period, by the public and by Federal and State agencies;
(iv) obligate the State, not later than three years after the date of signing the agreement, unless extended by the parties thereto, to submit the conservation plan to the Secretary, the Director, and the Administrator for their approval; and
(v) upon approval of the conservation plan, obligate the State to implement the conservation plan.
(3) GRANTS AND ASSISTANCE.--Upon the date of signing the agreement--
(A) the Administrator shall, in consultation with the Director, with the funds made available in accordance with section 306 of this title, make grants during the development of the conservation plan to assist the designated State agency in developing such plan. Such grants shall not exceed 75 percent of the cost of developing the plan; and
(B) the Secretary, the Director, and the Administrator shall provide technical assistance to the State to assist it in the development of the plan.
(b) CONSERVATION PLAN GOAL.--If a conservation plan is developed pursuant to this section, it shall have a goal of achieving no net loss of wetlands in the coastal areas of Louisiana as a result of development activities initiated subsequent to approval of the plan, exclusive of any wetlands gains achieved through implementation of the preceding section of this title.
(c) ELEMENTS OF CONSERVATION PLAN.--The conservation plan authorized by this section shall include--
(1) identification of the entire coastal area in the State that contains coastal wetlands;
(2) designation of a single State agency with the responsibility for implementing and enforcing the plan;
(3) identification of measures that the State shall take in addition to existing Federal authority to achieve a goal of no net loss of wetlands as a result of development activities, exclusive of any wetlands gains achieved through implementation of the preceding section of this title;

(4) a system that the State shall implement to account for gains and losses of coastal wetlands within coastal areas for purposes of evaluating the degree to which the goal of no net loss of wetlands as a result of development activities in such wetlands or other waters has been attained;
(5) satisfactory assurance that the State will have adequate personnel, funding, and authority to implement the plan;
(6) a program to be carried out by the State for the purpose of educating the public concerning the necessity to conserve wetlands;
(7) a program to encourage the use of technology by persons engaged in development activities that will result in negligible impact on wetlands; and
(8) a program for the review, evaluation, and identification of regulatory and nonregulatory options that will be adopted by the State to encourage and assist private owners of wetlands to continue to maintain those lands as wetlands.
(d) APPROVAL OF CONSERVATION PLAN.--
(1) IN GENERAL.--If the Governor submits a conservation plan to the Secretary, the Director, and the Administrator for their approval, the Secretary, the Director, and the Administrator shall, within one hundred and eighty days following receipt of such plan, approve or disapprove it.
(2) APPROVAL CRITERIA.--The Secretary, the Director, and the Administrator shall approve a conservation plan submitted by the Governor, if they determine that -
(A) the State has adequate authority to fully implement all provisions of such a plan;
(B) such a plan is adequate to attain the goal of no net loss of coastal wetlands as a result of development activities and complies with the other requirements of this section; and
(C) the plan was developed in accordance with terms of the agreement set forth in subsection (a) of this section.
(e) MODIFICATION OF CONSERVATION PLAN.--
(1) NONCOMPLIANCE.--If the Secretary, the Director, and the Administrator determine that a conservation plan submitted by the Governor does not comply with the requirements of subsection (d) of this section, they shall submit to the Governor a statement explaining why the plan is not in compliance and how the plan should be changed to be in compliance.
(2) RECONSIDERATION.--If the Governor submits a modified conservation plan to the Secretary, the Director, and the Administrator for their reconsideration, the Secretary, the Director, and Administrator shall have ninety days to determine whether the modifications are sufficient to bring the plan into compliance with requirements of subsection (d) of this section.
(3) APPROVAL OF MODIFIED PLAN.--If the Secretary, the Director, and the Administrator fail to approve or disapprove the conservation plan, as modified, within the ninety-day period following the date on which it was submitted to them by the Governor, such plan, as modified, shall be deemed to be approved effective upon the expiration of such ninety-day period.
(f) AMENDMENTS TO CONSERVATION PLAN.--If the Governor amends the conservation plan approved under this section, any such amended plan shall be considered a new plan and shall be subject to the requirements of this section; except that minor changes to such plan shall not be subject to the requirements of this section.
(g) IMPLEMENTATION OF CONSERVATION PLAN.--A conservation plan approved under this section shall be implemented as provided therein.
(h) FEDERAL OVERSIGHT.--

(1) INITIAL REPORT TO CONGRESS.--Within one hundred and eighty days after entering into the agreement required under subsection (a) of this section, the Secretary, the Director, and the Administrator shall report to the Congress as to the status of a conservation plan approved under this section and the progress of the State in carrying out such a plan, including and accounting, as required under subsection (c) of this section, of the gains and losses of coastal wetlands as a result of development activities.
(2) REPORT TO CONGRESS.--Twenty-four months after the initial one hundred and eighty day period set forth in paragraph (1), and at the end of each twenty-four-month period thereafter, the Secretary, the Director, and the Administrator shall, report to the Congress on the status of the conservation plan and provide an evaluation of the effectiveness of the plan in meeting the goal of this section.

SEC. 305 NATIONAL COASTAL WETLANDS CONSERVATION GRANTS.

(a) MATCHING GRANTS.--The Director shall, with the funds made available in accordance with the next following section of this title, make matching grants to any coastal State to carry out coastal wetlands conservation projects from funds made available for that purpose.
(b) PRIORITY.--Subject to the cost-sharing requirements of this section, the Director may grant or otherwise provide any matching moneys to any coastal State which submits a proposal substantial in character and design to carry out a coastal wetlands conservation project. In awarding such matching grants, the Director shall give priority to coastal wetlands conservation projects that are--
(1) consistent with the National Wetlands Priority Conservation Plan developed under section 301 of the Emergency Wetlands Resources Act (16 U.S.C. 3921); and
(2) in coastal States that have established dedicated funding for programs to acquire coastal wetlands, natural areas and open spaces. In addition, priority consideration shall be given to coastal wetlands conservation projects in maritime forests on coastal barrier islands.
(c) CONDITIONS.--The Director may only grant or otherwise provide matching moneys to a coastal State for purposes of carrying out a coastal wetlands conservation project if the grant or provision is subject to terms and conditions that will ensure that any real property interest acquired in whole or in part, or enhanced, managed, or restored with such moneys will be administered for the long-term conservation of such lands and waters and the fish and wildlife dependent thereon.
(d) COST-SHARING.--
(1) FEDERAL SHARE.--Grants to coastal States of matching moneys by the Director for any fiscal year to carry out coastal wetlands conservation projects shall be used for the payment of not to exceed 50 percent of the total costs of such projects: except that such matching moneys may be used for payment of not to exceed 75 percent of the costs of such projects if a coastal State has established a trust fund, from which the principal is not spent, for the purpose of acquiring coastal wetlands, other natural area or open spaces.
(2) FORM OF STATE SHARE.--The matching moneys required of a coastal State to carry out a coastal wetlands conservation project shall be derived from a non-Federal source.
(3) IN-KIND CONTRIBUTIONS.--In addition to cash outlays and payments, in-kind contributions of property or personnel services by non-Federal interests for activities under this section may be used for the non-Federal share of the cost of those activities.
(e) PARTIAL PAYMENTS.--
(1) The Director may from time to time make matching payments to carry out coastal wetlands conservation projects as such projects progress, but such payments, including

previous payments, if any, shall not be more than the Federal pro rata share of any such project in conformity with subsection (d) of this section.

(2) The Director may enter into agreements to make matching payments on an initial portion of a coastal wetlands conservation project and to agree to make payments on the remaining Federal share of the costs of such project from subsequent moneys if and when they become available. The liability of the United States under such an agreement is contingent upon the continued availability of funds for the purpose of this section.

(f) WETLANDS ASSESSMENT.--The Director shall, with the funds made available in accordance with the next following section of this title, direct the U.S. Fish and Wildlife Service's National Wetlands Inventory to update and digitize wetlands maps in the State of Texas and to conduct an assessment of the status, condition, and trends of wetlands in that State.

SEC. 306. DISTRIBUTION OF APPROPRIATIONS.

(a) PRIORITY PROJECT AND CONSERVATION PLANNING EXPENDITURES.--Of the total amount appropriated during a given fiscal year to carry out this title, 70 percent, not to exceed $70,000,000, shall be available, and shall remain available until expended, for the purposes of making expenditures--

(1) not to exceed the aggregate amount of $5,000,000 annually to assist the Task Force in the preparation of the list required under this title and the plan required under this title, including preparation of--

(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 wetlands restoration projects;

(2) to carry out coastal wetlands restoration projects in accordance with the priorities set forth on the list prepared under this title;

(3) to carry out wetlands restoration projects in accordance with the priorities set forth in the restoration plan prepared under this title;

(4) to make grants not to exceed $2,500,000 annually or $10,000,000 in total, to assist the agency designated by the State in development of the Coastal Wetlands Conservation Plan pursuant to this title.

(b) COASTAL WETLANDS CONSERVATION GRANTS.--Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed $15,000,000 shall be available, and shall remain available to the Director, for purposes of making grants--

(1) to any coastal State, except States eligible to receive funding under section 306(a), to carry out coastal wetlands conservation projects in accordance with section 305 of this title; and

(2) in the amount of $2,500,000 in total for an assessment of the status, condition, and trends of wetlands in the State of Texas.

(c) NORTH AMERICAN WETLANDS CONSERVATION.--Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed $15,000,000, shall be available to, and shall remain available until expended by, the Secretary of the Interior for allocation to carry out wetlands conservation projects in any coastal State under section 8 of the North American Wetlands Conservation Act (Public Law 101-233, 103 Stat. 1968, December 13, 1989).

SEC. 307. GENERAL PROVISIONS.

(a) ADDITIONAL AUTHORITY FOR THE CORPS OF ENGINEERS.--The Secretary is authorized to carry out projects for the protection, restoration, or enhancement of aquatic and associated ecosystems, including projects for the protection, restoration, or creation of wetlands and coastal ecosystems. In carrying out such projects, the Secretary shall give such projects equal consideration with projects relating to irrigation, navigation, or flood control.
(b) STUDY.--The Secretary is hereby authorized and directed to study the feasibility of modifying the operation of existing navigation and flood control projects to allow for an increase in the share of the Mississippi River flows and sediment sent down the Atchafalaya River for purposes of land building and wetlands nourishment.

SEC.308. CONFORMING AMENDMENT.

16 U.S.C. 777c is amended by adding the following after the first sentence: "The Secretary shall distribute 18 per centum of each annual appropriation made in accordance with the provisions of section 777b of this title as provided in the Coastal Wetlands Planning, Protection and Restoration Act: Provided, That, notwithstanding the provisions of section 777b, such sums shall remain available to carry out such Act through fiscal year 1999."

LEGISLATIVE HISTORY – H.R. 5390 (S. 2244):

SENATE REPORTS: No. 101-523 accompanying S. 2244 (Comm. On Environmental and
Public Works).
CONGRESSIONAL RECORD, Vol. 136 (1990):
Oct. 1, considered and passed House.
Oct. 26, considered and passed Senate, amended, in lieu of S. 2244.
Oct. 27, House concurred in Senate amendment.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 26 (1990):
Nov. 29, Presidential statement.

Coastal Wetlands Planning, Protection, and

Restoration Act

12th Priority Project List Report

Appendix B

Wetland Value Assessment Methodology and Community Models

Appendix B

Wetland Value Assessment Methodology and Community Models

Table of Contents

Wetland Value Assessment Methodology

I. Barrier Headland Community Model

INTRODUCTION

The barrier headland model was developed to determine the wetland benefits of headland restoration projects and was developed by an interagency/academic workgroup consisting of individuals with backgrounds in wildlife ecology, fisheries ecology, geomorphology, and plant ecology. The barrier headland model has been developed for determining the suitability of barrier headland habitat along the Louisiana coast in providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species.

The barrier island model was developed to evaluate traditional barrier island habitat along the Louisiana coast; those containing emergent habitat surrounded by open water. However, non-barrier island shorelines (i.e., headlands) also contain barrier island-type habitats such as beach, dune, and supratidal habitats but do not provide the same functions as barrier islands. Application of the barrier island model to those areas was not practical because many of the variables contained within the barrier island model do not apply to headland areas. Therefore, this model was developed to complement the barrier island model.

The barrier headland model should be applied to shoreline areas along the coast which consist of beach, dune, and supratidal habitat and which naturally decrease in elevation to an intertidal marsh. By nature, barrier headlands are contiguous with the mainland marsh and have not yet detached and begun formation of a barrier island. Conversely, the barrier island model is applied to detached headlands which have formed barrier islands and are gulfward of bay or lake systems. This model has been designed to function at a community level and therefore attempts to define an optimal combination of habitat conditions for all fish and wildlife species utilizing barrier headlands.

VARIABLE SELECTION

As with barrier islands, headlands consist of many different habitat components including surf zone, beach, dune, supratidal marsh (i.e., swale), and unvegetated flats or washover areas. A key assumption in model development was that for a barrier headland to provide optimal conditions for fish and wildlife, all of the above habitat components should exist. Unlike the barrier island model which encompasses intertidal and subtidal habitats, this model does not. Those habitat types exist landward of the headland and should be evaluated using the appropriate marsh model.

The variables selected for this model were those variables within the barrier island model which could be applied to barrier headland habitat. The model development group agreed that barrier headlands provide many of the same functions as barrier islands such as nesting and resting sites for birds and other wildlife, storm surge protection of interior marshes, and proximity to gulf/marine foraging habitat. Furthermore, barrier headlands consist of many of the same habitat components as barrier islands such as surf zone, beach, dune, swale, and woody areas. Therefore, the group agreed that those variables within the barrier island model which address dune and supratidal habitats, vegetative cover, woody vegetation, and beach zone features should be included in the barrier headland model. The final list of variables included in this model are: 1) percent of the subaerial area that is classified as dune habitat; 2) percent of the subaerial area that is classified as supratidal habitat; 3) percent vegetative cover of dune and supratidal habitats; 4) percent vegetative cover by woody species; and 5) beach/surf zone features.

SUITABILITY INDEX GRAPH DEVELOPMENT

Suitability Index graph development was very similar to the process used for other community models developed for CWPPRA. The suitability index graphs from the barrier island community model were modified so that the variable-habitat quality relationships corresponded to barrier headland habitat. The process of SI graph development is one of constant evolution, feedback, and refinement; the form of each SI graph was decided upon through consensus among EnvWG members.

The Suitability Index graphs were developed according to the following assumptions.

Variable V_1 - Percent of the total project area that is classified as dune habitat. Dune habitat is defined as subaerial habitat $\geq$ 5 ft. NAVD88 and encompasses foredune, dune, and reardune. Although dune habitat occurs at elevations below 5 ft. NAVD88, lower-elevation dunes are more ephemeral and more frequently overwashed, which reduces their habitat value. Lower-elevation dunes often consist of vegetation more commonly associated with swale habitat and lack a high percentage of "typical" dune species.

Suitability index graph relationships for this variable were determined by: 1) reviewing profiles and cross-sections of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of habitat distribution on the islands, and 3) field knowledge of those involved in development of the model.

Variable V_2 - Percent of the total project area that is classified as supratidal habitat. Supratidal habitat occurs from 2.0 ft. NAVD88 to 4.9 ft. NAVD88. This habitat type primarily encompasses swale and may include low-elevation dune and beach habitat.

Suitability index graph relationships for this variable were determined by: 1) reviewing profiles and cross-sections of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of habitat distribution on the islands, and 3) field knowledge of those involved in development of the model.

Variable V_3 - Percent vegetative cover of dune and supratidal habitats. Common dune species include beach tea (*Croton punctatus*), bitter panicum (*Panicum amarum*), morningglory (*Ipomoea sp.*), marshhay cordgrass (*Spartina patens*), and *Heterotheca subaxillaris*. Common foredune/high beach species include sea rocket (*Cakile fusiformis*), sea purslane (*Sesuvium portulacastrum*), and seaside heliotrope (*Heliotropium curassavicum*).

Common supratidal species include goldenrod (*Solidago sempervirens*), marshhay cordgrass (*Spartina patens*), saltgrass (*Distichlis spicata*), deerpea (*Vigna luteola*), eastern baccharis (*Baccharis halimifolia*), marshelder (*Iva frutescens*), sea ox-eye (*Borrichia *frutescens*), glasswort (*Salicornia bigelovii, S. virginica*), saltwort (*Batis maritima*), black mangrove (*Avicennia germinans*), beach pea (*Strophostyles helvola*), seashore paspalum (*Paspalum vaginatum*), *Heterotheca subaxillaris*, *Fimbristylis castanea*, *Suaeda linearis*, smooth cordgrass (*Spartina alterniflora*), *Sabatia stellaris* and seaside gerardia (*Agalinis maritima*).

Suitability index graph relationships for this variable were determined by: 1) reviewing vegetative cover transects of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of vegetative cover, and 3) field knowledge of those involved in development of the model.

<u>Variable V_4 - Percent vegetative cover by woody species.</u> This variable is intended to capture the habitat value of areas vegetated by woody species. Common woody species include black mangrove (*Avicennia germinans*), eastern baccharis (*Baccharis halimifolia*), wax myrtle (*Myrica cerifera*), and marshelder (*Iva frutescens*). This variable is defined as the percent of the subaerial vegetated area consisting of at least two woody species. The suitability index is divided by two for islands with only one woody species.

The suitability index graph for this variable was primarily based on the best professional judgment and personal field knowledge of those involved in model development. It was agreed that cover by woody species should be a small percentage (10% to 20%) of the vegetative cover on an island.

<u>Variable V_5 - Beach/surf zone features.</u> This variable is intended to capture the habitat value of the beach/surf zone. The suitability index graph for this variable is based on the assumption that a natural beach/surf zone slope or profile provides optimal habitat conditions for fish and wildlife. Man-made features such as breakwaters, containment dikes, and shoreline protection provide sub-optimal conditions. The suitability index value for each beach zone feature was based on the best professional judgment and field knowledge of those involved in model development.

HABITAT SUITABILITY INDEX FORMULA

As with the barrier island model, the EnvWG agreed that the primary habitat variables (i.e., those pertaining to dune and supratidal habitats) were the most important variables in characterizing the habitat quality of a barrier island. Therefore, those variables were given greater influence (i.e., 64% of the model weight) in the model than the remaining variables. Within the HSI formula, variable influence is only determined by the weight (i.e., multiplier) assigned to each variable.

BENEFIT ASSESSMENT

One HSI formula is used for the barrier headland model to calculate net benefits in the project area. Calculation of HUs, AAHUs, and net AAHUs follow the procedure described in the Wetland Value Assessment Methodology Introduction.

Wetland Value Assessment Community Model

Barrier Headland Community Model

Dune Habitat
Variable V_1 Percent of the total project area that is classified as dune habitat.

Supratidal Habitat
Variable V_2 Percent of the total project area that is classified as supratidal habitat.

Vegetative Cover
Variable V_3 Percent vegetative cover of dune and supratidal habitats.

Woody Species
Variable V_4 Percent vegetative cover by woody species.

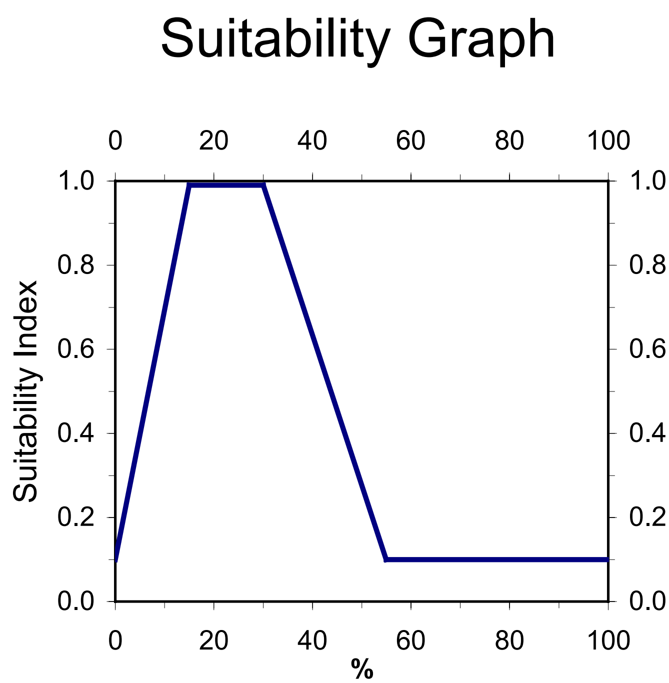
Beach Zone Habitat
Variable V_5 Beach/surf zone features.

HSI Calculation:

$$HSI = 0.23(V_1) + 0.23(V_2) + 0.18(V_3) + 0.18(V_4)+ 0.18(V_5)$$

Barrier Headland

Variable V_1 Percent of the total project area that is classified as dune habitat.

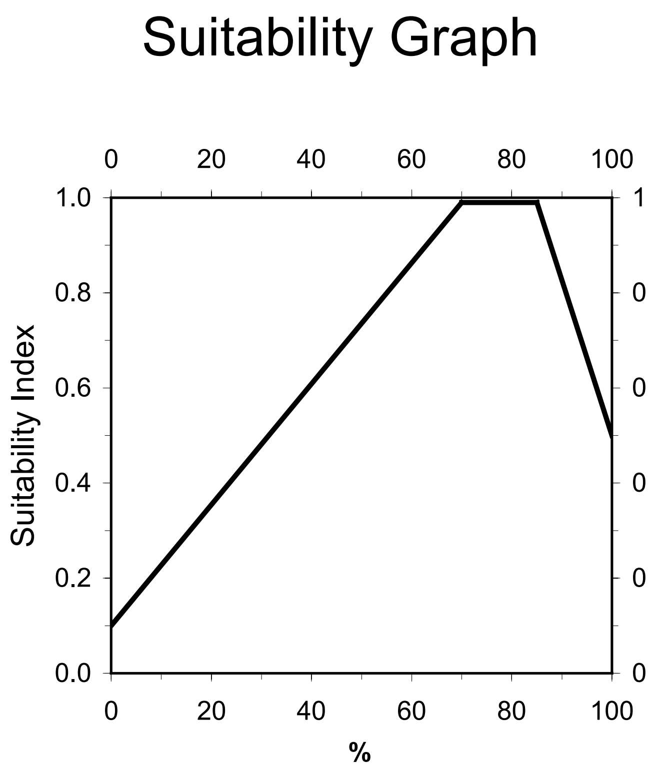


Line Formulas

If % < 15, then SI = (0.06*%) + 0.1
If 15 ≤ % ≤ 30, then SI = 1.0
If 30 < % ≤ 55, then SI = (-0.036*%) + 2.08
If % > 55, then SI = 0.1

Barrier Headland

Variable V_2 Percent of the total project area that is classified as supratidal habitat.

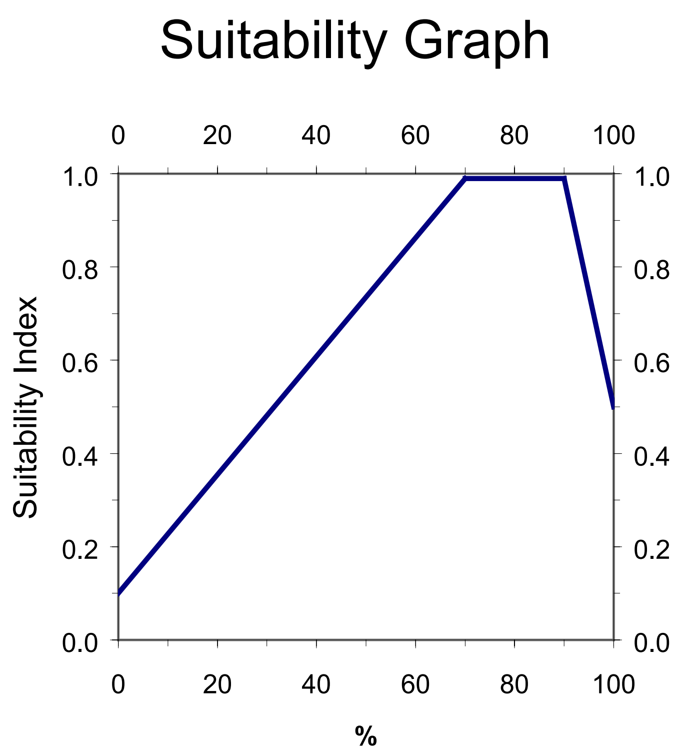


Line Formulas

If % < 70, then SI = (0.013*%) + 0.1
If 70 $\leq$ % $\leq$ 85, then SI = 1.0
If % > 85, then SI = (-0.0333*%) + 3.83

Barrier Headland

Variable V_3 Percent vegetative cover of dune and supratidal habitats.

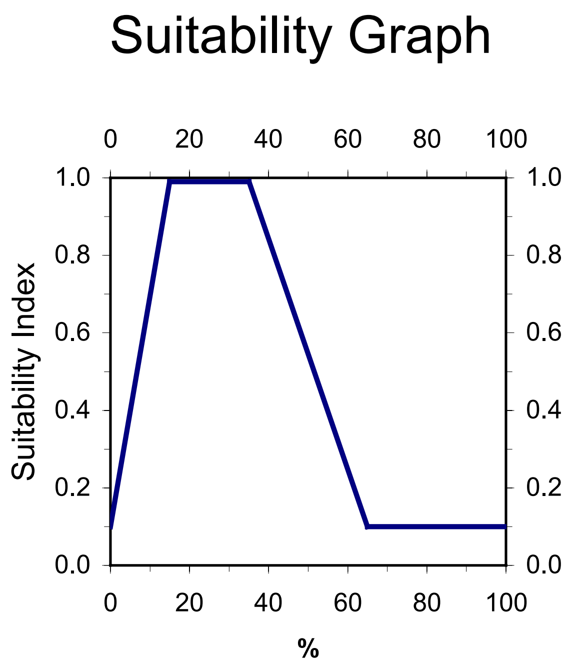


Line Formulas

If % < 70, then SI = (0.013*%) + 0.1
If 70 ≤ % ≤ 90, then SI = 1.0
If % > 90, then SI = (-0.05*%) + 5.5

Barrier Headland

Variable V_4 Percent vegetative cover by woody species.

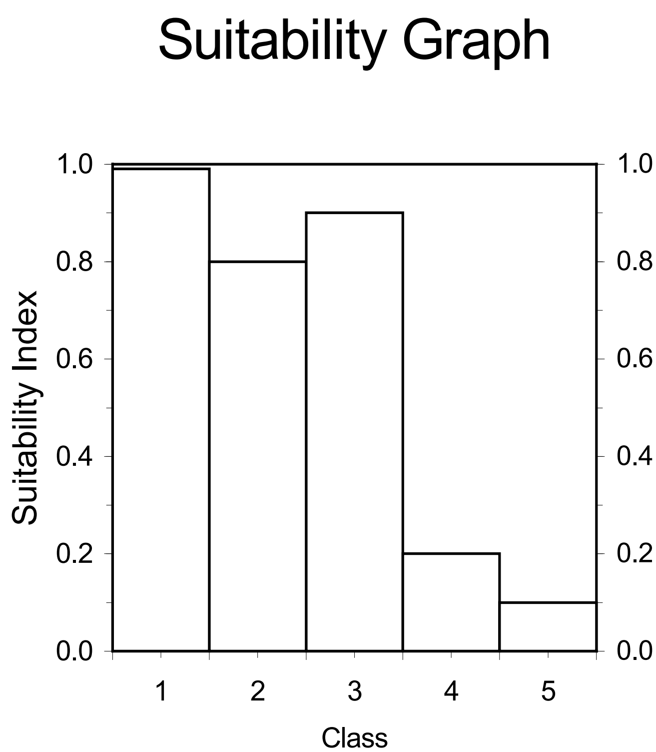


Line Formulas

If % < 15, then SI = (0.06*%) + 0.1
If 15 ≤ % ≤ 35, then SI = 1.0
If 35 < % ≤ 65, then SI = (-0.03*%) + 2.05
If % > 65, then SI = 0.1

Barrier Headland

Variable V_5 Beach/surf zone features.



Class 1 = Natural Beach/Unconfined Disposal
Class 2 = Confined Disposal
Class 3 = Breakwaters
Class 4 = Rock on Beach
Class 5 = Seawall/No emergent habitat

II. Barrier Island Community Model

INTRODUCTION

Development of the barrier island model began in 2000 when the Environmental Work Group (EnvWG) requested Drs. Shea Penland and Mark Hester of the University of New Orleans to develop a barrier island model which could be used to determine the wetland benefits of barrier island restoration projects. Historically, the EnvWG utilized the saline emergent marsh model (Attachment 1) to evaluate barrier island restoration projects. For several years, it was recognized that the saline marsh model was inadequate in determining barrier island habitat quality and projecting barrier island restoration project benefits. Barrier islands provide many functions not provided by interior saline marsh and a unique assessment model was necessary to characterize those functions.

A draft barrier island model was presented in May, 2001 and was reviewed and further developed by the EnvWG and Academic Advisory Subcommittee (AAS). Also participating in model development was an interagency group involved in the Barataria Barrier Shoreline Feasibility Study being conducted by the Corps of Engineers (COE) and the Louisiana Department of Natural Resources (LDNR). That group was also in need of a barrier island assessment model to evaluate restoration alternatives proposed along the Barataria Basin gulf shoreline. Both groups, the EnvWG and the feasibility study group, worked together in reviewing and refining several drafts to reach consensus on a final assessment model. The model was developed by an interagency/academic workgroup consisting of individuals with backgrounds in wildlife ecology, fisheries ecology, geomorphology, and plant ecology. As with all habitat assessment models, this model has undergone several revisions since development began in 2000. Model refinement will continue as the model is applied to various restoration projects in different environmental settings. Model refinement can only occur after practical application through which model shortcomings are identified.

This model was developed for determining the suitability of Louisiana coastal barrier islands in providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species. Specifically, this model should be applied to barrier islands which consist of emergent habitats and which are gulfward of bay or lake systems. This model was developed to evaluate restoration projects on barrier islands in the Terrebonne and Barataria Basins (e.g., Isles Dernieres, Timbalier, Grand Terre). Application to the Chandeleur Islands, which contain extensive seagrass beds on the bayside, may require model revisions as the value of those seagrass beds is not specifically captured by this model. This model has been designed to function at a community level and therefore attempts to define an optimal combination of habitat conditions for all fish and wildlife species utilizing barrier islands.

VARIABLE SELECTION

The initial list of variables proposed for the barrier island model included;1) percent of the area classified as supratidal habitat, 2) percent of the supratidal habitat that is vegetated, 3) percent of the area classified as intertidal habitat, 4) percent of the intertidal habitat that is vegetated, 5) marsh edge and interspersion, 6) percent of the area classified as subtidal habitat (relative to subaerial), 7) percent of the subtidal habitat that is vegetated, 8) percent of the project area width that equals or exceeds the 20-year erosion rate, 9) dune height, and 10) percent of project length that protects interior marshes.

Barrier islands consist of many different habitat components including surf zone, beach, dune, supratidal marsh (i.e., swale), intertidal marsh, ponds, lagoons, tidal creeks, unvegetated flats, and subtidal habitat. A key assumption in model development was that for a barrier island to provide optimal conditions for fish and wildlife, all of the above habitat components should exist. Therefore, model variables characterize those key habitat components to provide an index of habitat quality.

The barrier island model development group initially agreed that model variables should address barrier island habitat components (e.g., dune, supratidal, intertidal, vegetative cover, etc.), island integrity/longevity (e.g., island width), and back-barrier/wave shadow benefits. Published Habitat Suitability Index (HSI) models provided little help in developing a potential list of variables as very few HSI models address species-specific habitat needs on barrier islands.

Variables which addressed island integrity (i.e., island width and dune height) were omitted from the model because they do not specifically address fish and wildlife habitat quality. However, those variables are important in determining island longevity and the loss of habitat over the project life. Therefore, they are necessary to determine the quantity of habitat at any given point during the analysis but are not needed to characterize habitat quality.

Woody habitat on barrier islands provides the important functions of nesting habitat for certain species such as the brown pelican and stopover habitat for neotropical migratory birds. Therefore, it was agreed to include a variable addressing that habitat component. In addition, the importance of beach and surf zone habitat was addressed by including a variable which describes the features, if any, located in the beach/surf zone. That zone is especially important as foraging habitat for shorebirds and wading birds and provides habitat for unique nekton assemblages.

The final list of variables included in this model are: 1) percent of the subaerial area that is classified as dune habitat; 2) percent of the dune habitat that is vegetated; 3) percent of the subaerial area that is classified as supratidal habitat; 4) percent of the supratidal habitat that is vegetated; 5) percent of the subaerial area that is classified as intertidal habitat; 6) percent of the intertidal habitat that is vegetated; 7) percent of the area that is classified as subtidal habitat (relative to subaerial); 8) percent vegetative cover by woody species; 9) marsh edge and interspersion; and 10) beach/surf zone features.

SUITABILITY INDEX GRAPH DEVELOPMENT

A key assumption in developing the suitability index graphs was that existing, stable barrier islands which contain the three key habitat components (i.e., dune, supratidal, and intertidal habitats) should serve as the optimum to which all other islands should be compared. The model development group agreed that the model should not use, as its optimum, an island which would not have existed nor presently exists along the Louisiana coast. For example, the optimal island (i.e., HSI = 1.0) should not be described as one 3 miles wide, with dunes 20 feet high and 1,000 feet wide, and with extensive forested habitat. Islands of that type have never existed along the Louisiana coast and restoration efforts are not aimed at creating islands of that sort. Although, “super” barrier islands could be constructed and would provide the same functions as typical barrier islands, it was agreed that creation of such islands is not likely and a comparison of a typical barrier island to a “super” island would be unrealistic. In essence, the group agreed that optimal barrier island habitat once existed along the Louisiana coast and that a naturally-formed, stable barrier island should serve as the optimal condition in this model. Therefore, historical data and other information from existing barrier islands served as the primary basis for suitability index graph development.

Suitability Index graph development was very similar to the process used for other habitat assessment models developed for CWPPRA (e.g., marsh community models). A variety of resources were utilized to construct each SI graph, including personal knowledge of the barrier island model development group and EnvWG, consultation with other professionals and researchers outside the model development group, and published and unpublished data and studies. The process of SI graph development is one of constant evolution, feedback, and refinement; the form of each SI graph was decided upon through consensus among EnvWG members.

The Suitability Index graphs were developed according to the following assumptions.

Variable V_{1a} - Percent of the total subaerial area that is classified as dune habitat. Dune habitat is defined as subaerial habitat $\geq$ 5 ft. NAVD88 and encompasses foredune, dune, and reardune. Although dune habitat occurs at elevations below 5 ft. NAVD88, lower-elevation dunes are more ephemeral and more frequently overwashed, which reduces their habitat value. Lower-elevation dunes often consist of vegetation more commonly associated with swale habitat and lack a high percentage of "typical" dune species.

Suitability index graph relationships for this variable were determined by: 1) reviewing profiles and cross-sections of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of habitat distribution on the islands, and 3) field knowledge of those involved in development of the model.

Variable V_{1b} - Percent of dune habitat that is vegetated. Common dune species include beach tea (*Croton punctatus*), bitter panicum (*Panicum amarum*), morningglory (*Ipomoea sp.*), marshhay cordgrass (*Spartina patens*), and *Heterotheca subaxillaris*. Common foredune/high beach species include sea rocket (*Cakile fusiformis*), sea purslane (*Sesuvium portulacastrum*), and seaside heliotrope (*Heliotropium curassavicum*).

Suitability index graph relationships for this variable were determined by: 1) reviewing vegetative cover transects of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of vegetative cover, and 3) field knowledge of those involved in development of the model.

Variable V_{2a} - Percent of the total subaerial area that is classified as supratidal habitat. Supratidal habitat occurs from 2.0 ft. NAVD88 to 4.9 ft. NAVD88. This habitat type primarily encompasses swale and may include low-elevation dune and beach habitat.

Suitability index graph relationships for this variable were determined by: 1) reviewing profiles and cross-sections of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of habitat distribution on the islands, and 3) field knowledge of those involved in development of the model.

Variable V_{2b} - Percent of supratidal habitat that is vegetated. Common supratidal species include goldenrod (*Solidago sempervirens*), marshhay cordgrass (*Spartina patens*), saltgrass (*Distichlis spicata*), deerpea (*Vigna luteola*), eastern baccharis (*Baccharis halimifolia*), marshelder (*Iva frutescens*), sea ox-eye (*Borrichia frutescens*), glasswort (*Salicornia bigelovii, S. virginica*), saltwort (*Batis maritima*), black mangrove (*Avicennia germinans*), beach pea (*Strophostyles helvola*), seashore paspalum (*Paspalum vaginatum*), *Heterotheca subaxillaris*, *Fimbristylis castanea*, *Suaeda linearis*, smooth cordgrass (*Spartina alterniflora*), *Sabatia stellaris* and seaside gerardia (*Agalinis maritima*).

Suitability index graph relationships for this variable were determined by: 1) reviewing vegetative cover transects of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of vegetative cover, and 3) field knowledge of those involved in development of the model.

Variable V_{3a} - Percent of the total subaerial area that is classified as intertidal habitat**.** Intertidal habitat occurs from 0.0 ft. NAVD88 to 1.9 ft. NAVD88. This habitat type encompasses intertidal marsh, mudflats, beach, and any other habitats within that elevation range on the gulfside and bayside of the barrier island.

Suitability index graph relationships for this variable were determined by: 1) reviewing profiles and cross-sections of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of habitat distribution on the islands, and 3) field knowledge of those involved in development of the model.

Variable V_{3b} - Percent of intertidal habitat that is vegetated (bayside only). Common intertidal, back-barrier marsh species include smooth cordgrass (*Spartina alterniflora*) and black mangrove (*Avicennia germinans*). Intertidal habitat on the gulfside of an island is typically an unvegetated wash zone or low beach.

Suitability index graph relationships for this variable were determined by: 1) reviewing vegetative cover transects of existing barrier islands along the Louisiana coast, 2) field investigations which provided ocular estimates of vegetative cover, and 3) field knowledge of those involved in development of the model.

Variable V_4 - Percent subtidal habitat expressed as a percent relative to subaerial habitat.

Subtidal habitat occurs from –1.5 ft. NAVD88 to 0.0 NAVD88 and encompasses vegetated and unvegetated, open-water habitat.

The suitability index graph for this variable was primarily based on the best professional judgment and personal field knowledge of those involved in model development.

Variable V_5 - Percent vegetative cover by woody species. This variable is intended to capture the habitat value of areas vegetated by woody species. Common woody species include black mangrove (*Avicennia germinans*), eastern baccharis (*Baccharis halimifolia*), wax myrtle (*Myrica cerifera*), and marshelder (*Iva frutescens*). This variable is defined as the percent of the subaerial vegetated area consisting of at least two woody species. The suitability index is divided by two for islands with only one woody species.

The suitability index graph for this variable was primarily based on the best professional judgment and personal field knowledge of those involved in model development. It was agreed that cover by woody species should be a small percentage (10% to 20%) of the vegetative cover on an island.

Variable V_6 - Edge and interspersion. This variable is intended to capture the relative juxtaposition of intertidal, subaerial habitat (vegetated and unvegetated) and intra-island aquatic habitats such as ponds, lagoons, and tidal creeks associated with barrier islands. The degree of interspersion is determined by comparing the project area to sample illustrations (Appendix A) depicting different degrees of interspersion. Interspersion including ponds, lagoons, and tidal creeks is of specific importance in assessing the foraging and nursery habitat functions of barrier islands to marine and estuarine fish and shellfish and associated avian predators. These habitats are characterized by specific physical attributes and thus unique fish and shellfish assemblages exhibit greater selection and utilization of these back barrier habitats as residents and transients over other barrier island, bay, and mainland aquatic habitats. However, interspersion can be indicative of degradation of back-barrier marsh from subsidence, a factor taken into secondary consideration in assigning suitability indices to the various interspersion classes.

A high degree of interspersion is assumed to be optimal (SI = 1.0), and the lowest expression of interspersion (e.g., all marsh/unvegetated flat, all open water, or all marsh/unvegetated flat clumped together) is assumed to be less desirable in terms of community-based function and quality. Class 1 is representative of unvegetated flats and healthy back-barrier marsh with a high degree of at least two of the following: tidal creeks, tidal channels, ponds, and/or lagoons. Numerous small ponds (Class 2) offer a high degree of interspersion, but are also usually indicative of the beginning of marsh break-up and degradation, and are therefore assigned a lower SI of 0.8. Class 3 represents the development of larger open water areas from coalescence of aquatic habitats, due to overwash, subsidence, or impacts from oil and gas exploration which provide less interspersion. Once these larger open water areas develop, they no longer have the physicochemical factors (e.g., area, edge, temperature, salinity, and hydroperiod) that make them functionally distinct and of high quality and would be assigned a SI = 0.6. Carpet marsh or projects designed to create intertidal marsh without construction of aquatic habitats would lack functionally distinct interspersion and provide basically one intertidal habitat type; therefore, natural and created carpet marsh should also be classified as Class 3. Class 4 represents extreme stages of subsidence or oil and gas induced loss of back barrier marshes or dominance of breaching with unstable overwash flats (SI = 0.4). Although habitats represented by this classification are predominantly subtidal, unvegetated flats still provide valuable habitat for many fish and shellfish and provide loafing areas targeted by waterbirds. The lowest expression of interspersion, Class 5, consists of no emergent, intertidal land and is assumed to be least optimal from a community basis (SI = 0.1). However, this class can represent the development of inlets which in themselves are important spawning and foraging habitat for economically important marine fishery species.

The suitability index graph for this variable was determined by reviewing aerial photographs of back-barrier habitats and determining which degree of interspersion provided optimal habitat conditions for fish and wildlife. It was determined that five classes of interspersion would best depict the range of interspersion on barrier islands. The suitability index value for each interspersion class was based on fisheries studies by the Louisiana State University, Coastal Fisheries Institute and the National Marine Fisheries Service; avian surveys by the Louisiana Department of Wildlife and Fisheries; wetland studies by LUMCON and the Louisiana State University, Wetland Biogeochemistry Institute; best professional judgment; and field knowledge of those involved in model development.

Variable V_7 - Beach/surf zone features. This variable is intended to capture the habitat value of the beach/surf zone. The suitability index graph for this variable is based on the assumption that a natural beach/surf zone slope or profile provides optimal habitat conditions for fish and wildlife. Man-made features such as breakwaters, containment dikes, and shoreline protection provide sub-optimal conditions. The suitability index value for each beach zone feature was based on the best professional judgment and field knowledge of those involved in model development.

HABITAT SUITABILITY INDEX FORMULA

The EnvWG agreed that the primary habitat variables (i.e., those pertaining to dune, supratidal, and intertidal habitats) were the most important variables in characterizing the habitat quality of a barrier island. Therefore, those variables were given greater influence (i.e., 60% of the model weight) in the model than the remaining variables. Within the HSI formula, variable influence is determined only by the weight (i.e., multiplier) assigned to each variable.

BENEFIT ASSESSMENT

One HSI formula is used for the barrier island model to calculate net benefits in the project area. Calculation of HUs, AAHUs, and net AAHUs follow the procedure described in the Wetland Value Assessment Methodology Introduction.

Wetland Value Assessment Community Model

Barrier Island

Dune Habitat

Variable V_{1a} Percent of the total subaerial area that is classified as dune habitat.
Variable V_{1b} Percent of dune habitat that is vegetated.

Supratidal Habitat

Variable V_{2a} Percent of the total subaerial area that is classified as supratidal habitat.
Variable V_{2b} Percent of supratidal habitat that is vegetated.

Intertidal Habitat

Variable V_{3a} Percent of the total subaerial area that is classified as intertidal habitat.
Variable V_{3b} Percent of intertidal habitat that is vegetated.

Subtidal Habitat

Variable V_4 Percent subtidal habitat expressed as a percent relative to subaerial habitat.

Woody Species

Variable V_5 Percent vegetative cover by woody species.

Interspersion

Variable V_6 Edge and Interspersion.

Beach Zone Habitat

Variable V_7 Beach/surf zone features.

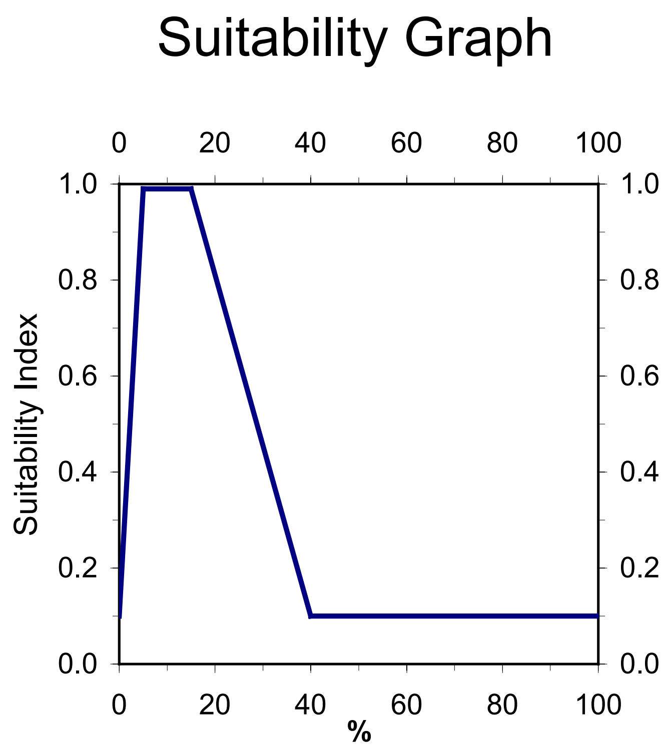
EXAMPLE for calculating V_{1a}, V_{2a}, V_{3a} and V_{4a}: If island cross section has an average dune width=50 m, supradtidal width=150 m, intertidal width=400 m, and subtidal width=150 m, then assume subaerial width =600m.
V_{1a}=(50/600)=8%, V_{2a}=(150/600)=25%, V_{3a}=(400/600)=67%, V_4=(150/600)=25%.

HSI Calculation:

$$HSI = 0.125(V_{1a}) + 0.05(V_{1b}) + 0.125(V_{2a}) + 0.05(V_{2b}) + 0.15(V_{3a}) + 0.10(V_{3b}) + 0.05(V_4) + 0.10(V_5) + 0.15(V_6) + 0.10(V_7)$$

Barrier Island

Variable V_{1a} Percent of the total subaerial area that is classified as dune habitat.

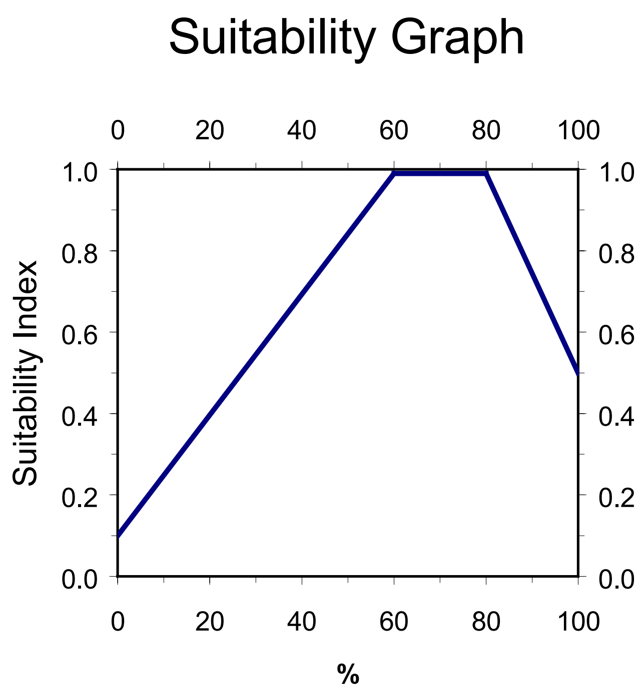


Line Formulas

If % < 5, then SI = (0.18*%) + 0.1
If $5 \leq \% \leq 15$, then SI = 1.0
If $15 < \% \leq 40$, then SI = (-0.036*%) + 1.54
If % > 40, then SI = 0.1

Barrier Island

Variable V_{1b} Percent of dune habitat that is vegetated.

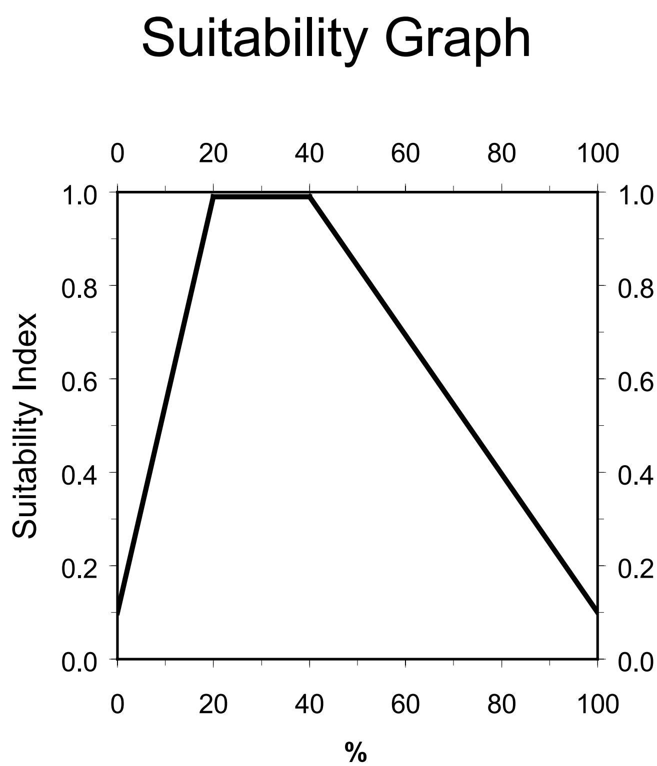


Line Formulas

If % < 60, then SI = (0.015*%) + 0.1
If 60 ≤ % ≤ 80, then SI = 1.0
If % > 80, then SI = (-0.045*%) + 4.6

Barrier Island

Variable V_{2a} Percent of the total subaerial area that is classified as supratidal habitat.

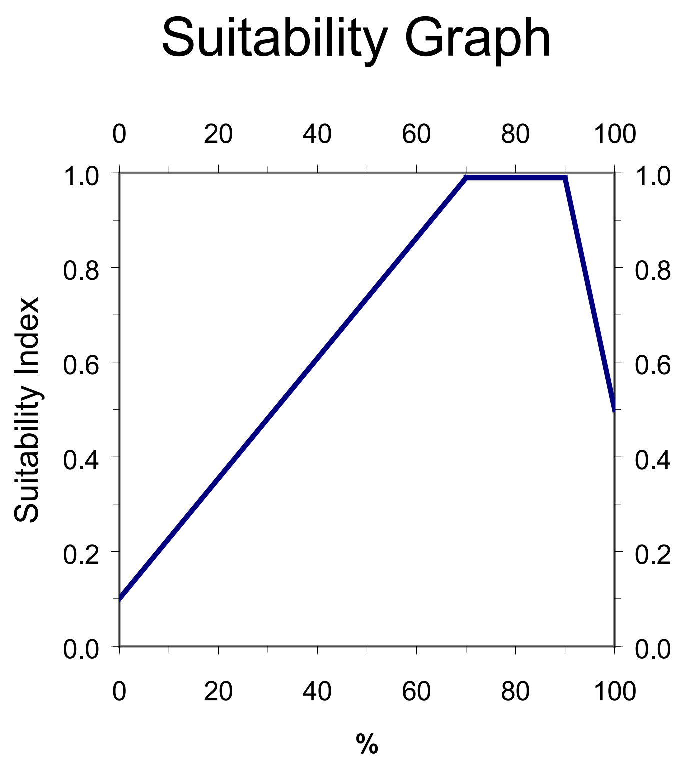


Line Formulas

If % < 20, then SI = (0.045*%) + 0.1
If 20 ≤ % ≤ 40, then SI = 1.0
If % > 40, then SI = (-0.015*%) + 1.6

Barrier Island

Variable V_{2b} Percent of supratidal habitat that is vegetated.

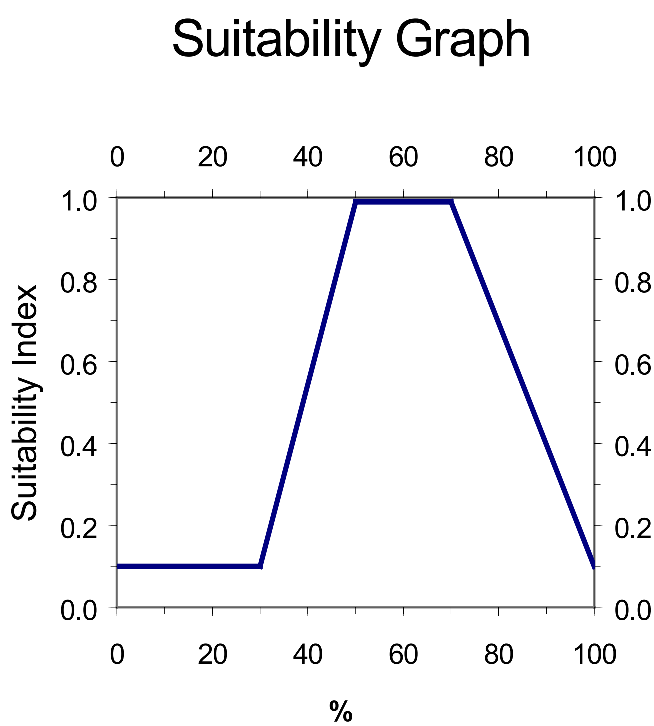


Line Formulas

If % < 70, then SI = (0.013*%) + 0.1
If 70 ≤ % ≤ 90, then SI = 1.0
If % > 90, then SI = (-0.05*%) + 5.5

Barrier Island

Variable V_{3a} Percent of the total subaerial area that is classified as intertidal habitat.

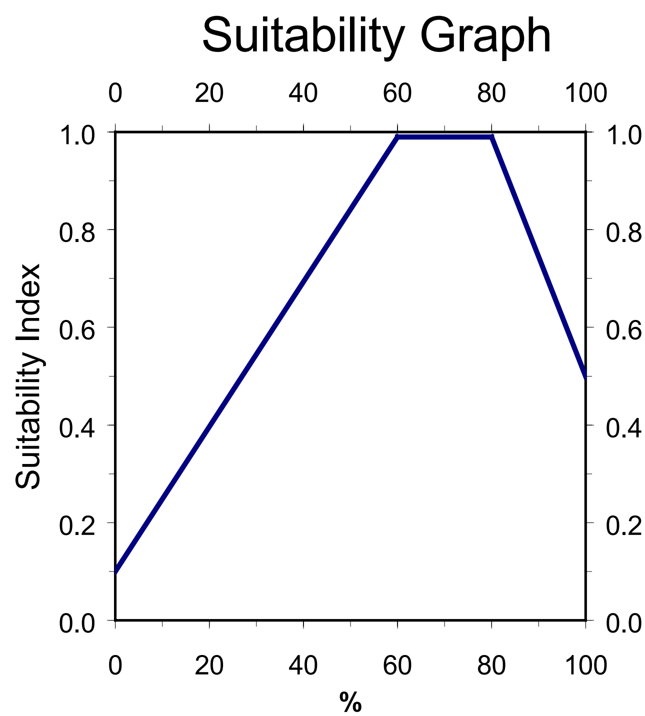


Line Formulas

If % < 30, then SI = 0.1
If 30 ≤ % < 50, then SI = (0.045*%) – 1.25
If 50 ≤ % ≤ 70, then SI = 1.0
If % > 70, then SI = (-0.03*%) + 3.1

Barrier Island

Variable V_{3b} Percent of intertidal habitat that is vegetated (bayside only).

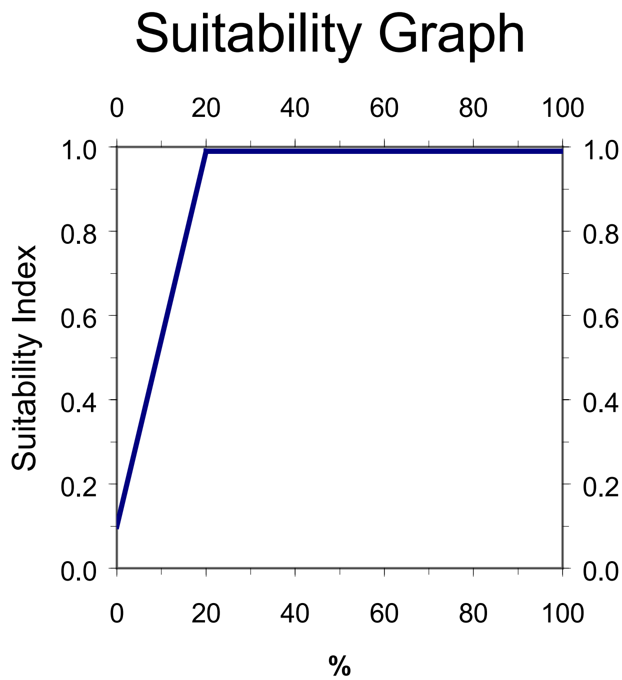


Line Formulas

If % < 60, then SI = (0.015*%) + 0.1
If 60 ≤ % ≤ 80, then SI = 1.0
If % > 80, then SI = (-0.025*%) + 3

Barrier Island

Variable V_4 Percent subtidal habitat expressed as a percent relative to subaerial habitat.

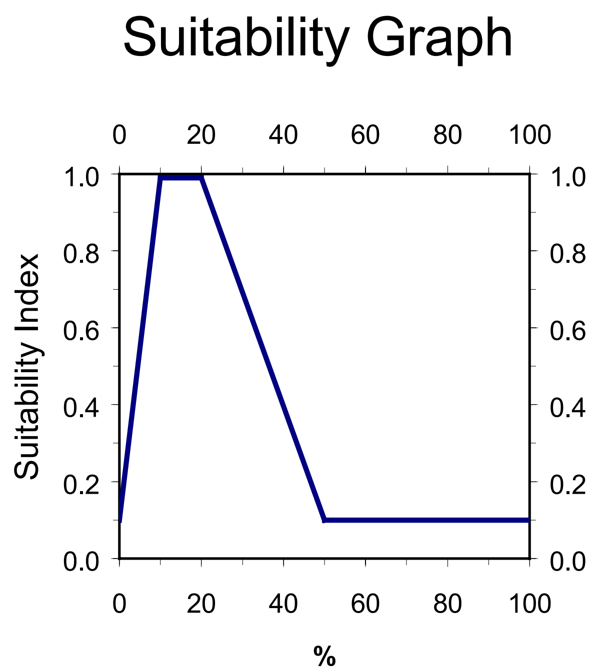


Line Formulas

If % < 20, then SI = (0.045*%) + 0.1
If % $\geq$ 20, then SI = 1.0

Barrier Island

Variable V_5 Percent vegetative cover by woody species.



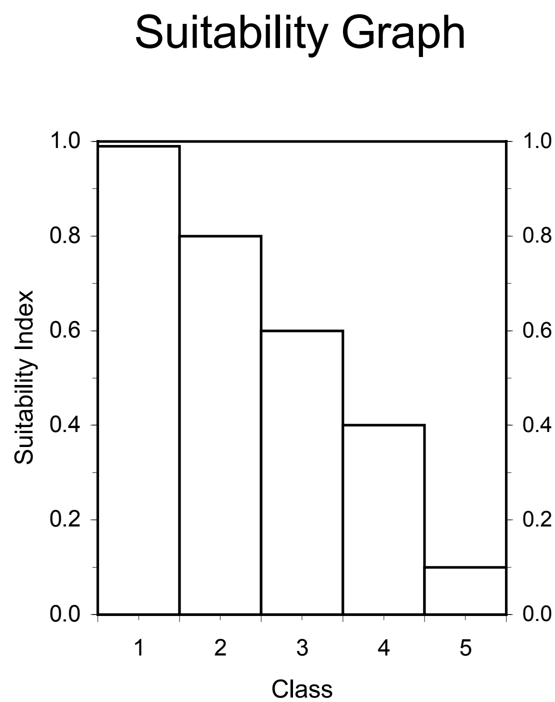
Line Formulas

If $\% < 10$, then $SI = (0.09*\%) + 0.1$
If $10 \leq \% \leq 20$, then $SI = 1.0$
If $20 < \% \leq 50$, then $SI = (-0.03*\%) + 1.6$
If $\% > 50$, then $SI = 0.1$

The suitability index is divided by two for islands with only one woody species.

Barrier Island

Variable V_6 Edge and Interspersion.



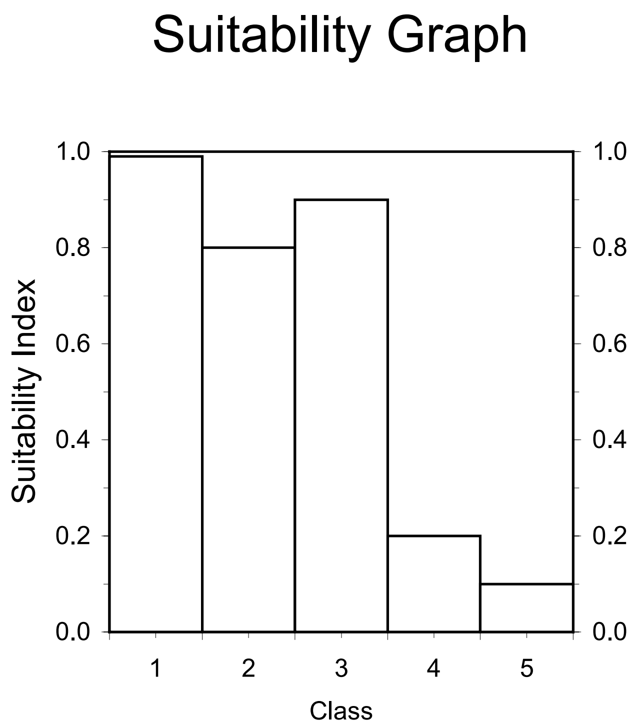
Instructions for Calculating SI for Variable V_6:

1. Refer to Appendix A for examples of the different interspersion classes.

2. Estimate the percent of project area in each class. If the <u>entire</u> project area is open water, assign interspersion Class 5.

Barrier Island

Variable V_7 Beach/surf zone features.

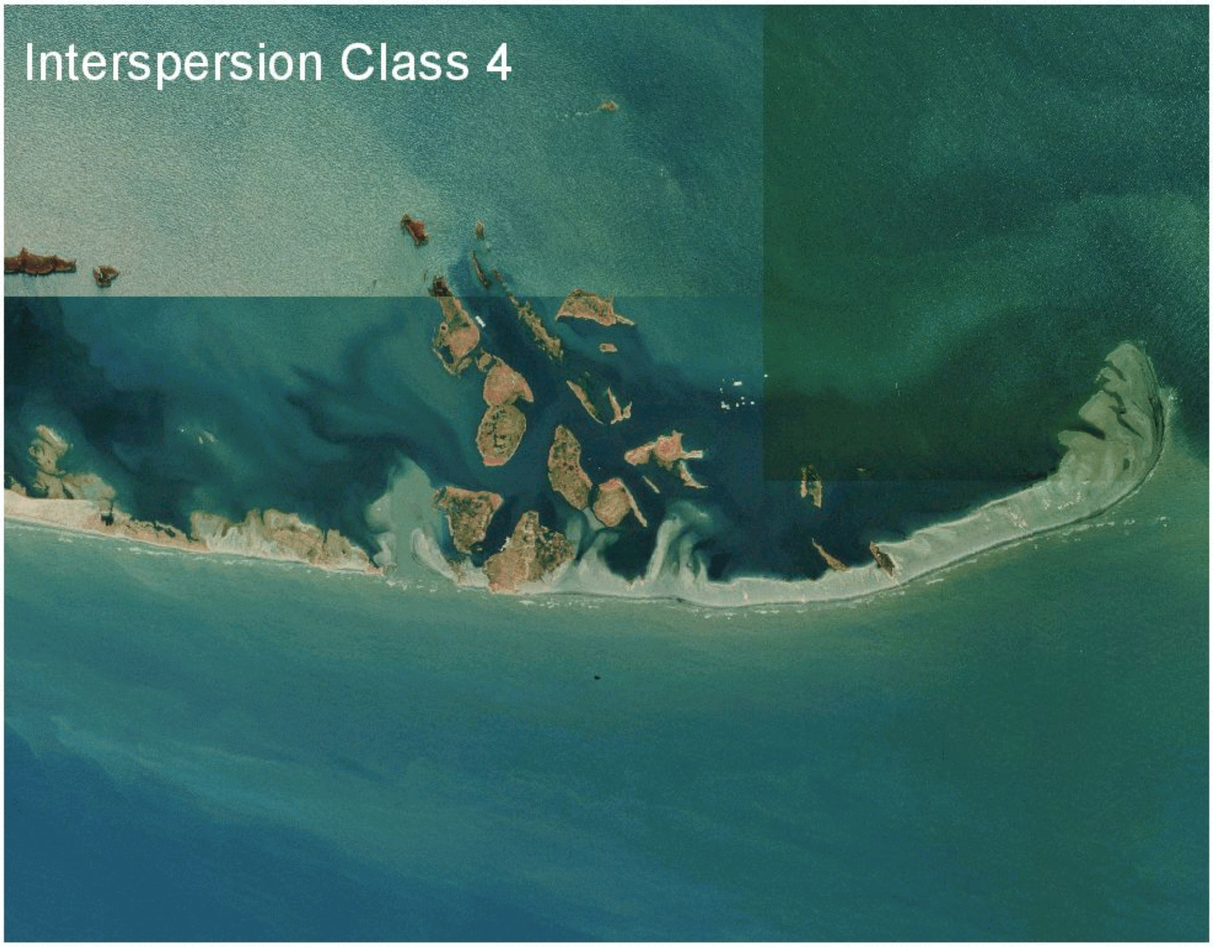


Class 1 = Natural Beach/Unconfined Disposal
Class 2 = Confined Disposal
Class 3 = Breakwaters
Class 4 = Rock on Beach
Class 5 = Seawall/No emergent habitat

Attachment C – Marsh Edge and Interspersion Classes

Attachment C - Marsh Edge and Interspersion Classes

Attachment C - Marsh Edge and Interspersion Classes



III. Coastal Chenier/Ridge Community Model

INTRODUCTION

The habitat assessment model presented in this document is a modification of the U. S. Fish and Wildlife Service's Habitat Evaluation Procedures (HEP). It utilizes a set of variables considered important in determining the suitability of non-grazed barrier headland ridges, cheniers, and spoil areas in Louisiana that are, or are proposed to be, vegetated in primarily non-obligate wetland plant species, to provide the habitat necessary to support transient migratory landbirds in the spring and fall. The area of the state to which this model is applicable to includes the portions of Cameron, Vermilion, Iberia, St. Mary, Terrebonne, Lafourche, Jefferson, Plaquemines and St. Bernard Parishes south of the Intracoastal Waterway. The model attempts to assess the suitability of habitat for providing foraging and resting requirements to a diverse assemblage of migratory landbirds. This model has not been validated with field data.

VARIABLE SELECTION

Several existing Habitat Suitability Index (HSI) models were considered for use in determining migratory landbird stopover habitat quality, including the models for roseate spoonbill, great egret, brown thrasher, swamp rabbit, veery and yellow warbler. However, the emphasis for all these models was breeding habitat requirements. None addressed the set of variables that were determined to be most pertinent to assessment of stopover habitat quality, where a variety of species with differing foraging strategies occupy the habitat for a relatively brief time period. Selection of the variables used for this model was based upon a review of available literature, interviews with specialists who have studied various aspects of migratory landbird ecology in coastal stopover habitats, and the field knowledge of those involved with development of this model.

More than 80 species of neotropical migratory landbirds from at least eleven Families pass through Louisiana during the spring and fall (Sauer et al. 2000). At the peak of spring migration, it is estimated that as many as 50,000 birds per day per mile of coastline enter the state (Conner and Day 1987). During favorable weather conditions, the majority of these birds will bypass small wooded areas embedded in coastal marsh and land in extensive forested areas north of the marshes, but during thunderstorms or other unfavorable conditions, a large percentage of these individuals may stop in these small coastal wood patches (Gauthreaux 1971). Identifying the optimal stopover habitat characteristics for such a varied group of birds is challenging. Martin (1980) stated that migrants often select habitats en route that superficially resemble their breeding habitat. Moore et al. (1995) concluded that spring migrants on the northern Gulf of Mexico coast preferentially select structurally diverse stopover sites, consisting of forested areas with mixed shrub layers, and that maintenance of plant species and structural diversity should be a goal at migratory landbird stopover sites. Similarly, Martin (1980) found that habitat structure in shelterbelt "island" habitat in the Great Plains influences migrant diversity and abundance. Robinson and Holmes (1984) determined that the diversity of bird species in terrestrial habitats is correlated with factors associated with vegetation structure or composition, including diversity of foliage height, and stated that, in general, the number of bird species increases with the addition of vertical vegetation layers. Based upon the findings above and upon prior field investigations, we proposed three habitat assessment variables: 1) percent tree canopy cover, 2) percent shrub/midstory canopy cover, and 3) the number of native woody species planted/present on the site. We also identified some tentative variables, including percent herbaceous ground cover, minimum patch size, average tree height, and proximity of the site to other forested patches.

We asked three specialists with expertise in the arena of migratory landbird habitat requirements to comment on our proposed habitat variables: William C. Hunter, U.S. Fish and Wildlife Service, Atlanta, GA; Mark Woodrey, U.S. Fish and Wildlife Service, Jackson, MS; and Wylie Barrow, U.S.G.S., National Wetlands Research Center, Lafayette, LA. Their comments have been incorporated into the model and referenced as personal communications.

All specialists queried concurred that structural and floristic diversity were key factors to consider. Additionally, they all stressed the importance of fresh water sources for spring trans-Gulf migrants. However, we did not develop a variable to capture this factor, as the model was being designed for created habitat in an area where fresh water input would probably be limited to precipitation. A variable to measure fresh water proximity should probably be created for assessing extant stopover sites. We decided not to use a variable for percent herbaceous ground cover because for the majority of birds that would be likely to use forested coastal areas, the amount of herbaceous ground cover would not be as critical a habitat need as would tree and shrub cover (Moore et al. 1995). Neotropical migratory landbirds dependent upon grasslands would not typically use forested cheniers, spoil banks, etc., instead gravitating towards marshes, pastures, and agricultural fields. No minimum patch size for sites was established, because while larger patches are accepted to be more valuable to birds than small patches, a small patch surrounded by non-forested habitat could be very important at times to migrants (Barrow, pers. comm.). The same basic rationale was used in determining that a variable to rank sites on the basis of their proximity to other forested patches was not practical. Sites adjacent to other forested sites are assumed to facilitate migration of forest birds by reducing the distance needed to travel through open and potentially inhospitable terrain, but an isolated woodland could be important during periods of inclement weather (Barrow, pers. comm.). Canopy height was ruled out as a variable because no data was discovered that addressed minimum canopy heights at stopover sites. The developers of this model assumed that percent canopy cover was a more pertinent variable to consider.

SUITABILITY INDEX GRAPH DEVELOPMENT

<u>Variable V1 – Percent tree canopy cover</u>. Neotropical migratory landbirds preferentially use stopover sites exhibiting high structural and floristic diversity (Moore et al.1995). To achieve the desired vertical plant diversity (i.e., a mix of trees, tree saplings, shrubs, vines, and herbaceous plants), a moderately closed tree canopy would be preferred to over a totally closed canopy (Hunter, pers. comm.; Barrow, pers. comm.; Woodrey, pers. comm.). Tree canopy coverage ranging from 65 - 85% is assumed to provide optimal conditions to allow for establishment of midstory trees, shrubs, vines, and herbaceous plants, provided that the site is not grazed. Tree species that may occur at coastal stopover sites include sugarberry *(Celtis laevigata)*, toothache tree *(Zanthoxylum clava-herculis)*, live oak *(Quercus virginiana)*, water oak *(Q. nigra)*, honey locust *(Gleditsia triacanthos)*, red mulberry *(Morus*

rubra), and green haw *(Crataegus viridis)* (Louisiana Natural Heritage Program 1988, Materne 2000, Gosselink et al. 1979,Thomas and Allen 1996, Thomas and Allen 1998).

Variable V2 – Percent shrub/midstory cover**.** Shrub-scrub habitats provide important foraging and resting areas for migrant landbirds (Moore et al. 1995). Shrub-scrub habitats are also presumed to be important to migratory passerine birds as refuges from raptor predators (Moore et al. 1990). For the purposes of this model, shrub/midstory means multi-stemmed shrubs, single-stemmed midstory trees, single-stemmed saplings of overstory tree species, and woody vines. Shrub/midstory canopy coverage ranging from 35 - 65% is assumed to represent optimal conditions at a forested site. Species of shrubs, small trees, and woody vines that may be found at stopover sites include Small's acacia *(Acacia minuta)*, wax myrtle *(Morella cerifera)*, dwarf palmetto *(Sabal minor)*, yaupon holly *(Ilex vomitoria)*, saltbush *(Baccharis halimifolia)*, greenbriars *(Smilax spp.)*, grapes *(Vitis spp.)*, prickly pear cactus *(Opuntia spp.)*, Virginia creeper *(Parthenocissus quinquefolia)*, pepper vine *(Ampelopsis arborea)*, blackberries *(Rubus spp.)*, rattlebox *(Sesbania drummondii)*, marshelder *(Iva frutescens)*, poison ivy *(Toxicodendron radicans)*, Carolina wolf-berry *(Lycium carolinianum)*, marine vine *(Cissus incisa)* and elderberry *(Sambucus canadensis)* (Louisiana Natural Heritage Program 1988, Materne 2000, Gosselink et al. 1979, Thomas and Allen 1996, Thomas and Allen 1998).

Variable V3 – Native woody species diversity**.** A wide variety of fruits, flowers, nectars, and animals, primarily invertebrates, are consumed by migrant landbirds (Moore et al. 1995, Fontenot 1999, Barrow, pers. comm.). Robinson and Holmes (1984) concluded that vegetation provides birds with foraging opportunities and constraints depending upon the structure of individual plants, aggregations of plants, and the arthropods that these plants host. The resulting foraging conditions define the diversity of bird species in the habitat. While some exotic plant species provide foraging opportunities to migrant landbirds, others are of limited value to spring and fall migrant birds (Barrow and Renne, 2001, Barrow, pers. comm.). It is assumed that a variety of native shrubs, midstory trees, woody vines and overstory trees will provide sufficiently diverse foraging and resting habitat to enable spring and fall transient birds to continue their migration. Woody plant species composition and diversity in stopover habitat is influenced by elevation, soil type, and salinity levels (Materne 2000, Louisiana Natural Heritage Program 1988), and the capacity of sites to support certain species will depend upon these and other factors. Based upon a review of available written information and upon the field knowledge of those involved in development of this model, and upon the range of conditions likely to be encountered in stopover habitat in the area the model addresses, presence of ∃10 species of native trees, shrubs, and woody vines is assumed to represent optimal conditions. It is also assumed that the parameters defining optimal conditions for variables V1 and V2 will moderate the potential for variable V3 to exert a false reading of habitat value for migrant landbirds, should the diversity of plant species be confined only to trees, or to shrubs, or to woody vines.

HABITAT SUITABILITY INDEX FORMULA

The final step in model development was to construct a mathematical formula that combines all Suitability Indices into a single Habitat Suitability Index (HSI) value. Because the Suitability Indices range from 0.1 to 1.0, the HSI also ranges from 0.1 to 1.0, and is a numerical representation of the overall or "composite" habitat quality of the area being evaluated. Within the HSI formula, any Suitability Index can be weighted by various means to increase the power or "importance" of that variable relative to the other variables in determining the HSI. For this model, it was assumed that the variables are of equal weight in determining the habitat quality of a coastal chenier/ridge.

To combine the variables into an HSI formula, a geometric mean was chosen, as opposed to an arithmetic mean, to convey the weak compensatory relationship between the three variables. An arithmetic mean is often used when it is assumed that the model variables have a strong compensatory relationship (i.e., a high value for one variable can compensate for the low value of another variable). The geometric mean is used to discourage a variable with a marginal or low suitability from being offset by the high suitability of the other variables (U.S. Fish and Wildlife Service1981). It was assumed that the three variables in this model do not have a strong compensatory relationship.

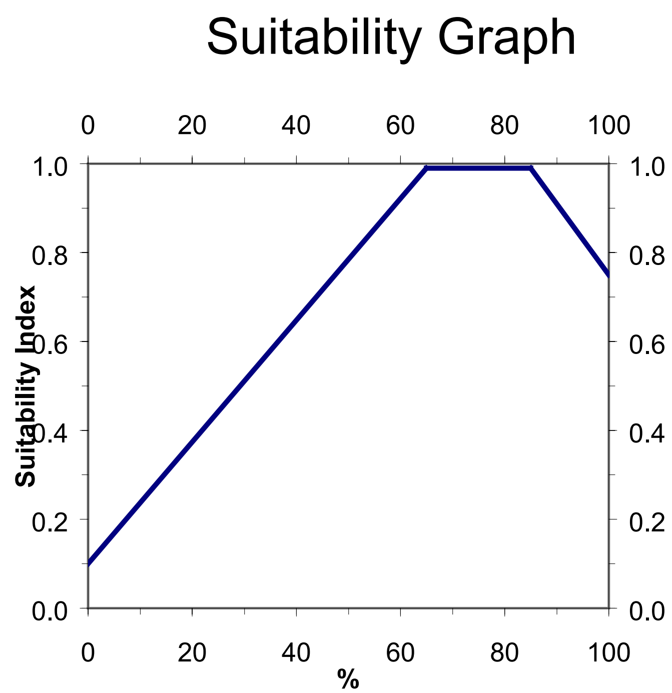
HSI Calculation: $HSI = (SIV_1 \times SIV_2 \times SIV_3)^{1/3}$

BENEFIT ASSESSMENT

The net benefits of a proposed project are determined by predicting future habitat conditions under two scenarios: future without-project and future with-project. Specifically, predictions are made as to how the model variables will change through time under the two scenarios. Through that process, HSIs are established for baseline (pre-project) conditions and for future without- and future with-project scenarios for selected "target years" throughout the expected life of the project. Those HSIs are then multiplied by the project area acreage at each target year to arrive at Habitat Units (HUs). Habitat Units represent a numerical combination of quality (HSI) and quantity (acres) existing at any given point in time. The HUs resulting from the future without- and future with-project scenarios are annualized, averaged over the project life, to determine Average Annual Habitat Units (AAHUs). The "benefit" of a project is quantified by comparing AAHUs between the future without- and future with-project scenarios. The difference in AAHUs between the two scenarios represents the net benefit attributable to the project in terms of habitat quantity and quality.

Coastal Chenier/Ridge

Variable V_1 Percent Tree Canopy Cover



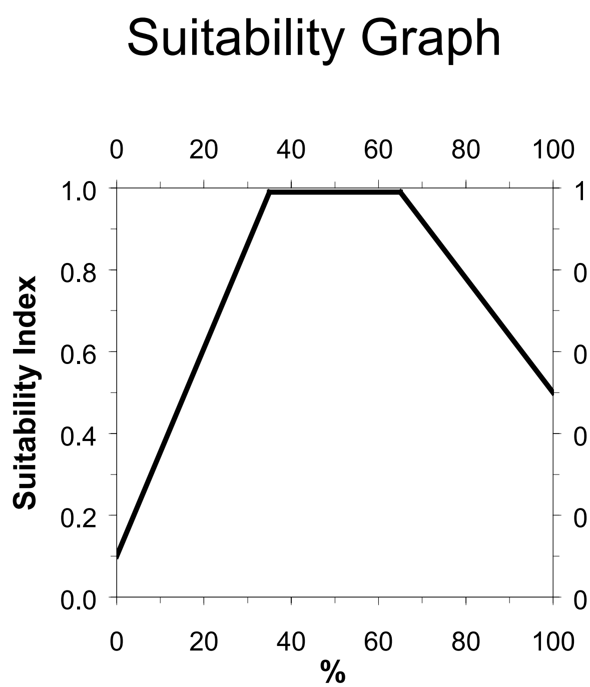
Line Formulas

If % < 65, then SI = (0.014*%) + 0.1
If 65 ≤ % ≤ 85, then SI = 1.0
If % > 85, then SI = (-0.017*%) + 2.445

Suitability index graph relationships for Variable V1 were determined by: 1) reviewing available literature, 2) interviewing specialists who have studied various aspects of migratory landbird ecology in coastal stopover habitats, and 3) field knowledge of those involved with development of this model.

Coastal Chenier/Ridge

Variable V_2 Percent Shrub/Midstory Cover



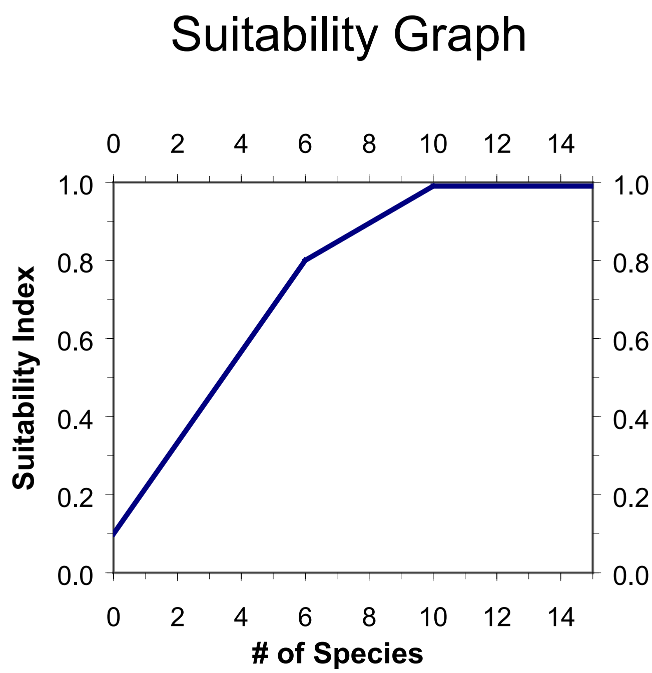
Line Formulas

If $\% < 35$, then $SI = (0.026*\%) + 0.1$
If $35 \leq \% \leq 65$, then $SI = 1.0$
If $\% > 65$, then $SI = (-0.014*\%) + 1.9$

Suitability index graph relationships for Variable V2 were determined by: 1) reviewing available literature, 2) interviewing specialists who have studied various aspects of migratory landbird ecology in coastal stopover habitats, and 3) field knowledge of those involved with development of this model.

Coastal Chenier/Ridge

Variable V_3 Native Woody Species Diversity



Line Formulas

If $\% < 6$, then $SI = (0.117*\%) + 0.1$
If $6 \leq \% < 10$, then $SI = (0.05*\%) + 0.5$
If $\% \geq 10$, then $SI = 1.0$

Suitability index graph relationships for Variable V3 were determined by: 1) reviewing available literature, 2) interviewing specialists who have studied various aspects of migratory landbird ecology in coastal stopover habitats, and 3) field knowledge of those involved with development of this model.

IV. Emergent Marsh Community Models

INTRODUCTION

The emergent marsh models were initially developed after passage of the CWPPRA during 1990 and were first used for evaluating candidate projects in 1991. The following sections describe the process and assumptions used in the initial development of those models. Since their initial development, these models have undergone several revisions including the omission of certain variables, modifications to the Suitability Index graphs, and modifications to the Habitat Suitability Index formulas.

These models were developed to determine the suitability of emergent marsh and open water habitats in the Louisiana coastal zone. These models were designed to function at a community level and therefore attempt to define an optimal combination of habitat conditions for all fish and wildlife species utilizing coastal marsh ecosystems.

VARIABLE SELECTION

Variables for the emergent marsh models were selected through a two-part procedure. The first involved a listing of environmental variables thought to be important in characterizing fish and wildlife habitat in coastal marsh ecosystems. The second part of the selection procedure involved reviewing variables used in species-specific HSI models published by the U.S. Fish and Wildlife Service. Review was limited to HSI models for those fish and wildlife species known to inhabit Louisiana coastal wetlands, and included models for 10 estuarine fish and shellfish, 4 freshwater fish, 12 birds, 3 reptiles and amphibians, and 3 mammals (Table 1). The number of models included from each species group was dictated by model availability.

Selected HSI models were then grouped according to the marsh type(s) used by each species. Because most species for which models were considered are not restricted to one marsh type, most models were included in more than one marsh type group. Within each wetland type group, variables from all models were then grouped according to similarity (e.g., water quality, vegetation, etc.). Each variable was evaluated based on 1) whether it met the variable selection criteria; 2) whether another, more easily measured/predicted variable in the same or a different similarity group functioned as a surrogate; and 3) whether it was deemed suitable for the WVA application (e.g., some freshwater fish model variables dealt with riverine or lacustrine environments). Variables that did not satisfy those conditions were eliminated from further consideration. The remaining variables, still in their similarity groups, were then further eliminated or refined by combining similar variables and/or culling those that were functionally duplicated by variables from other models (i.e., some variables were used frequently in different models in only slightly different format).

Table B-1. HSI Models Consulted for Variables for Possible Use in the Emergent Marsh Models

Estuarine Fish and Shellfish	Birds	Mammals
pink shrimp	white-fronted goose	mink
white shrimp	clapper rail	muskrat
brown shrimp	great egret	swamp rabbit
spotted seatrout	northern pintail	
Gulf flounder	mottled duck	Freshwater Fish
southern flounder	American coot	channel catfish
Gulf menhaden	marsh wren	largemouth bass
juvenile spot	snow goose	red ear sunfish
juvenile Atlantic croaker	great blue heron	bluegill
red drum	laughing gull	
	red-winged blackbird	
Reptiles and Amphibians	roseate spoonbill	
bullfrog		
slider turtle		
American alligator		

Variables selected from the HSI models were then compared to those identified in the first part of the selection procedure to arrive at a final list of variables to describe wetland habitat quality. That list includes six variables for each marsh type; 1) percent of the wetland covered by emergent vegetation, 2) percent of the open water covered by aquatic vegetation, 3) marsh edge and interspersion, 4) percent of the open water area $\leq$ 1.5 feet deep, 5) salinity, 6) aquatic organism access.

SUITABILITY INDEX GRAPH DEVELOPMENT

A variety of resources was utilized to construct each SI graph, including the HSI models from which the final list of variables was partially derived, consultation with other professionals and researchers outside the EnvWG, published and unpublished data and studies, and personal knowledge of EnvWG members. An important "non-biological" constraint on SI graph development was the need to insure that graph relationships were not counter to the purpose of the CWPPRA, that is, the long term creation, restoration, protection, or enhancement of coastal vegetated wetlands. That constraint was most operative in defining SI graphs for Variable V_1 (percent emergent marsh). The process of SI graph development was one of constant evolution, feedback, and refinement; the form of each SI graph was decided upon through consensus among EnvWG members.

The Suitability Index graphs were developed according to the following assumptions.

Variable V_1 - Percent of wetland area covered by emergent vegetation**.** Persistent emergent vegetation plays an important role in coastal wetlands by providing foraging, resting, and breeding habitat for a variety of fish and wildlife species; and by providing a source of detritus and energy for lower trophic organisms that form the basis of the food chain. An area with no emergent vegetation (i.e., shallow open water) is assumed to have minimal habitat suitability in terms of this variable, and is assigned an SI of 0.1.

Optimal vegetative coverage is assumed to occur at 100 percent (SI=1.0). That assumption is dictated primarily by the constraint of not having graph relationships conflict with the CWPPRA's purpose of long term creation, restoration, protection, or enhancement of vegetated wetlands. The EnvWG had originally developed a strictly biologically-based graph defining optimal habitat conditions at marsh cover values between 60 and 80 percent, and sub-optimal habitat conditions outside that range. However, application of that graph, in combination with the time analysis used in the evaluation process (i.e., 20-year project life), often reduced project benefits or generated a net loss of habitat quality through time with the project. Those situations arose primarily when: existing (baseline) emergent vegetation cover exceeded the optimum (> 80 percent); the project was predicted to maintain baseline cover values; and without the project the marsh was predicted to degrade, with a concurrent decline in percent emergent vegetation into the optimal range (60-80 percent). The time factor aggravated the situation when the without-project degradation was not rapid enough to reduce marsh cover values significantly below the optimal range, or below the baseline SI, within the 20-year evaluation period. In those cases, the analysis would show net negative benefits for the project, and positive benefits for letting the marsh degrade rather than maintaining the existing marsh. Coupling that situation with the presumption that marsh conditions are not static, and that Louisiana will continue to lose coastal emergent marsh; and taking into account the purpose of the CWPPRA, the EnvWG decided that, all other factors being equal, the models should favor projects that maximize emergent marsh creation, maintenance, and protection. Therefore, the EnvWG agreed to deviate from a strictly biologically-based habitat suitability index graph for V_1 and established optimal habitat conditions at 100 percent marsh cover.

Variable V_2 - Percent of open water area covered by aquatic vegetation. Fresh and intermediate marshes often support diverse communities of floating-leaved and submerged aquatic plants that provide important food and cover to a wide variety of fish and wildlife species. A fresh/intermediate open water area with no aquatics is assumed to have low suitability (SI=0.1). Optimal conditions (SI=1.0) are assumed to occur when 100 percent of the open water is dominated by aquatic vegetation. Habitat suitability may be assumed to decrease with aquatic plant coverage approaching 100 percent due to the potential for mats of aquatic vegetation to hinder fish and wildlife utilization; to adversely affect water quality by reducing photosynthesis by phytoplankton and other plant forms due to shading; and contribute to oxygen depletion spurred by warm-season decay of large quantities of aquatic vegetation. The EnvWG recognized, however, that those effects were highly dependent on the dominant aquatic plant species, their growth forms, and their arrangement in the water column; thus, it is possible to have 100 percent cover of a variety of floating and submerged aquatic plants without the above-mentioned problems due to differences in plant growth form and stratification of plants through the water column. Because predictions of which species may dominate at any time in the future would be tenuous, at best, the EnvWG decided to simplify the graph and define optimal conditions at 100 percent aquatic cover.

Brackish marshes also have the potential to support aquatic plants that serve as important sources of food and cover for several species of fish and wildlife. Although brackish marshes generally do not support the amounts and kinds of aquatic plants that occur in fresh/intermediate marshes, certain species, such as widgeon-grass, and coontail and milfoil in lower salinity brackish marshes, can occur abundantly under certain conditions. Those species, particularly widgeon-grass, provide important food and cover for many species of fish and wildlife. Therefore, the V_2 Suitability Index graph in the brackish marsh model is identical to that in the fresh/intermediate model.

Some low-salinity saline marshes may contain beds of widgeon-grass and open water areas behind some barrier islands may contain dense stands of seagrasses (e.g., *Halodule wrightii* and *Thalassia testudinum*). However, saline marshes typically do not contain an abundance of aquatic vegetation as often found in fresh/intermediate and brackish marshes. Open water areas in saline marshes typically contain sparse aquatic vegetation and are primarily important as nursery areas for marine organisms. Therefore, in order to reflect the importance of those open water areas to marine organisms, a saline marsh lacking aquatic vegetation is assigned a SI=0.3. It is assumed that optimal coverage of aquatic plants occurs at 100 percent.

Variable V_3 - Marsh edge and interspersion. This variable takes into account the relative juxtaposition of marsh and open water for a given marsh:open water ratio, and is measured by comparing the project area to sample illustrations (Appendix A) depicting different degrees of interspersion. Interspersion is assumed to be especially important when considering the value of an area as foraging and nursery habitat for freshwater and estuarine fish and shellfish; the marsh/open water interface represents an ecotone where prey species often concentrate, and where post-larval and juvenile organisms can find cover. Isolated marsh ponds are often more productive in terms of aquatic vegetation than are larger ponds due to decreased turbidity, and, thus, may provide more suitable waterfowl habitat. However, interspersion can be indicative of marsh degradation, a factor taken into consideration in assigning suitability indices to the various interspersion classes.

A relatively high degree of interspersion in the form of stream courses and tidal channels (Interspersion Class 1) is assumed to be optimal (SI=1.0); streams and channels offer interspersion, yet are not indicative of active marsh deterioration. Areas exhibiting a high degree of marsh cover are also ranked as optimal, even though interspersion may be low, to avoid conflicts with the premises underlying the SI graph for variable V_1. Without such an allowance, areas of relatively healthy, solid marsh, or projects designed to create marsh, would be penalized with respect to interspersion. Numerous small marsh ponds (Interspersion Class 2) offer a high degree of interspersion, but are also usually indicative of the beginnings of marsh break-up and degradation, and are therefore assigned a more moderate SI of 0.6. Large open water areas (Interspersion Classes 3 and 4) offer lower interspersion values and usually indicate advanced stages of marsh loss, and are thus assigned SI's of 0.4 and 0.2, respectively. The lowest expression of interspersion, Class 5 (i.e., no emergent marsh at all within the project area), is assumed to be least desirable and is assigned an SI=0.1.

Variable V_4 - Percent of open water area # 1.5 feet deep in relation to marsh surface. Shallow water areas are assumed to be more biologically productive than deeper water due to a general reduction in sunlight, oxygen, and temperature as water depth increases. Also, shallower water provides greater bottom accessibility for certain species of waterfowl, better foraging habitat for wading birds, and more favorable conditions for aquatic plant growth. Optimal open water conditions in a fresh/intermediate marsh are assumed to occur when 80 to 90 percent of the open water area is less than or equal to 1.5 feet deep. The value of deeper areas in providing drought refugia for fish, alligators and other marsh life is recognized by assigning an SI=0.6 (i.e., sub-optimal) if all of the open water is less than or equal to 1.5 feet deep.

Shallow water areas in brackish marsh habitat are also important. However, brackish marsh generally exhibits deeper open water areas than fresh marsh due to tidal scouring. Therefore, the SI graph is constructed so that lower percentages of shallow water receive higher SI values relative to fresh/intermediate marsh. Optimal open water conditions in a brackish marsh are assumed to occur when 70 to 80 percent of the open water area is less than or equal to 1.5 feet deep.

The SI graph for the saline marsh model is similar to that for brackish marsh, where optimal conditions are assumed to occur when 70 to 80 percent of the open water area is less than or equal to 1.5 feet deep. However, at 100 percent shallow water, the saline graph yields an SI= 0.5 rather than 0.6 as for the brackish model. That change reflects the increased abundance of tidal channels and generally deeper water conditions prevailing in a saline marsh due to increased tidal influences, and the importance of those tidal channels to estuarine organisms.

Variable V_5 - Salinity. It is assumed that periods of high salinity are most detrimental in a fresh/intermediate marsh when they occur during the growing season (defined as March through November, based on dates of first and last frost contained in Natural Resource Conservation Service soil surveys for coastal Louisiana). Therefore, mean high salinity is used as the salinity parameter for the fresh/intermediate marsh model. Mean high salinity is defined as the average of the upper 33 percent of salinity readings taken during a specified period of record. Optimal conditions in fresh marsh are assumed to occur when mean high salinity during the growing season is less than 2 parts per thousand (ppt). Optimal conditions in intermediate marsh are assumed to occur when mean high salinity during the growing season is less than 4 ppt.

For the brackish and saline marsh models, average annual salinity is used as the salinity parameter. The SI graph for brackish marsh is constructed to represent optimal conditions when salinities are between 0 ppt and 10 ppt. The EnvWG acknowledges that average annual salinities below 5 ppt will effectively define a marsh as fresh or intermediate, not brackish. However, the SI graph makes allowances for lower salinities to account for occasions when there is a trend of decreasing salinities through time toward a more intermediate condition. Implicit in keeping the graph at optimum for salinities less than 5 ppt is the assumption that lower salinities are not detrimental to a brackish marsh. However, average annual salinities greater than 10 ppt are assumed to be progressively more harmful to brackish marsh vegetation. Average annual salinities greater than 16 ppt are assumed to be representative of those found in a saline marsh, and thus are not considered in the brackish marsh model.

The SI graph for the saline marsh model is constructed to represent optimal salinity conditions at between 0 ppt and 21 ppt. The EnvWG acknowledges that average annual salinities below 10 ppt will effectively define a marsh as brackish, not saline. However, the suitability index graph makes allowances for lower salinities to account for occasions when there is a trend of decreasing salinities through time toward a more brackish condition. Implicit in keeping the graph at optimum for salinities less than 10 ppt is the assumption that lower salinities are not detrimental to a saline marsh. Average annual salinities greater than 21 ppt are assumed to be slightly stressful to saline marsh vegetation.

Variable V_6 - Aquatic organism access. Access by aquatic organisms, particularly estuarine-dependent fishes and shellfishes, is considered to be a critical component in assessing the quality of a given marsh system. Additionally, a marsh with a relatively high degree of access by default also exhibits a relatively high degree of hydrologic connectivity with adjacent systems, and therefore may be considered to contribute more to nutrient exchange than would a marsh exhibiting a lesser degree of access. The SI for V_6 is determined by calculating an "access value" based on the interaction between the percentage of the project area wetlands considered accessible by aquatic organisms during normal tidal fluctuations, and the type of man-made structures (if any) across identified points of ingress/egress (bayous, canals, etc.). Standardized procedures for calculating the

Access Value have been established (Appendix B). It should be noted that access ratings for man-made structures were determined by consensus among EnvWG members and that scientific research has not been conducted to determine the actual access value for each of those structures. Optimal conditions are assumed to exist when all of the study area is accessible and the access points are entirely open and unobstructed.

A fresh marsh with no access is assigned an SI=0.3, reflecting the assumption that, while fresh marshes are important to some species of estuarine-dependent fishes and shellfish, such a marsh lacking access continues to provide benefits to a wide variety of other wildlife and fish species, and is not without habitat value. An intermediate marsh with no access is assigned an SI=0.2, reflecting that intermediate marshes are somewhat more important to estuarine-dependent organisms than fresh marshes. The general rationale and procedure behind the V_6 Suitability Index graph for the brackish marsh model is identical to that established for the fresh/intermediate model. However, brackish marshes are assumed to be more important as habitat for estuarine-dependent fish and shellfish than fresh/intermediate marshes. Therefore, a brackish marsh providing no access is assigned an SI of 0.1. The Suitability Index graph for aquatic organism access in the saline marsh model is the same as that in the brackish marsh model.

HABITAT SUITABILITY INDEX FORMULAS

In developing the HSI formulas, the EnvWG recognized that the primary focus of the CWPPRA is on vegetated wetlands, and that some marsh protection strategies could have adverse impacts to aquatic organism access. Therefore, the EnvWG made an *a priori* decision to emphasize variables V_1, V_2, and V_6 by grouping them together, when possible, and weighting them greater than the remaining variables. Weighting was facilitated by treating the grouped variables as a geometric mean. Variables V_3, V_4, and V_5 were grouped to isolate their influence relative to V_1, V_2, and V_6.

For all marsh models, V_1 receives the strongest weighting. The relative weights of V_1, V_2, and V_6 differ by marsh model to reflect differing levels of importance for those variables between the marsh types. For example, the amount of aquatic vegetation was deemed more important in a fresh/intermediate marsh than in a saline marsh, due to the relative contributions of aquatic vegetation between the two marsh types in terms of providing food and cover. Therefore, V_2 receives more weight in the fresh/intermediate HSI formula than in the saline HSI formula. Similarly, the degree of aquatic organism access was considered more important in a saline marsh than a fresh/intermediate marsh, and V_6 receives more weight in the saline HSI formula than in the fresh/intermediate formula. As with the Suitability Index graphs, the Habitat Suitability Index formulas were developed by consensus among the EnvWG members.

For several years, 1991 through 1996, the EnvWG utilized one HSI formula specific to each marsh type. However, it was noted that variables V_2 and V_4, which characterize open water areas only, often resulted in an “artificially inflated” HSI when those variable values were optimal (i.e., SI = 1.0) and open water comprised a very small portion of the project area. For example, Project Area A contains 90 percent emergent marsh and 10 percent open water. Project Area B contains 10 percent emergent marsh and 90 percent open water. Assume the open water in each project area is completely covered by submerged aquatic vegetation and is entirely less than 1.5 feet in depth. Under those conditions, the Suitability Index values for V_2 and V_4 would equal 1.0 for both project areas even though open water only accounts for 10 percent of Project Area A. The EnvWG has commonly referred to this as a “scaling” problem; the Suitability Index values for V_2 and V_4 are not "scaled" in respect to the proportion of the project area they describe. This allows those variables to contribute disproportionately to the HSI in instances when open water constitutes a small portion of the project area.

The EnvWG acknowledged that the scaling problem presented a flaw in the WVA methodology resulting in unrealistic HSI values for certain project areas and eventually resulting in inflated wetland benefits for those projects. During 1996 and 1997, Dr. Gary Shaffer assisted the EnvWG in developing potential solutions to the scaling problem. After several unsuccessful attempts to develop a single HSI formula for each marsh type which scaled the Suitability Index values for V_2 and V_4 based on the ratio of emergent marsh to open water, the EnvWG decided to develop a "split" model for each marsh type. The split model utilizes two HSI formulas for each marsh type; one HSI formula characterizes the emergent habitat within the project area and another HSI formula characterizes the open water habitat. The HSI formula for the emergent habitat contains only those variables important in assessing habitat quality for emergent marsh (i.e., V_1, V_3, V_5, and V_6). Likewise, the open water HSI formula contains only those variables important in characterizing the open water habitat (i.e., V_2, V_3, V_4, V_5, and V_6). Individual HSI formulas were developed for emergent marsh and open water habitats for each marsh type.

As with the development of a single HSI model for each marsh type, the split models follow the same conventions for weighting and grouping of variables as previously discussed.

BENEFIT ASSESSMENT

As previously discussed, the marsh models are split into emergent marsh and open water components and an HSI is determined for both. Subsequently, net AAHUs are also determined for the emergent marsh and open water habitats within the project area. Net AAHUs for the emergent marsh and open water habitat components must be combined to determine total net benefits for the project.

The primary focus of the CWPPRA is on vegetated wetlands. Therefore, in order to place greater emphasis on wetland benefits to emergent marsh, a weighted average of the net benefits (net AAHUs) for emergent marsh and open water is calculated with the emergent marsh AAHUs weighted proportionately higher than the open water AAHUs. The weighted formulas to determine net AAHUs for each marsh type are shown below:

Fresh Marsh: $$\frac{2.1(\text{Emergent Marsh AAHUs}) + \text{Open Water AAHUs}}{3.1}$$

Brackish Marsh: $$\frac{2.6(\text{Emergent Marsh AAHUs}) + \text{Open Water AAHUs}}{3.6}$$

Saline Marsh: $$\frac{3.5(\text{Emergent Marsh AAHUs}) + \text{Open Water AAHUs}}{4.5}$$

Wetland Value Assessment Community Model

Fresh/Intermediate Marsh

Vegetation:

Variable V_1 Percent of wetland area covered by emergent vegetation.

Variable V_2 Percent of open water area covered by aquatic vegetation.

Interspersion:

Variable V_3 Marsh edge and interspersion.

Water Depth:

Variable V_4 Percent of open water area $\leq$ 1.5 feet deep, in relation to marsh surface.

Water Quality:

Variable V_5 Mean high salinity during the growing season (March through November).

Aquatic Organism Access:

Variable V_6 Aquatic organism access.

HSI Calculations:

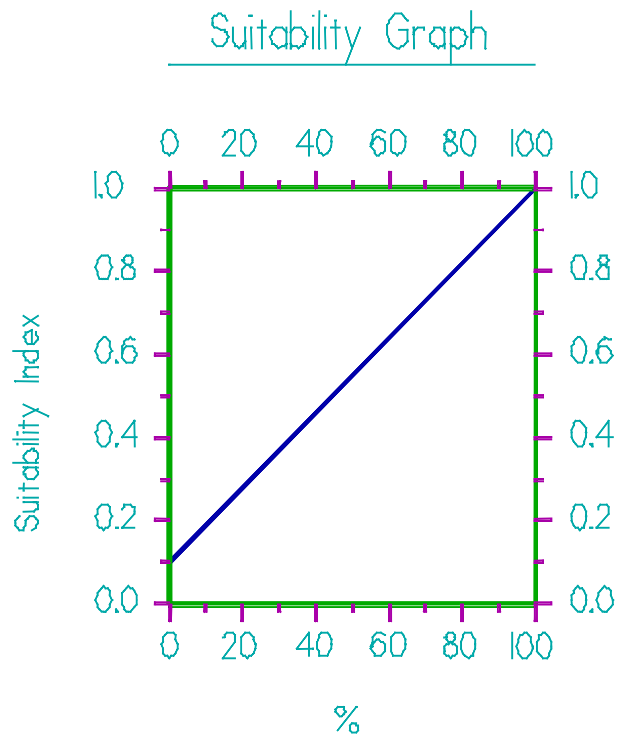
Fresh / Intermediate H S I

$$\text{Emergent Marsh HSI} = \frac{\left(3.5 \times (SIV_1^{5} \times SIV_6^{1})^{(1/6)}\right) + (SIV_3 + SIV_5) / 2}{4.5}$$

$$\text{Open Water HSI} = \frac{\left(3.5 \times (SIV_2^{3} \times SIV_6^{1})^{(1/4)}\right) + (SIV_3 + SIV_4 + SIV_5) / 3}{4.5}$$

Fresh/Intermediate Marsh

Variable V_1 Percent of wetland area covered by emergent vegetation.

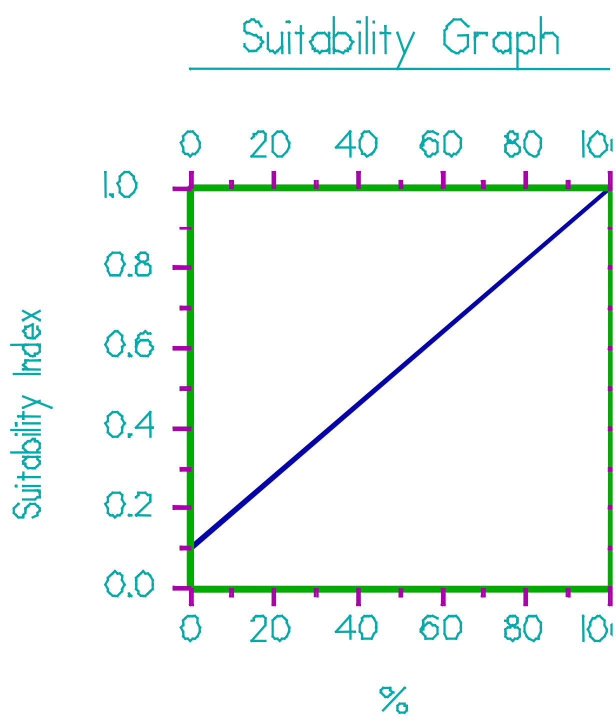


Line Formula

SI = (0.009 * %) + 0.1

Fresh/Intermediate Marsh

Variable V_2 Percent of open water area covered by aquatic vegetation.

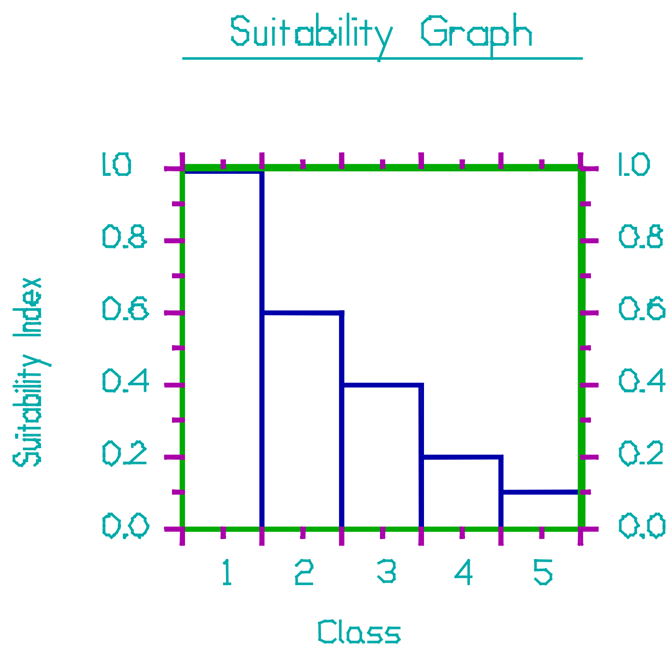


Line Formula

SI = $(0.009 * \%) + 0.1$

Fresh/Intermediate Marsh

Variable V_3 Marsh edge and interspersion.



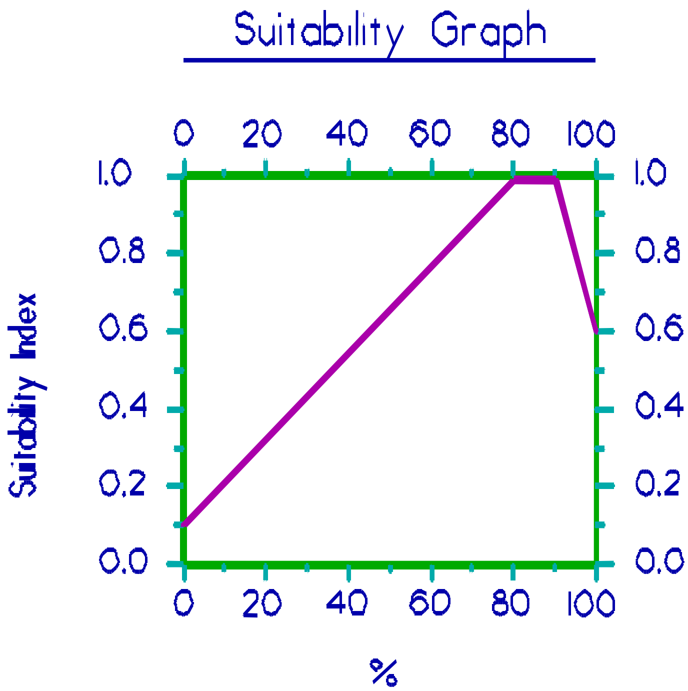
Instructions for Calculating the SI for Variable V_3:

1. Refer to Appendix A for examples of the different interspersion classes.

2. Estimate percent of project area in each class. If the <u>entire</u> project area is solid marsh, assign interspersion Class 1. Conversely, if the <u>entire</u> project area is open water, assign interspersion Class 5.

Fresh/Intermediate Marsh

Variable V_4 Percent of open water area ≤1.5 feet deep, in relation to marsh surface.



Line Formulas

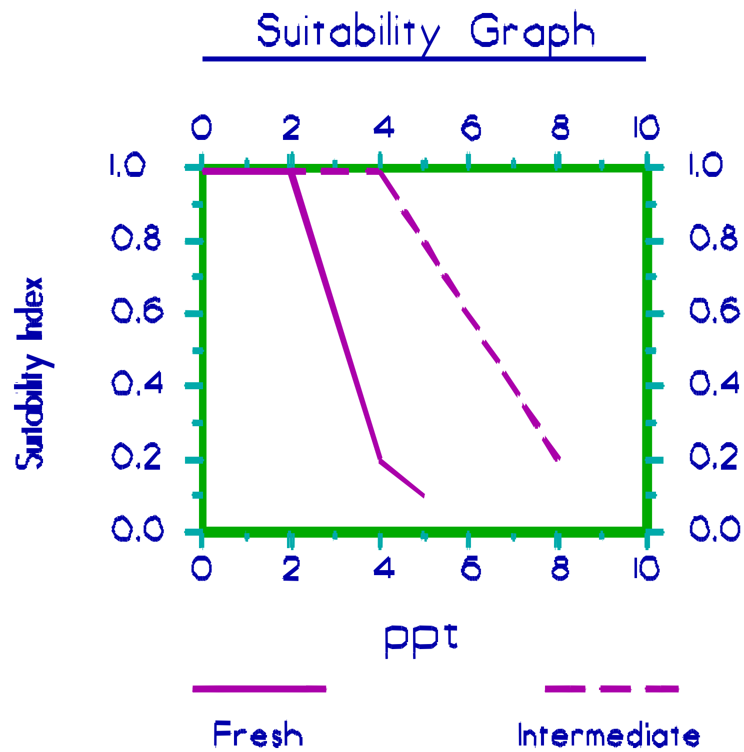
If $0 \leq \% < 80$, then SI = (0.01125 * %) + 0.1

If $80 \leq \% \leq 90$, then SI = 1.0

If % > 90, then SI = (-0.04 * %) + 4.6

Fresh/Intermediate Marsh

Variable V_5 Mean high salinity during the growing season (March through November).



Line Formulas

Fresh Marsh:

If 0 ≤ ppt ≤ 2, then SI = 1.0
If 2 < ppt ≤ 4, then SI = (-0.4 * ppt) + 1.8
If 4 < ppt 5 then SI = (-0.1 * ppt) + 0.6

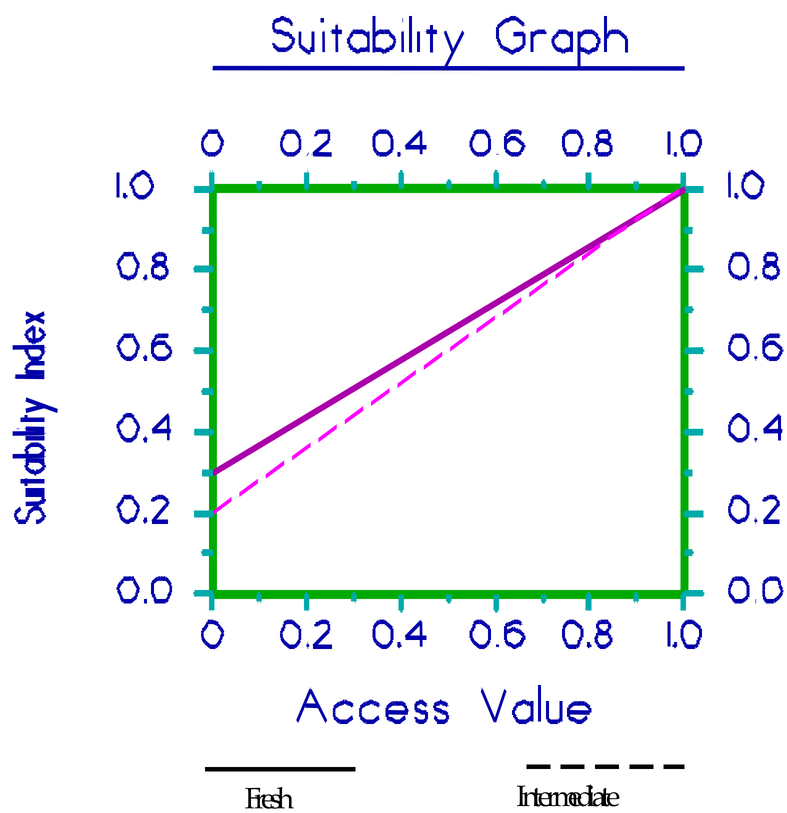
Intermediate Marsh:

If 0 ≤ ppt ≤ 4, then SI = 1.0
If 4 < ppt 8, then SI = (-0.2 * ppt) + 1.8

<u>NOTE</u>: Mean high salinity is defined as the average of the upper 33 percent of salinity readings taken during the period of record.

Fresh/Intermediate Marsh

Variable V_6 Aquatic organism access.



Line Formulas

Fresh Marsh:

SI = (0.7 * Access Value) + 0.3

Intermediate Marsh:

SI = (0.8 * Access Value) + 0.2

<u>NOTE</u>: Access Value = P * R, where "P" = percentage of wetland area considered accessible by estuarine organisms during normal tidal fluctuations, and "R" = Structure Rating.

Refer to Appendix B "Procedure For Calculating Access Value" for complete information on calculating "P" and "R" values.

Wetland Value Assessment Community Model

Brackish Marsh

Vegetation:

Variable V_1 Percent of wetland area covered by emergent vegetation.

Variable V_2 Percent of open water area covered by aquatic vegetation.

Interspersion:

Variable V_3 Marsh edge and interspersion.

Water Depth:

Variable V_4 Percent of open water area $\leq$ 1.5 feet deep, in relation to marsh surface.

Water Quality:

Variable V_5 Average annual salinity.

Aquatic Organism Access:

Variable V_6 Aquatic organism access.

HSI Calculations:

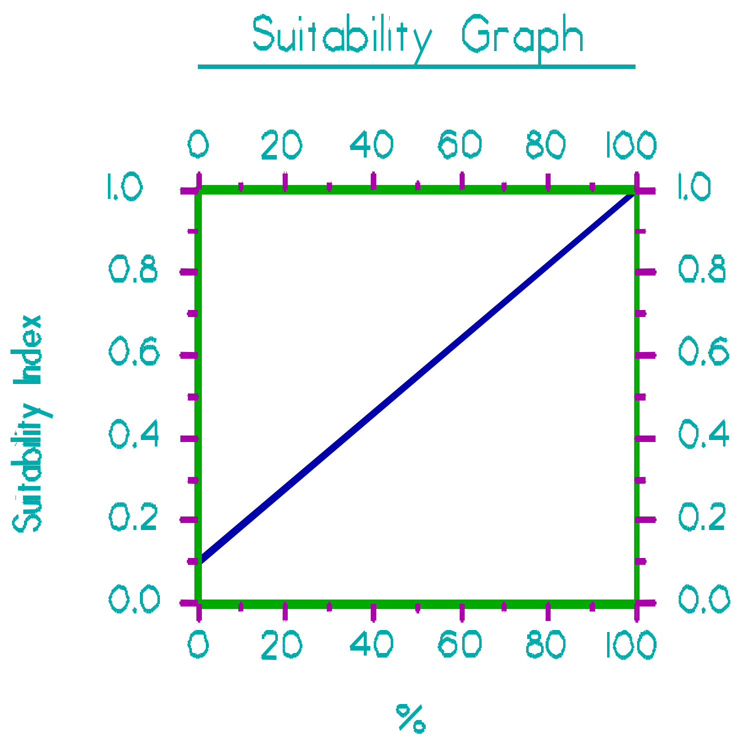
Brackish Marsh H S I

$$\text{Emergent Marsh H S I} = \frac{(3.5 \times (SIV_1^{5} \times SIV_6^{1.5})^{(1/6.5)}) + (SIV_3 + SIV_5) / 2}{4.5}$$

$$\text{Open Water H S I} = \frac{(3.5 \times (SIV_2^{3} \times SIV_6^{2})^{(1/5)}) + (SIV_3 + SIV_4 + SIV_5) / 3}{4.5}$$

Brackish Marsh

Variable V_1 Percent of wetland area covered by emergent vegetation.

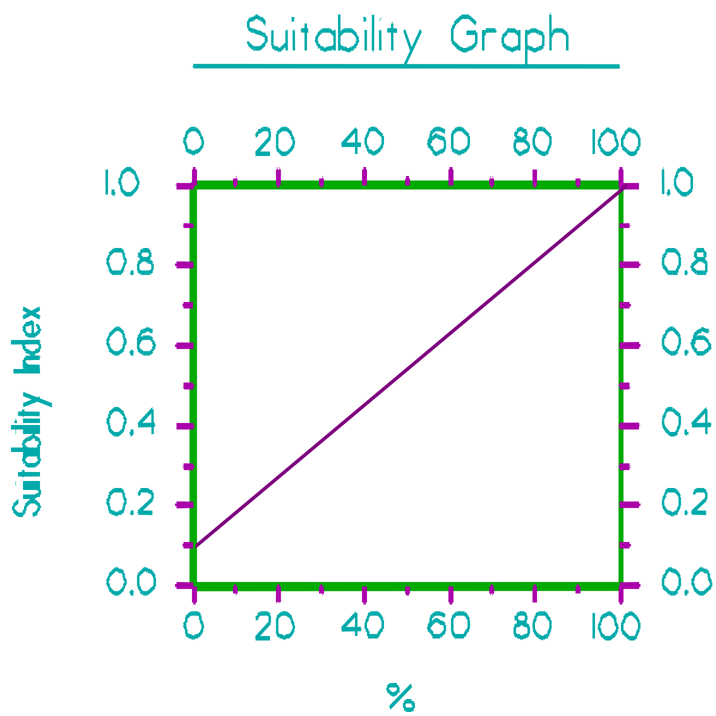


Line Formula

SI = (0.009 * %) + 0.1

Brackish Marsh

Variable V_2 Percent of open water area covered by aquatic vegetation.

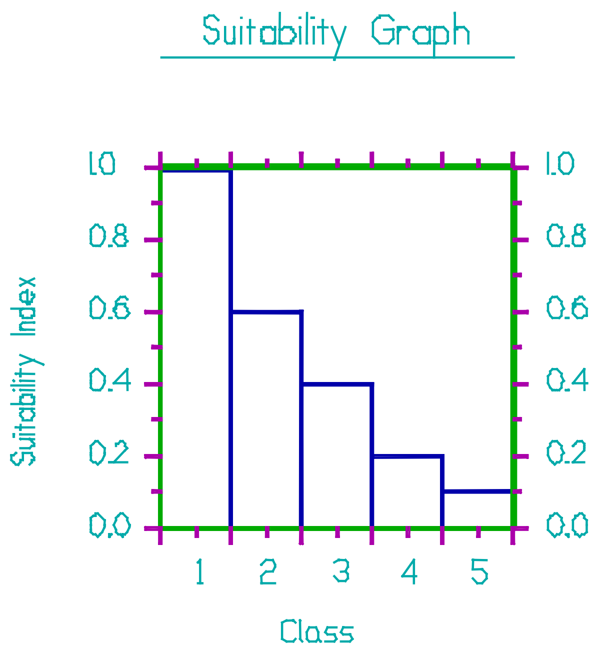


Line Formula

SI = (0.009 * %) + 0.1

Brackish Marsh

Variable V_3 Marsh edge and interspersion.



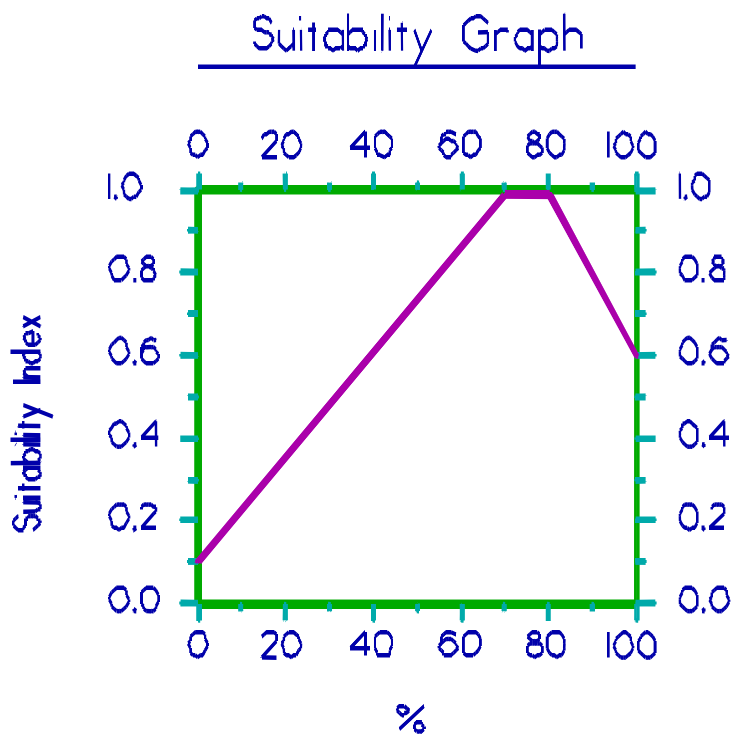
Instructions for Calculating SI for Variable V_3:

1. Refer to Appendix A for examples of the different interspersion classes.

2. Estimate the percent of project area in each class. If the <u>entire</u> project area is solid marsh, assign interspersion Class 1. Conversely, if the <u>entire</u> project area is open water, assign interspersion Class 5.

Brackish Marsh

Variable V_4 Percent of open water area $\leq$ 1.5 feet deep, in relation to marsh surface.



Line Formulas

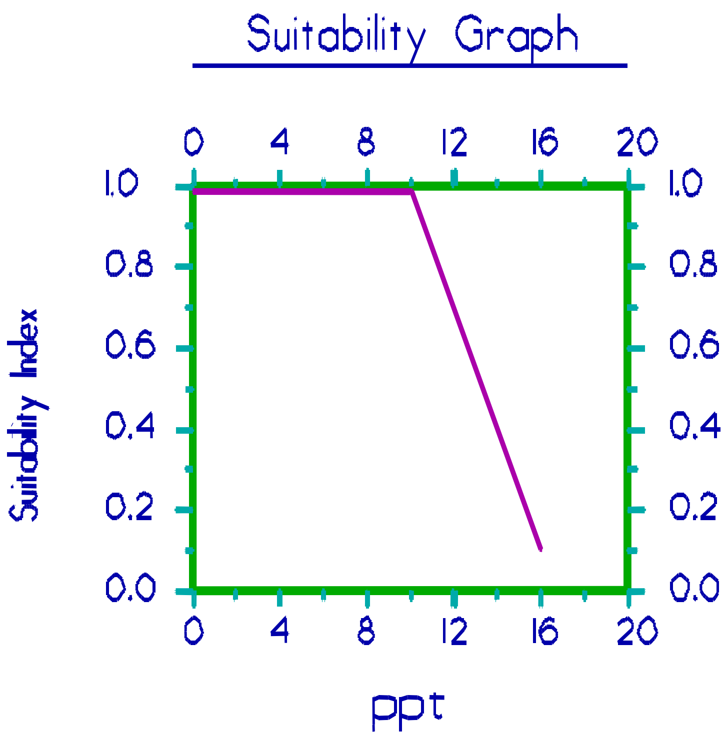
If $0 \leq \% < 70$, then SI = (0.01286 * %) + 0.1

If $70 \leq \% \leq 80$, then SI = 1.0

If % > 80, then SI = (-0.02 * %) + 2.6

Brackish Marsh

Variable V_5 Average annual salinity.



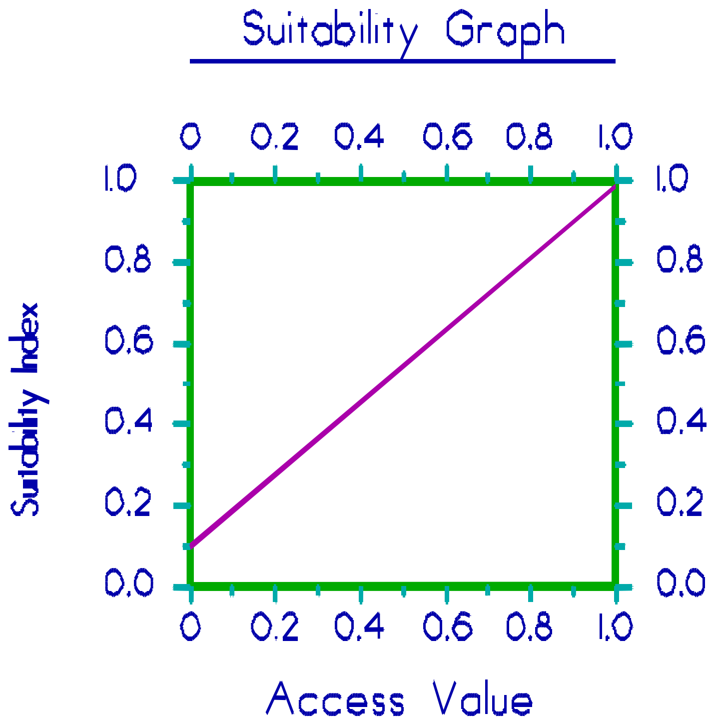
Line Formulas

If $0 \leq ppt \leq 10$, then SI = 1.0

If ppt > 10, then SI = (-0.15 * ppt) + 2.5

Brackish Marsh

Variable V_6 Aquatic organism access.



Line Formula

SI = (0.9 * Access Value) + 0.1

Note: Access Value = P * R, where "P" = percentage of wetland area considered accessible by estuarine organisms during normal tidal fluctuations, and "R" = Structure Rating.

Refer to Appendix B "Procedure For Calculating Access Value" for complete information on calculating "P" and "R" values.

Wetland Value Assessment Community Model

Saline Marsh

Vegetation:

Variable V_1 Percent of wetland area covered by emergent vegetation.

Variable V_2 Percent of open water area covered by aquatic vegetation.

Interspersion:

Variable V_3 Marsh edge and interspersion.

Water Depth:

Variable V_4 Percent of open water area $\leq$ 1.5 feet deep, in relation to marsh surface.

Water Quality:

Variable V_5 Average annual salinity.

Aquatic Organism Access:

Variable V_6 Aquatic organism access.

HSI Calculation:

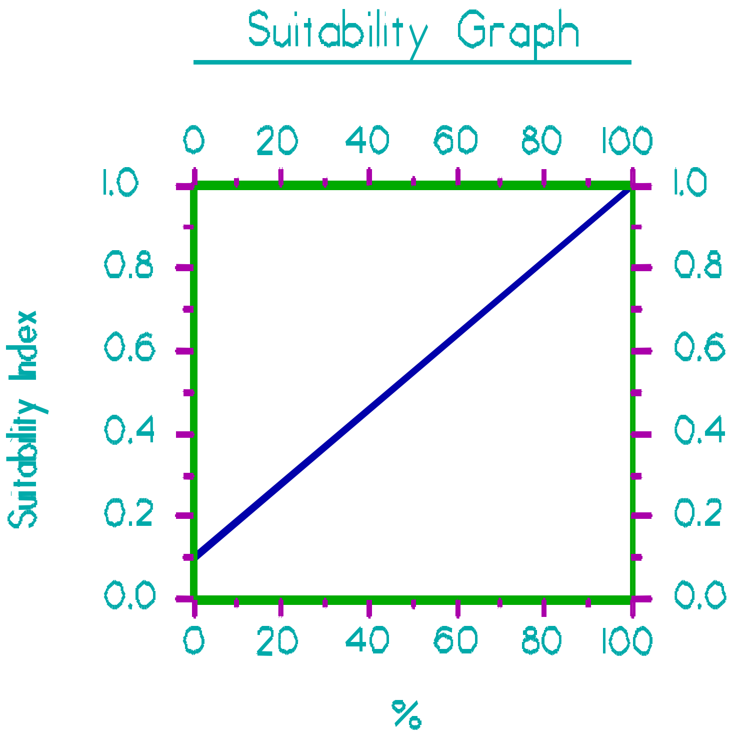
Saline Marsh H S I

$$\text{Emergent Marsh HSI} = \frac{(3.5 \times (SIV_1^{3} \times SIV_6^{1})^{(1/4)}) + (SIV_3 + SIV_5) \;/\; 2}{4.5}$$

$$\text{Open Water HSI} = \frac{(3.5 \times (SIV_2^{1} \times SIV_6^{2.5})^{(1/3.5)}) + (SIV_3 + SIV_4 + SIV_5) \;/\; 3}{4.5}$$

Saline Marsh

Variable V_1 Percent of wetland area covered by emergent vegetation.

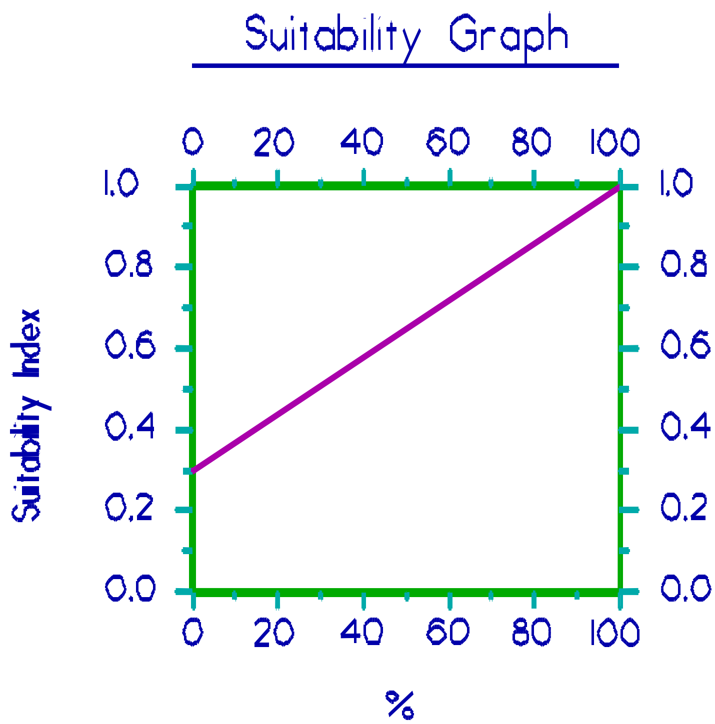


Line Formula

SI = (0.009 * %) + 0.1

Saline Marsh

Variable V_2 Percent of open water area covered by aquatic vegetation.

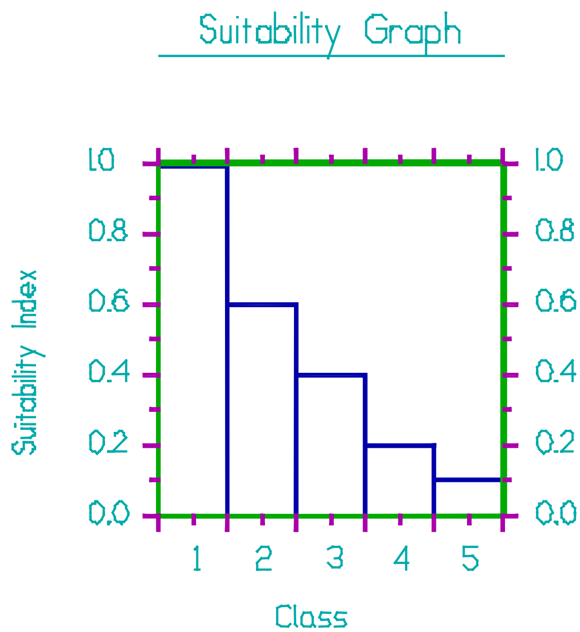


Line Formula

SI = (0.007 * %) + 0.3

Saline Marsh

Variable V_3 Marsh edge and interspersion.



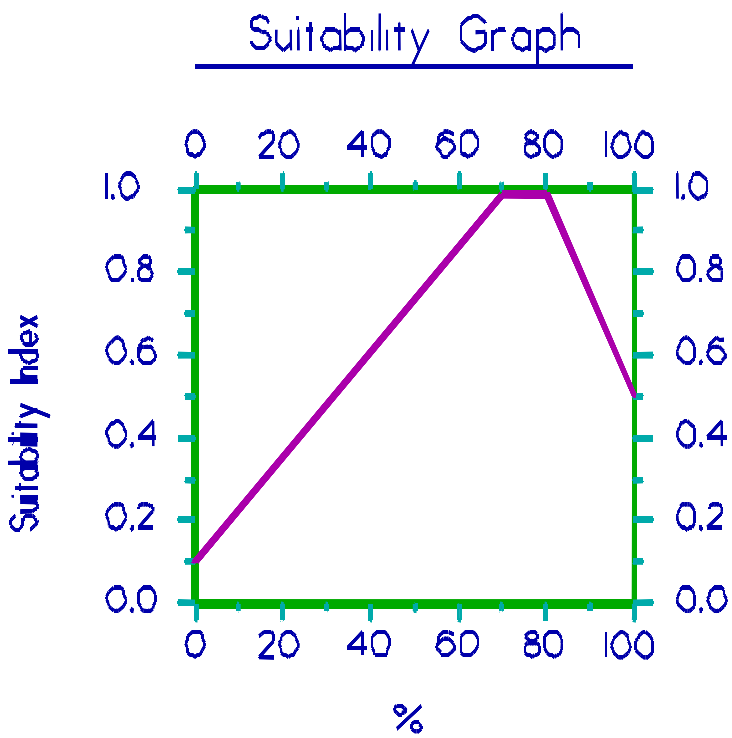
Instructions for Calculating SI for Variable V_3:

1. Refer to Appendix A for examples of the different interspersion classes.

2. Estimate percent of project area in each class. If the <u>entire</u> project area is solid marsh, assign an interspersion Class 1. Conversely, if the <u>entire</u> project area is open water, assign an interspersion Class 5.

Saline Marsh

Variable V_4 Percent of open water area $\leq$ 1.5 feet deep, in relation to marsh surface.



Line Formulas

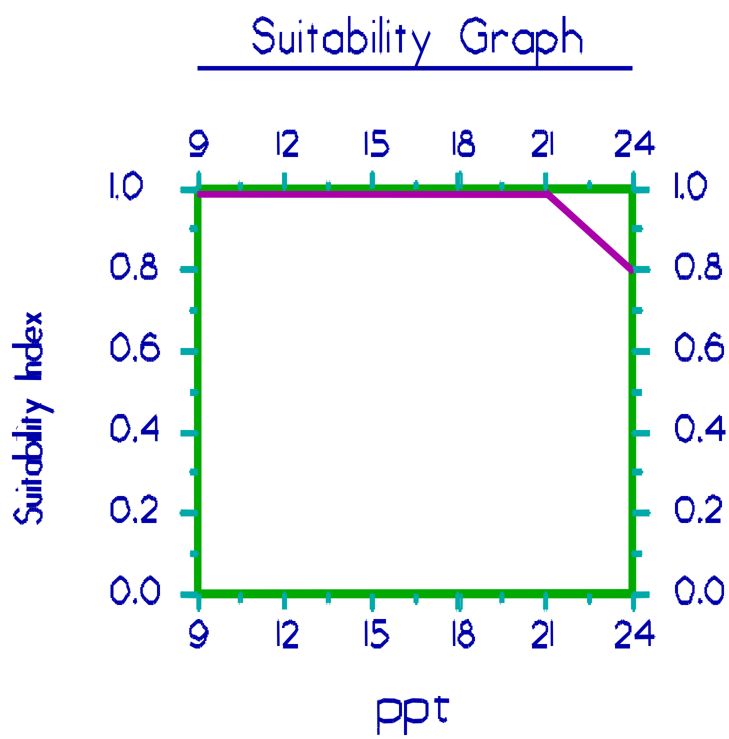
If $0 \leq \% < 70$, then SI = (0.01286 * %) + 0.1

If $70 \leq \% \leq 80$, then SI = 1.0

If % > 80, then SI = (-0.025 * %) + 3.0

Saline Marsh

Variable V_5 Average annual salinity.



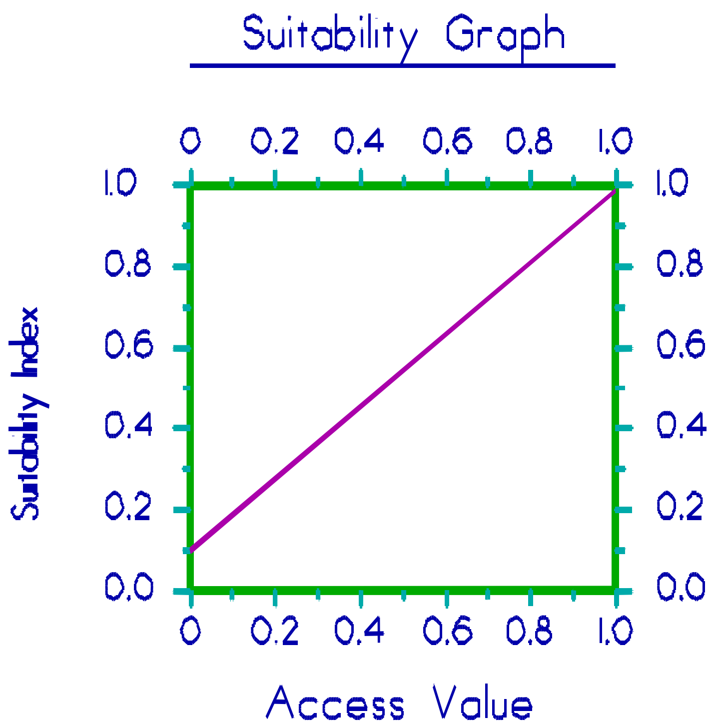
Line Formulas

If $9 \leq ppt \leq 21$, then SI = 1.0

If ppt > 21, then SI = (-0.067 * ppt) + 2.4

Saline Marsh

Variable V_6 Aquatic organism access.



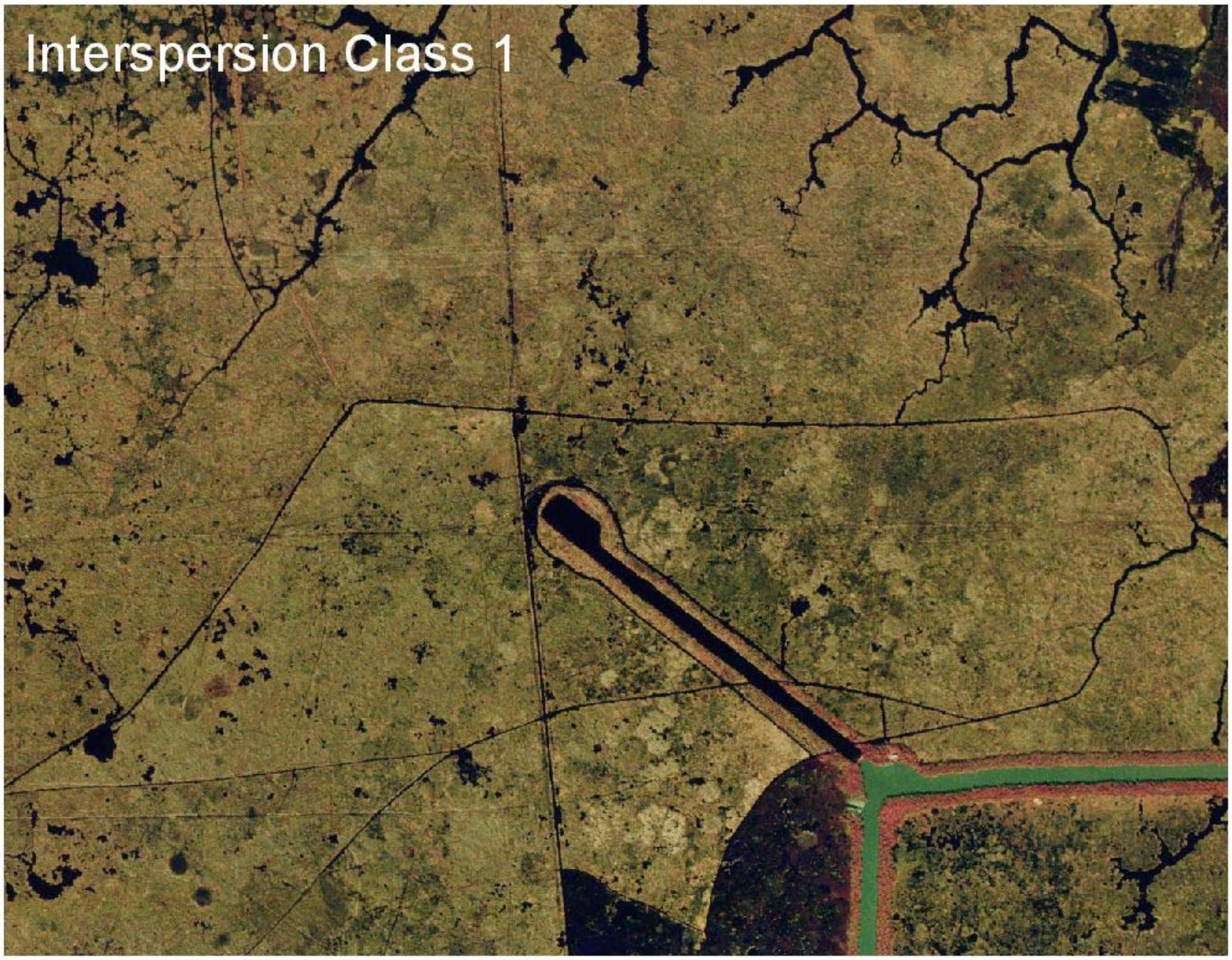
Line Formula

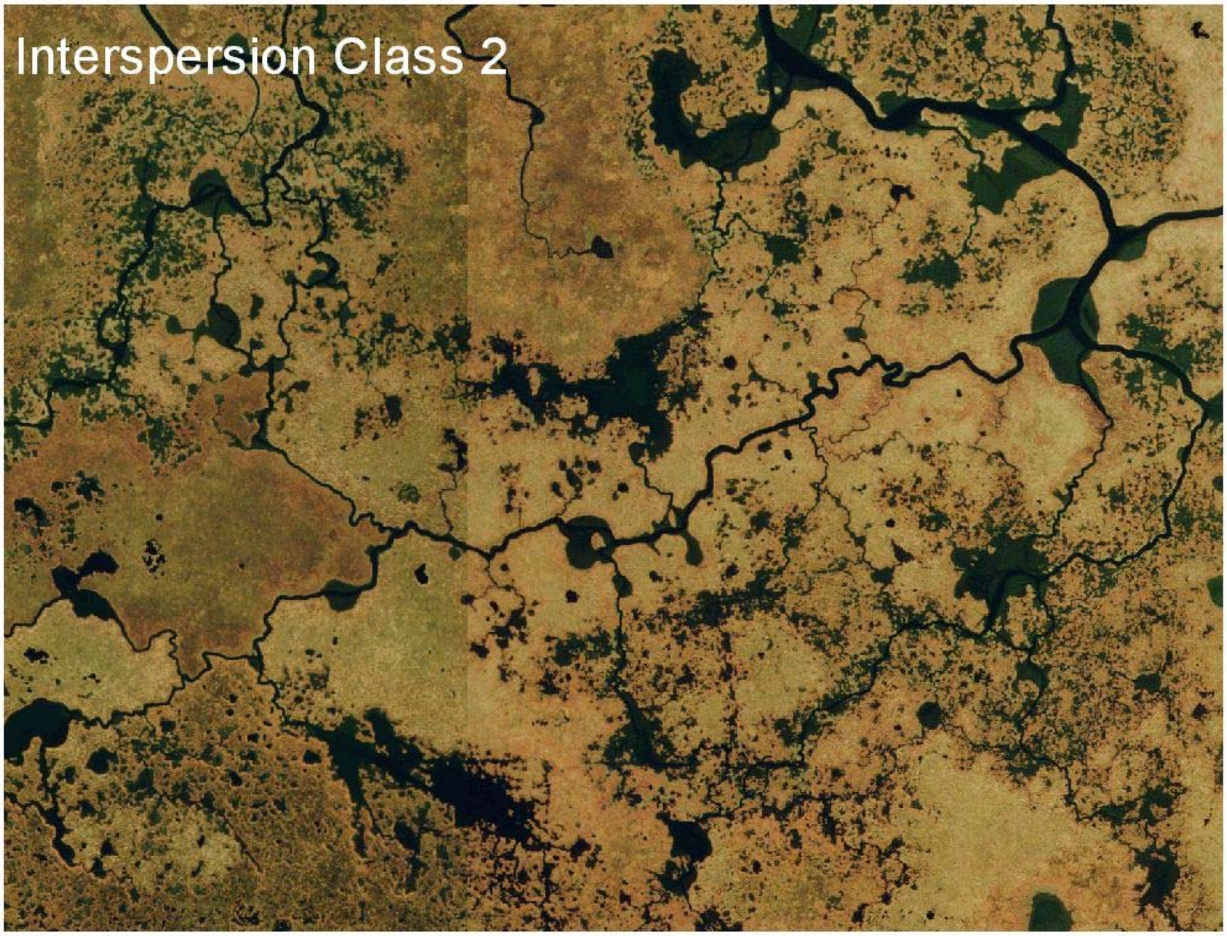
SI = (0.9 * Access Value) + 0.1

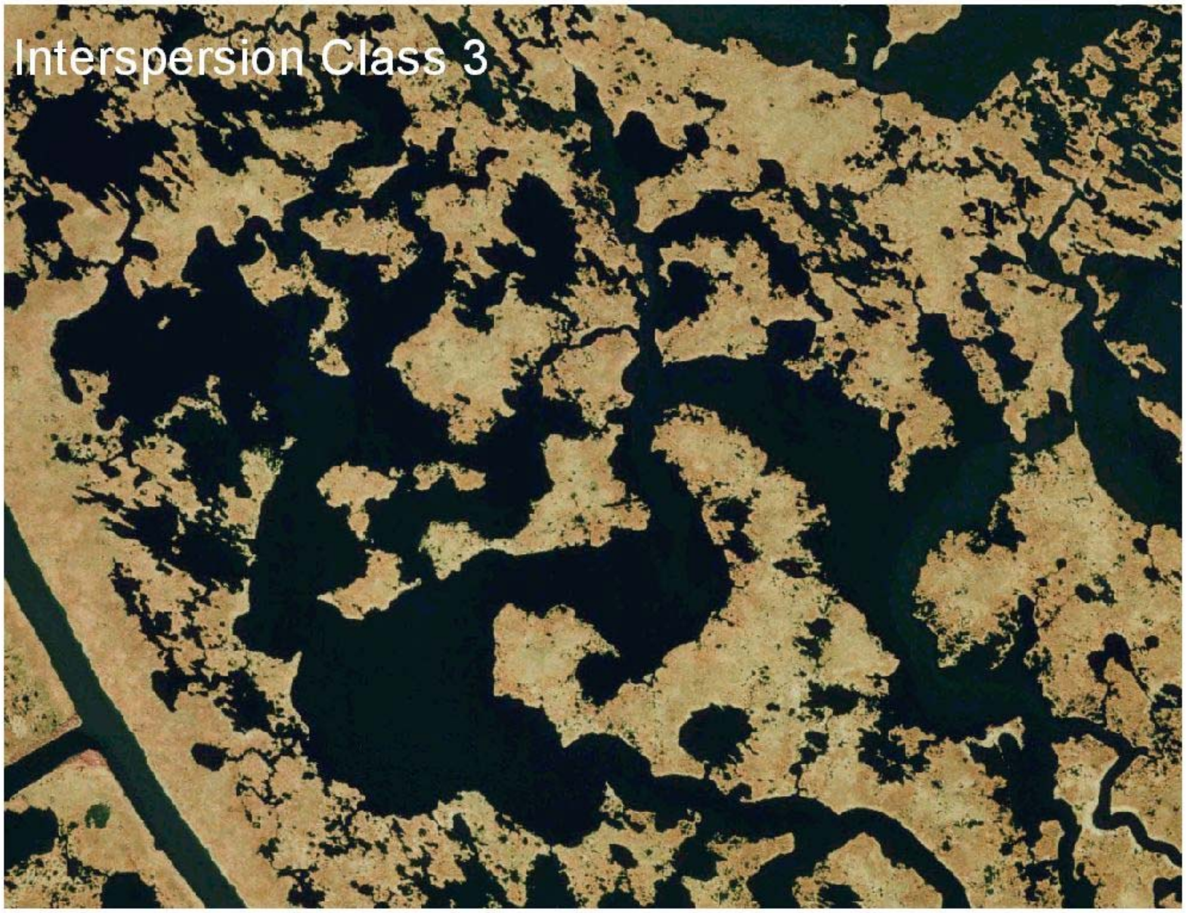
<u>**Note**</u>: Access Value = P * R, where "P" = percentage of wetland area considered accessible by estuarine organisms during normal tidal fluctuations, and "R" = Structure Rating.

Refer to Appendix B "Procedure For Calculating Access Value" for complete information on calculating "P" and "R" values.

Attachment A - Marsh Edge and Interspersion Classes


Interspersion Class 1


Interspersion Class 2


Interspersion Class 3


Interspersion Class 4

Attachment B - Procedure for Calculating Access Value

1. Determine the percent (P) of the wetland area accessible by estuarine organisms during normal tidal fluctuations for baseline (TY0) conditions. P may be determined by examination of aerial photography, knowledge of field conditions, or other appropriate methods.

2. Determine the Structure Rating (R) for each project structure as follows:

Structure Type	Structure Rating
Open system	1.0
Rock weir set at 1ft BML[1], w/ boat bay	0.8
Rock weir with boat bay	0.6
Rock weir set at $\geq$ 1 ft BML	0.6
Slotted weir with boat bay	0.6
Open culverts	0.5
Weir with boat bay	0.5
Weir set at $\geq$ 1 ft BML	0.5
Slotted weir	0.4
Flap-gated culvert with slotted weir	0.35
Variable crest weir	0.3
Flap-gated variable crest weir	0.25
Flap-gated culvert	0.2
Rock weir	0.15
Fixed crest weir	0.1
Solid plug	0.0001

For each structure type, the rating listed above pertains only to the standard structure configuration and assumes that the structure is operated according to common operating schedules consistent with the purpose for which that structure is designed. In the case of a "hybrid" structure or a unique application of one of the above-listed types (including unique or "non-standard" operational schemes), the WVA analyst(s) may assign an appropriate Structure Rating between 0.0001 and 1.0 that most closely approximates the relative degree to which the structure in question would allow ingress/egress of estuarine organisms. In those cases, the rationale used in developing the new Structure Rating shall be documented.

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1 Below Marsh Level

3. Determine the Access Value. Where multiple openings equally affect a common "accessible unit", the Structure Rating (R) of the structure proposed for the "major" access point for the unit will be used to calculate the Access Value. The designation of "major" will be made by the Environmental Work Group. An "accessible unit" is defined as a portion of the total accessible area that is served by one or more access routes (canals, bayous, etc.), yet is isolated in terms of estuarine organism access to or from other units of the project area. Isolation factors include physical barriers that prohibit further movement of estuarine organisms, such as natural levee ridges, and spoil banks; and dense marsh that lacks channels, trenasses, and similar small connections that would, if present, provide access and intertidal refugia for estuarine organisms.

   Access Value should be calculated according to the following examples (Note: for all examples, P for TY0 = 90%. That designation is arbitrary and is used only for illustrative purposes; P could be any percentage from 0% to 100%):

   a. One opening into area; no structure.

      Access Value = P
      = .90

   b. One opening into area that provides access to the entire 90% of the project area deemed accessible. A flap-gated culvert with slotted weir is placed across the opening.

      Access Value = P * R
      = .90 * .35
      = .32

   c. Two openings into area, each capable by itself of providing full access to the 90% of the project area deemed accessible in TY0. Opening #2 is determined to be the major access route relative to opening #1. A flap-gated culvert with slotted weir is placed across opening #1. Opening #2 is left unaltered.

      Access Value = P
      = .90

      Note: Structure #1 had no bearing on the Access Value calculation because its presence did not reduce access (opening #2 was determined to be the major access route, and access through that route was not altered).

   d. Two openings into area. Opening #1 provides access to an accessible unit comprising 30% of the area. Opening #2 provides access to an accessible unit comprising the remaining 60% of the project area. A flap-gated culvert with slotted weir is placed across #1. Opening #2 is left open.

      Access Value = weighted avg. of Access Values of the two accessible units
      = $([P_1 * R_1] + [P_2 * R_2])/(P_1+P_2)$

= ([.30*0.35] + [.60*1.0])/(.30+.60)
= (.11 + .60)/.90
= .71/.90
= .79

Note: $P_1 + P_2 = .90$, because only 90 percent of the study area was determined to be accessible at TY0.

e. Three openings into area, each capable of providing full access to the entire area independent of the others. Opening #3 is determined to be the major access route relative to openings #1 and #2. Opening #1 is blocked with a solid plug. Opening #2 is fitted with a flap-gated culvert with slotted weir, and opening #3 is left open.

Access Value = P
= .90

Note: Structures #1 and #2 had no bearing on the Access Value calculation because their presence did not reduce access (opening #3 was determined to be the major access route, and access through that route was not altered).

f. Three openings into area, each capable of providing full access to the entire area independent of the others. Opening #2 is determined to be the major access route relative to openings #1 and #3. Opening #1 is blocked with a solid plug. Opening #2 is fitted with a flap-gated culvert with slotted weir, and opening #3 is fitted with a fixed crest weir.

Access Value = $P * R_2$
= .90 * .35
= .32

Note: Structures #1 and #3 had no bearing on the Access Value calculation because their presence did not reduce access. Opening #2 was determined beforehand to be the major access route; thus, it was the flap-gated culvert with slotted weir across that opening that actually served to limit access.

g. Three openings into area. Opening #1 provides access to an accessible unit comprising 20% of the area. Openings #2 and #3 provide access to an accessible unit comprising the remaining 70% of the area, and within that area, each is capable by itself of providing full access. However, opening #3 is determined to be the major access route relative to opening #2. Opening #1 is fitted with an open culvert, #2 with a flapgated culvert with slotted weir, and #3 with a fixed crest weir.

Access Value = $([P_1*R_1] + [P_2*R_3])/(P_1+P_2)$

= ([.20*.5]+[.70*.35])/(.20+.70)
= (.10 + .25)/.90
= .35/.90
= .39

h. Three openings into area. Opening #1 provides access to an accessible unit comprising 20% of the area. Opening #2 provides access to an accessible unit comprising 40% of the area, and opening #3 provides access to the remaining 30% of the area. Opening #1 is fitted with an open culvert, #2 a flap-gated culvert with slotted weir, and #3 a fixed crest weir.

Access Value $= ([P_1*R_1]+[P_2*R_2]+[P_3*R_3])/(P_1+P_2+P_3)$

$= ([.20*.5]+[.40*.35]+[.30*.1])/(.20+.40+.30)$
$= (.10+.14+.03)/.90$
$= .27/.90$
$= .30$

V. Swamp Community Model

INTRODUCTION

The CWPPRA Environmental Work Group (EnvWG) developed a fresh swamp community model in 1991. However, the Environmental Work Group abandoned use of that model and began using a swamp community model developed by the Louisiana Department of Natural Resources (LDNR). The LDNR model was developed to quantify the impacts of permitted activities and compensatory mitigation proposals in the Louisiana coastal zone and contained a more complete list of variables to characterize habitat quality of swamp in the coastal zone. Because that model was developed for regulatory purposes, it contained some variables which were not being impacted by candidate CWPPRA restoration projects. Therefore, in 2001, the EnvWG decided to modify that model so that it would be more sensitive to the impacts of proposed restoration projects. The following sections describe the process and assumptions used in the initial development of the swamp model.

The swamp model was developed to determine the suitability of swamp habitat in providing resting, foraging, and nesting habitat for a diverse assemblage of wildlife species. The model is generally applied to areas supporting or capable of supporting a canopy of woody vegetation which covers at least 33 percent of the area's surface, and with at least 60 percent of that canopy consisting of any combination of baldcypress, tupelogum, red maple, buttonbush, and/or planertree. The LDNR model stated that if woody canopy cover is less than 33 percent, then a fresh marsh model should be applied. However, the EnvWG recognized that some areas with less than 33% canopy cover provide functions and values more closely associated with a swamp than a fresh marsh. Therefore, the EnvWG agreed that the 33% canopy cover criterion should be treated as a general “rule of thumb” for model application, with some exceptions. If greater than 40 percent of the woody vegetation canopy consists of species such as oaks, hickories, American elm, green ash, sweetgum, sugarberry, boxelder, persimmon, honeylocust, red mulberry, eastern cottonwood, American sycamore, etc., then a bottomland hardwood model should be applied.

VARIABLE SELECTION

Variable selection for the original swamp model developed by the LDNR was based on a review of; 1) Habitat Suitability Index (HSI) models, published by the U.S. Fish and Wildlife Service, for wood duck, barred owl, swamp rabbit, mink, downy woodpecker, and gray squirrel, 2) a community model for forest birds, published by the U.S. Fish and Wildlife Service, 3) "A Habitat Evaluation System for Water Resources Planning", published by the U.S. Army Corps of Engineers, and 4) a draft version of "A Community Habitat Evaluation Model for Bottomland Hardwood Forests in the Southeastern United States", coauthored by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Several habitat variables appeared repeatedly in the various models. In general, it was concluded that those variables which occurred most frequently in the various models were the most important for assessing habitat quality. The species-specific (i.e., HSI) models concentrated on assessment of site-specific habitat quality features such as tree species composition, forest stand structure (understory, midstory, overstory conditions), stand maturity, and hydrology. Other models reviewed concentrated on how a site fits into the overall "landscape". The original swamp model incorporated variables which addressed habitat quality (e.g., stand structure) and landscape function (e.g., the size of the contiguous forested area). The final variables selected were reviewed by representatives of the LDNR, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Louisiana Department of Wildlife and Fisheries. The final list of variables included; 1) stand structure, 2) stand maturity, 3) hydrology, 4) size of contiguous forested area, 5) suitability and traversability of surrounding land use, and 6) disturbance.

After using the LDNR model for several years, the EnvWg recognized that several of the model variables were not being impacted, thus model sensitivity and project benefits were being compromised. Values for the non-impacted variables (i.e., size of the contiguous forested area, suitability and traversability of surrounding land uses, and disturbance) were the same under future without-project and future with-project conditions. In an effort to improve model sensitivity, those variables were omitted. In addition, the stand structure, stand maturity, and hydrology variables were revised and a salinity variable was included in the model. A salinity variable was included in the original swamp model developed by the CWPPRA EnvWG and was recognized as an important variable in characterizing the habitat quality of swamp ecosystems. Therefore, the final list of variables includes; 1) stand structure, 2) stand maturity, 3) water regime, and 4) mean high salinity during the growing season.

SUITABILITY INDEX GRAPH DEVELOPMENT

Suitability Index (SI) graph development was very similar to the process used for other community models such as the emergent marsh community models. A variety of resources was utilized to construct each SI graph, including the HSI models from which the final list of variables was partially derived, consultation with other professionals and researchers outside the EnvWG, published and unpublished data and studies, and personal knowledge of EnvWG members. An important "non-biological" constraint on SI graph development was the need to insure that graph relationships were not counter to the purpose of the CWPPRA, that is, the long term creation, restoration, protection, or enhancement of coastal vegetated wetlands. The process of SI graph development was one of constant evolution, feedback, and refinement; the form of each SI graph was decided upon through consensus among EnvWG members.

The Suitability Index graphs were developed according to the following assumptions:

Variable V_1 - Stand structure**.** Most swamp tree species do not produce hard mast; consequently, wildlife foods predominantly consist of soft mast, other edible seeds, invertebrates, and vegetation. Because most swamp tree species produce some soft mast or other edible seeds, the actual tree species composition is not usually a limiting factor. More limiting is the presence of stand structure to provide resting, foraging, breeding, nesting, and nursery habitat and the medium for invertebrate production. This medium can exist as herbaceous vegetation, scrub-shrub/midstory cover, or overstory canopy and preferably as a combination of all three. This variable assigns the lowest suitability to sites with a limited amount of all three stand structure components, the highest suitability to sites with a significant amount of all three stand structure components, and mid-range suitability to various combinations when one or two stand structure components are present.

Variable V_2 - Stand maturity. Because of man's historical conversion of swamp, the loss of swamp to saltwater intrusion, historical and ongoing timber harvesting, and a reduced tree growth rate in the subsiding coastal zone, swamps with mature sizeable trees are a unique but ecologically important feature. Older trees provide important wildlife requisites such as snags and nesting cavities and the medium for invertebrate production. Additionally, as the stronger trees establish themselves in the canopy, weaker trees are out-competed and eventually die, forming additional snags and downed treetops that would not be present in younger stands. The suitability graph for this variable assumes that snags, cavities, downed treetops, and invertebrate production are present in suitable amounts when the average diameter-at-breast height (DBH) of canopy-dominant and canopy-codominant trees is above 16 inches for baldcypress and above 12 inches for tupelogum and other species. Therefore, stands with those characteristics are considered optimal for this variable (SI = 1.0).

Another important consideration for this variable is stand density, measured in terms of basal area. A scenario sometimes encountered in mature swamp ecosystems is an overstory consisting of a very few, widely-scattered, mature baldcypress. If stand density was not considered, and average DBH only, then those stands would receive a high SI for this variable without providing many of the important habitat components of a mature swamp ecosystem, specifically a suitable number of trees for nesting, foraging, and other habitat functions. Therefore, the SI for this variable is dependent on average DBH and basal area which is used as a measure of stand density.

Variable V_3 - Water regime. This variable considers the duration and amount of water flow/exchange. Four flow/exchange and four flooding duration categories are described to characterize the water regime. The optimal water regime is assumed to be seasonal flooding with abundant and consistent riverine/tidal input and water flow-through (SI=1.0). Seasonal flooding with periodic drying cycles is assumed to contribute to increased nutrient cycling (primarily through oxidation and decomposition of accumulated detritus), increased vertical structure complexity (due to growth of other plants on the swamp floor), and increased recruitment of dominant overstory trees. In addition, abundant and consistent input and water flow-through is optimal, because under that regime the full functions and values of a swamp in providing fish and wildlife habitat are assumed to be maximized. Temporary flooding is also assumed to be desirable. Habitat suitability is assumed to decrease as water exchange between the swamp and adjacent systems is reduced. The combination of permanently flooded conditions and no water exchange (e.g., an impounded swamp where the only water input is through rainfall and the only water loss is through evapotranspiration and ground seepage) is assumed to be the least desirable (SI=0.1). Those conditions can produce poor water quality during warm weather, reducing fish use and crawfish production.

Variable V_4 - Mean high salinity during the growing season. Mean high salinity during the growing season (March 1 to October 31) is defined as the average of the upper 33 percent of salinity measurements taken during the specified period of record. Although baldcypress is able to tolerate higher salinities than other swamp species, species such as tupelogum and many herbaceous species are salinity-sensitive. Optimal conditions are assumed to occur at mean high salinities less than 1.0 ppt. Habitat suitability is assumed to decrease rapidly at mean high salinities in excess of 1.0 ppt.

HABITAT SUITABILITY INDEX FORMULA

In developing the HSI formula for this model, the EnvWG agreed that variables V_1 and V_3, stand structure and water regime, were the most important variables in characterizing the habitat quality of a swamp. Therefore, those variables were given greater influence in the model than the remaining variables. Variable V_2, stand maturity, was given slightly less weight than stand structure and water regime. Variable V_4, salinity, was deemed the least important. All variables are grouped to produce a geometric mean and variable influence is only controlled by the weight (i.e., exponent) assigned to each variable.

HSI Calculation: $HSI = (SIv_1^{3} \times SIv_2^{2.5} \times SIv_3^{3} \times SIv_4^{1.5})^{1/10}$

BENEFIT ASSESSMENT

Calculation of HUs, AAHUs, and net AAHUs follows the same procedure as indicated in the Wetland Value Assessment Methodology Introduction.

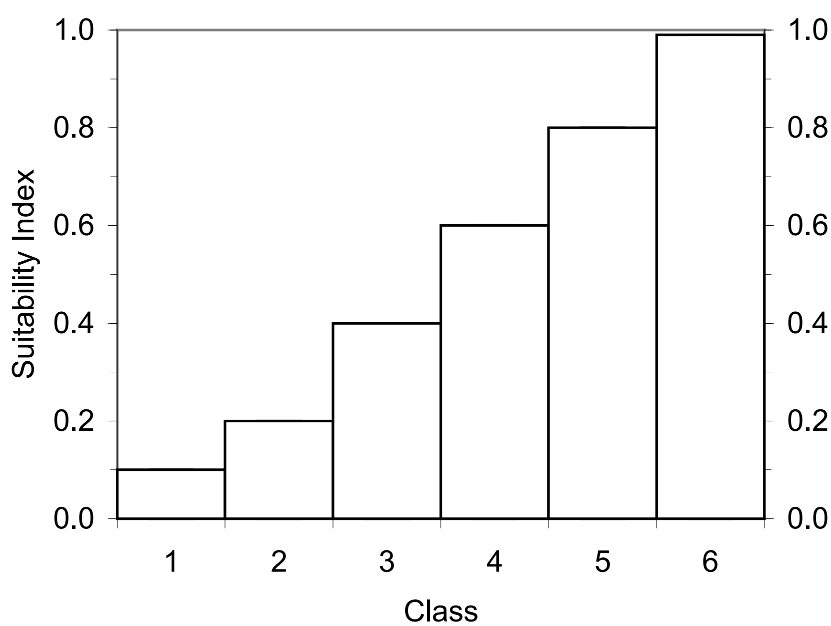
Swamp

Variable V_1 Stand structure.

Each component of stand structure should be viewed independently to determine the percent closure or coverage.

	Overstory Closure		Scrub-shrub/ Midstory Cover		Herbaceous Cover
Class 1.	<33%				
Class 2.	33%<50%	and	<33%	and	<33%
Class 3.	33%<50%	and	>33%	or	>33%
Class 4.	50%-75%	and	>33%	or	>33%
Class 5.	33%<50%	and	>33%	and	>33%
Class 6.	≥50%	and	>33%	and	>33%
			OR		
	≥75%	and	>33%	or	>33%

Suitability Graph



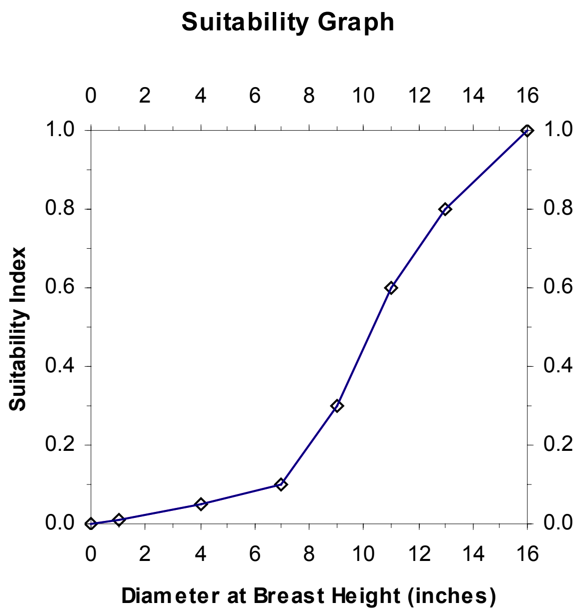
Swamp

Variable V_2 Stand maturity.

Average dbh of canopy-dominant and canopy-codominant trees.

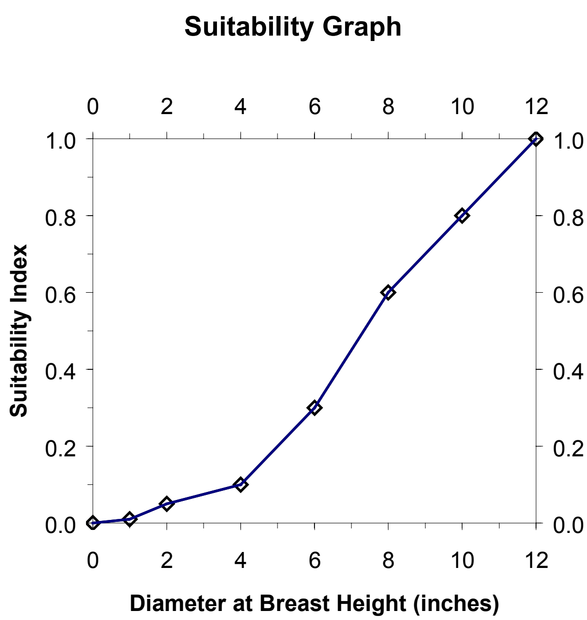
Notes:

1. Canopy-dominant and codominant trees are those whose crown rises above or is an integral part of the overstory.
2. For trees with buttress swell, dbh is the diameter measured at 12" above the swell.
3. The SI for this variable is multiplied by the factors in the table below depending on stand density.



Suitability Index Line Formulas for baldcypress:

If dbh = 0 then SI = 0
If 0 < dbh ≤ 1 then SI = .01 * dbh
If 1 < dbh ≤ 4 then SI = (.013 * dbh) - .003
If 4 < dbh ≤ 7 then SI = (.017 * dbh) - .017
If 7 < dbh ≤ 9 then SI = (.1 * dbh) - .6
If 9 < dbh ≤ 11 then SI = (.15 * dbh) - 1.05
If 11 < dbh ≤ 13 then SI = (.1 * dbh) - .5
If 13 < dbh ≤ 16 then SI= (.067 * dbh) -



Suitability Index Line Formulas for tupelogum et al.:

If 0 < dbh ≤ 1 then SI = .01 * dbh
If 1 < dbh ≤ 2 then SI = (.04 * dbh) - .03
If 2 < dbh ≤ 4 then SI = .025 * dbh
If 4 < dbh ≤ 6 then SI = (.1 * dbh) - .3
If 6 < dbh ≤ 8 then SI = (.15 * dbh) - .6
If 8 < dbh ≤ 12 then SI = (.1 * dbh) - .2
If dbh > 12 then SI = 1.0

Swamp

Variable V_3 Water regime.

Density	Basal Area	Factor
Open	$<40ft^2$	0.2
Moderately Open	$40ft^2 \leq BA \leq 80ft^2$	0.4
Moderate	$81ft^2 \leq BA \leq 120ft^2$	0.6
Moderately Dense	$121ft^2 \leq BA \leq 160ft^2$	0.8
Dense	$>161ft^2$	1.0

		Flow/Exchange			
		High	Moderate	Low	None
Flooding Duration	Seasonal	1.00	0.85	0.70	0.50
	Temporary	0.9	0.75	0.65	0.40
	Semi-Permanent	0.75	0.65	0.45	0.25
	Permanent	0.65	0.45	0.30	0.10

Flooding Duration

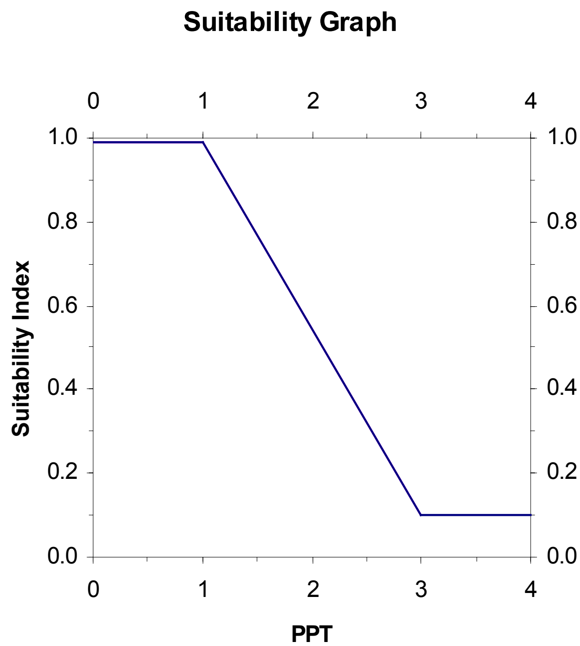
1. <u>Permanently Flooded</u>: Water covers the substrate throughout the year in all years.
2. <u>Semipermanently Flooded</u>: Surface water is present throughout the growing season in most years.
3. <u>Seasonally Flooded</u>: Surface water is present for extended periods, especially in the growing season, but is absent by the end of the growing season in most years.
4. <u>Temporarily Flooded</u>: Surface water is present for brief periods during the growing season, but the water table usually lies well below the surface for most of the season.

Flow/Exchange

1. <u>High</u>: Receives abundant and consistent riverine input and through-flow.
2. <u>Moderate</u>: Moderate water exchange, through riverine and/or tidal input.
3. <u>Low</u>: Limited water exchange, through riverine and/or tidal input.
4. <u>None</u>: No water exchange (stagnant, impounded).

Swamp

Variable V_4 Mean high salinity during the growing season.



Line Formulas

If $0 \le ppt \le 1.0$, then SI = 1.0

If $1.0 < ppt < 3.0$, then SI = (-0.45 * ppt) + 1.45

If $ppt \ge 3.0$, then SI = 0.1

Mean high salinity during the growing season is defined as the average of the highest 33 percent of consecutive salinity readings taken during the period of record (March 1 through October 31).

Coastal Wetlands Planning, Protection, and Restoration Act

12h Priority Project List Report

Appendix C

Engineering Cost Estimates For Candidate Projects

Appendix C

Engineering Cost Estimates for Candidate Projects

Table of Contents

APPENDIX C

LEGEND

LF = Linear Foot

SF = Square Foot

EA = Each

CY = Cubic Yard

SY = Square Yard

TN = Ton

LS = Lump Sum

LB = Pound

ST = 100 ft station

AC = Acre

Project:	Hydrologic Restoration in the Swamps West of Lake Maurepas-Amite River Diversion Canal Spoil Bank Gapping				
		Date:		Revised:	Oct-02
Computed by:	Crawford	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	$100,000.00	100,000
2	Cut Excavation	20,741	CY	$12.00	249,000
3	RR Grade Gapping Excavation	890	CY	$2.50	2,000
4	Bulkheads	3,160	LF	$300.00	948,000
5	Bulkheads at Bridges	720	LF	$400.00	288,000
6	Prefabricated bridges installed (less excavation)	2	Each	200,000	400,000
7	Clearing and Grubbing	2	Acre	4,800	10,000
8	Erosion Protection	9,800	SY	28	275,000
9	Aerial Utility Crossings	12	Each	1,000	12,000

ESTIMATED CONSTRUCTION COST	**2,284,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**2,855,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I			
Federal Costs			
Engineering and Design			$664,000
Engineering	$189,000		
Geotechnical Investigation	$35,000		
Hydrologic Modeling	$200,000		
Data Collection	$200,000		
Cultural Resources	$10,000		
NEPA Compliance	$30,000		
Supervision and Administration		57000	$57,000.00
State Costs			
Supervision and Administration			$57,000
Easements and Land Rights			$90,000
Oyster Issues (# of Leases)	$0		
Monitoring			$52,524
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$27,524		
	Total Phase I Cost Estimate		**$921,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$3,255,000
Land Aquisition	$400,000		
Supervision and Inspection	106 days @	852 per day	$90,000
Supervision and Administration		57000	$57,000
State Costs			
Supervision and Administration			$57,000
	Total Phase II Cost Estimate		**$3,459,000**

TOTAL ESTIMATED PROJECT FIRST COST	**$4,380,000**

Project:	Lake Borgne and MRGO Shoreline Protection	Date:	06-Sep-02	Revised:	15-Oct-02
Computed by:	USACE, Chris Monnerjahn	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	MRGO - North Bank & Lake Borgne: Mob & Demob	1	LS	50,000.00	50,000
2	MRGO - North Bank: Stone (2,200 lb max)	71,000	TON	25.00	1,775,000
3	MRGO - North Bank: Core Material	30,000	CY	31.00	930,000
4	MRGO - North Bank: Geotextile (300 (lb/in))	131,000	SY	4.00	524,000
5	MRGO - North Bank: Marker Plates	290	EACH	400.00	116,000
6	MRGO - North Bank: Flotation Channel	1	LS	187,500.00	187,500
7	Lake Borgne: Stone (2,200 lb max)	100,000	TON	25.00	2,500,000
8	Lake Borgne: Core Material	30,000	CY	31.00	930,000
9	Lake Borgne: Geotextile (300 (lb/in))	100,000	SY	4.00	400,000
10	Lake Borgne: Marker Plates	370	EACH	400.00	148,000
11	Lake Borgne: Flotation Channel	1	LS	256,000.00	256,000

ESTIMATED CONSTRUCTION COST	**7,816,500**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**9,771,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I			
Federal Costs			
Engineering and Design			$793,000
Engineering (includes all geotech. & surveys)	$704,000		
Geotechnical Investigation	$0		
Hydrologic Modeling	$0		
Data Collection	$0		
Cultural Resources	$17,000		
HTRW	$10,000		
NEPA Compliance	$62,000		
Supervision and Administration			$196,000.00
State Costs			
Supervision and Administration			$195,500
Easements and Land Rights			$64,000
Oyster Issues (2 Leases)	$4,000		
Monitoring			$27,859
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$2,859		
	Total Phase I Cost Estimate		**$1,276,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$10,059,800
Oyster Issues (167 Leased Acres)	$233,800		
Real Estate Acquisition	$55,000		
Supervision and Inspection	240 days @	850 per day	$204,000
Supervision and Administration			$578,000
State Costs			
Supervision and Administration			$195,500
	Total Phase II Cost Estimate		**$11,037,000**
TOTAL ESTIMATED PROJECT FIRST COST			**$12,313,000**

Project:	Bayou Dupont Sediment Delivery System	Date:	Sep-02	Revised:	Oct-02
Computed by:	**Crawford**	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	750,000	750,000
2	Jack & Bore Hwy	160	LF	1,000	160,000
3	Jack & Bore RR	50	LF	2,000	100,000
4	Hydraulic Fill	5,200,000	CY	2.50	13,000,000
5	Jacking Pits	2	EA	18,000	36,000
6	Vegitative planting	457	Acre	3,500	1,599,500
7					

ESTIMATED CONSTRUCTION COST	**15,646,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**19,557,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I			
Federal Costs			
Engineering and Design			$1,237,000
Engineering	$1,147,000		
Geotechnical Investigation	$50,000		
Hydrologic Modeling			
Data Collection			
Cultural Resources	$10,000		
NEPA Compliance	$30,000		
Supervision and Administration		391000	$391,000.00
State Costs			
Supervision and Administration			$343,500
Easements and Land Rights			$100,000
Oyster Issues (# of Leases)	$0		
Monitoring			$36,458
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$11,458		
	Total Phase I Cost Estimate		**$2,108,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$19,557,000
Oyster Issues (# of Leased Acres)	$0		
Supervision and Inspection	320 days @	852 per day	$273,000
Supervision and Administration		391000	$391,000
State Costs			
Supervision and Administration			$343,500
	Total Phase II Cost Estimate		**$20,565,000**

TOTAL ESTIMATED PROJECT FIRST COST	**$22,673,000**

Project:	Shell Island Barrier Headland	Date:	Sep-02	Revised:	
Computed by:	Jurgensen	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	1,250,000	1,250,000
2	Western Breakwater	86,696	Tons	36	3,121,000
3	Central Breakwater	231,045	Tons	36	8,318,000
4	Eastern Breakwater	172,092	Tons	36	6,195,000
5	Geotextile	183,310	SY	6	1,100,000
6	Western Containment Dikes	17,700	LF	32	566,000
7	Eastern Containment Dikes	10,110	LF	32	324,000
8	Central Containment Dikes	9,900	LF	32	317,000
9	Containment Dike Breaching	214	CY	2.50	1,000
10	Excavation for Flotation	431,910	CY	4	1,728,000
11	Navigation Aids	46	Each	1,000	46,000
12	Lighted Navigation Aids	2	Each	5,500	11,000
13	Settlement Plates	23	Each	1,000	23,000
14	Western Marsh Creation	2,510,750	CY	3.45	8,662,000
15	Eastern & Central Marsh Creatio	4,712,948	CY	3.45	16,260,000
16	Tidal Creeks & Ponds	34,966	CY	2	70,000
17	Vegetative Plantings	1	LS	1,865,000	1,865,000

ESTIMATED CONSTRUCTION COST	**49,857,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**62,321,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs

Engineering and Design				$3,523,000
	Engineering	$2,718,000		
	Geotechnical Investigation	$350,000		
	Hydrologic Modeling	$150,000		
	Data Collection	$200,000		
	Cultural Resources	$75,000		
	NEPA Compliance	$30,000		
Supervision and Administration				935,000

* Geotechnical Investigation, Modeling, and Surveying included in Engineering Fee, but shown separately

State Costs

Supervision and Administration				$400,000
Easements and Land Rights				$166,000
	Oyster Issues (# of Leases)	$66,000		
Monitoring				$30,751
	Monitoring Plan Development	$25,000		
	Monitoring Protocal Cost *	$5,751		
			Total Phase I Cost Estimate	**$5,055,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

Dependent upon type of project.

PHASE II

Federal Costs

Estimated Construction Cost +25% Contingency					$65,952,600
	Oyster Issues (# of Leased Acres)	$3,631,600			
Supervision and Inspection		871 days @	1,704 per day		$1,484,000
Supervision and Administration					935,000

State Costs

Supervision and Administration		$400,000
	Total Phase II Cost Estimate	**$68,772,000**

TOTAL ESTIMATED PROJECT FIRST COST	**$73,827,000**

Project:	Shell Island Barrier	Date:	Sep-02	Revised:	
	Headland Restoration - Increment				
Computed by:	Jurgensen		*Project Priority List 12*		
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	1,250,000	1,250,000
2	Western Breakwater	86,696	Tons	36	3,121,000
3	Central Breakwater	231,045	Tons	36	8,318,000
4	Eastern Breakwater	172,092	Tons	36	6,195,000
5	Geotextile	183,310	SY	6	1,100,000
7	Eastern Containment Dikes	10,110	LF	32	324,000
8	Central Containment Dikes	9,900	LF	32	317,000
9	Containment Dike Breaching	103	CY	2.50	300
10	Excavation for Flotation	431,910	CY	4	1,728,000
11	Navigation Aids	46	Each	1,000	46,000
12	Lighted Navigation Aids	2	Each	5,500	11,000
13	Settlement Plates	23	Each	1,000	23,000
15	Eastern & Central Marsh Creation	4,712,948	CY	3.45	16,260,000
16	Tidal Creeks & Ponds	34,966	CY	2	70,000
17	Vegetative Plantings	1	LS	1,124,155	1,124,000

ESTIMATED CONSTRUCTION COST	**39,887,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**49,859,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs

Engineering and Design			$2,874,000
Engineering	$2,069,000		
Geotechnical Investigation	$350,000		
Hydrologic Modeling	$150,000		
Data Collection	$200,000		
Cultural Resources	$75,000		
NEPA Compliance	$30,000		
Supervision and Administration			748,000

* Geotechnical Investigation, Modeling, and Surveying included in Engineering Fee, but shown separately

State Costs

Supervision and Administration			$400,000
Easements and Land Rights			$158,000
Oyster Issues (# of Leases)	$58,000		
Monitoring			$30,751
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$5,751		
		Total Phase I Cost Estimate	**$4,211,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

Dependent upon type of project.

PHASE II

Federal Costs

Estimated Construction Cost +25% Contingency			$53,345,000
Oyster Issues (# of Leased Acres)	$3,486,000		
Supervision and Inspection	777 days @	1,704 per day	$1,324,000
Supervision and Administration			748,000

State Costs

Supervision and Administration			$400,000
		Total Phase II Cost Estimate	**$55,817,000**

TOTAL ESTIMATED PROJECT FIRST COST	**$60,028,000**

Project:	North Bully Camp HR & SP	Date: 09/16/02		Revised: 10/17/02	
Computed by:	L Broussard	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	300,000	300,000
2	Hauled Earthfill	18,927	CY	15	284,000
3	Vegetative Plantings	5,185	LF	10	52,000
4	Pile Supported Sheetpiling	270	LF	1,300	351,000
5	Bulkhead Navaids	2	Each	4,000	8,000
6	Rock Riprap	121,748	TNS	25	3,044,000
7	Rock Riprap (Str 28)	4,275	TNS	35	150,000
8	Geotextile	59,661	SY	4	239,000
9	Excavation for Flotation	135,063	CY	2	270,000
10	Permanent Daytime Navaids	19	Each	1,000	19,000
11	Settlement Plates	7	Each	1,000.00	7,000
12	Piling Barricade	50	LF	240	12,000
13	Rock Riprap (Str 24 Access)	733	TNS	26	19,000
14	Earthfill (Spoilbank Restoration Str 31)	22,100	CY	3	66,000

ESTIMATED CONSTRUCTION COST	**4,821,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**6,026,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I					
Federal Costs					
Engineering and Design					$1,483,000
	Engineering	$380,000			
	Surveying	$100,000			
	Geotechnical Investigation	$153,000			
	Hydrologic Modeling	$400,000			
	Data Collection	$400,000			
	Cultural Resources	$10,000			
	NEPA Compliance	$40,000			
Supervision and Administration (2%)		$121,000			$121,000
State Costs					
Supervision and Administration					$120,500
Easements and Land Rights					$154,000
	Oyster Issues (27 Leases)	$54,000			
Monitoring					$59,405
	Monitoring Plan Development	$25,000			
	Monitoring Protocal Cost *	$34,405			
		Total Phase I Cost Estimate			**$1,938,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II					
Federal Costs					
Estimated Construction Cost +25% Contingency					$9,730,400
	Oyster Issues (2646 Leased Acres)	$3,704,400			
Supervision and Inspection		222 days @	852 per day		$189,000
Supervision and Administration		121,000	0	0	$121,000
State Costs					
Supervision and Administration					$120,500
		Total Phase II Cost Estimate			**$10,161,000**
TOTAL ESTIMATED PROJECT FIRST COST					**$12,099,000**

Project:	Avoca Island Diversion and Land Building	Date:	06-Sep-02	Revised:	15-Oct-02
Computed by:	USACE, Chris Monnerjahn	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization & Demobilization for Structure Construction	1	LS	250,000.00	250,000
2	Care & Diversion of Water: Clearing & Grubbing	3	AC	2,500.00	7,750
3	Care & Diversion of Water: Backfill - Semi-compacted	27,400	CY	6.00	164,400
4	Care & Diversion of Water: PZ-22 Sheet Piling	94,800	SF	16.00	1,516,800
5	Care & Diversion of Water: PZ-27 Sheet Piling	53,100	SF	18.00	955,800
6	Care & Diversion of Water: Seeding & Fertilizing	3	AC	500.00	1,500
7	Care & Diversion of Water: Dewatering System	1	LS	260,000.00	260,000
8	Earthwork for Structure: Clearing & Grubbing	6	AC	2,500.00	16,000
9	Earthwork for Structure: Structural Excavation	69,000	CY	4.00	276,000
10	Earthwork for Structure: Degrading Existing Levee	20,900	CY	3.25	67,925
11	Earthwork for Structure: Backfill - Semi-compacted	10,300	CY	6.00	61,800
12	Earthwork for Structure: Backfill - Fully compacted	28,800	CY	8.00	230,400
13	Earthwork for Structure: Backfill - Select Sand	4,200	CY	10.00	42,000
14	Earthwork for Structure: 21" Riprap (dry)	890	TONS	50.00	44,500
15	Earthwork for Structure: 27" Riprap (dry)	1,000	TONS	50.00	50,000
16	Earthwork for Structure: 9" Bedding Material	250	CY	30.00	7,500
17	Earthwork for Structure: 12" Bedding Material	300	CY	30.00	9,000
18	Road Surfacing - crushed stone	315	CY	30.00	9,450
19	Foundation: PZ-22 Steel Sheet Piling	17,500	SF	21.00	367,500
20	Foundation: 14" x 14" PPC Piling	21,700	LF	30.00	651,000
21	Reinforced Concrete: Base Slab	1,800	CY	250.00	450,000
22	Reinforced Concrete: Walls	1,700	CY	400.00	680,000
23	Reinforced Concrete: Roof	720	CY	450.00	324,000
24	Unreinforced Concrete: Stabilization Slab	300	CY	100.00	30,000
25	Special Construction: Instrumentation	1	LS	20,000.00	20,000
26	Miscellaneous Metals: Embedded Metals	13,100	LBS	2.00	26,200
27	Gates & Associated Items: 11'x11' Cast Iron Sluice Gates	2	EA	275,000.00	550,000
28	Gates & Associated Items: Emergency Bulkheads	8,600	LBS	3.00	25,800
29	Gates & Associated Items: Gate Hoist Support Beam	5,800	LBS	2.00	11,600
30	New Levee: Backfill - Semi-compacted	25,300	CY	6.00	151,800
31	New Levee: Seeding & Fertilizing	2	AC	500.00	1,150
32	Electrical: Power & Lighting	1	LS	65,000.00	65,000
33	Electrical: Emergency Generator	1	LS	22,000.00	22,000
34	Mechanical: Operating Machinery	1	LS	100,000.00	100,000
35	Top Stone (650#)	17,000	TONS	25.00	425,000
36	Mob & Demob for Channel Excavation	1	LS	50,000.00	50,000
37	Dredging	300,000	CY	5.10	1,530,000

ESTIMATED CONSTRUCTION COST	**9,451,875**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**11,815,000**

(Continued on next page)

Avoca Island Diversion and Land Building (Continued from previous page)			
TOTAL ESTIMATED PROJECT COSTS			
PHASE I			
Federal Costs			
Engineering and Design			$1,548,000
Engineering (includes all geotech, surveying, modeling)	$1,418,000		
Geotechnical Investigation	$0		
Hydrologic Modeling	$0		
Data Collection	$0		
Cultural Resources	$56,000		
HTRW	$10,000		
NEPA Compliance	$64,000		
Supervision and Administration			$237,000.00
State Costs			
Supervision and Administration			$227,000
Easements and Land Rights			$60,000
Oyster Issues (# of Leases)	$0		
Monitoring			$36,458
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$11,458		
	Total Phase I Cost Estimate		**$2,108,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$11,915,000
Oyster Issues (# of Leased Acres)	$0		
Real Estate Acquisition	$100,000		
Supervision and Inspection	730 days @	850 per day	$621,000
Supervision and Administration			$561,000
State Costs			
Supervision and Administration			$227,000
	Total Phase II Cost Estimate		**$13,324,000**
TOTAL ESTIMATED PROJECT FIRST COST			**$15,432,000**

Project:	South White Lake Shoreline Protection	Date: 06-Sep-02		Revised: 15-Oct-02	
Computed by:	USACE, Chris Monnerjahn	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization & Demobilization	1	LS	50,000.00	50,000
2	Stone (650 lb max)	270,000	TON	27.00	7,290,000
3	Geotextile (300 (lb/in)	310,000	SY	4.00	1,240,000
4	Marker Plates	440	EACH	400.00	176,000
5	Navigation Signs	56	EACH	1,000.00	56,000
6	Flotation Channel	1	LS	722,500.00	722,500

ESTIMATED CONSTRUCTION COST	**9,534,500**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**11,918,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I			
Federal Costs			
Engineering and Design			$953,000
Engineering (includes geotech and surveys)	$859,000		
Geotechnical Investigation	$0		
Hydrologic Modeling	$0		
Data Collection	$0		
Cultural Resources	$17,000		
HTRW	$10,000		
NEPA Compliance	$67,000		
Supervision and Administration			$239,000.00
State Costs			
Supervision and Administration			$229,000
Easements and Land Rights			$55,000
Oyster Issues (# of Leases)	$0		
Monitoring			$27,859
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$2,859		
	Total Phase I Cost Estimate		**$1,504,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$11,943,000
Oyster Issues (# of Leased Acres)	$0		
Real Estate Acquisition	$25,000		
Supervision and Inspection	300 days @	850 per day	$255,000
Supervision and Administration			$699,000
State Costs			
Supervision and Administration			$229,000
	Total Phase II Cost Estimate		**$13,126,000**
TOTAL ESTIMATED PROJECT FIRST COST			**$14,630,000**

Project:	Ground Improvement Demonstration - MRGO	Date:	06-Sep-02	Revised:	07-Oct-02
Computed b	USACE, Greg Miller & Chris Monnerjahn		*Project Priority List 12*		
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization & Demobilization	1	LS	60,000.00	60,000
2	Ground Improvement	1	LS	500,000.00	500,000
3					0
4					0

ESTIMATED CONSTRUCTION COST	**560,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**700,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I			
Federal Costs			
Engineering and Design			$300,000
Engineering	$70,000		
Geotechnical Investigation	$100,000		
Hydrologic Modeling	$0		
Data Collection	$100,000		
Cultural Resources	Work already included and paid for by piggy backed project.		
HTRW	Work already included and paid for by piggy backed project.		
NEPA Compliance	$30,000		
Supervision and Administration			$14,000.00
State Costs			
Supervision and Administration			$14,000
Easements and Land Rights			$0
Oyster Issues (# of Leases)	$0		
Monitoring			$17,859
Monitoring Plan Development	$15,000		
Monitoring Protocal Cost *	$2,859		
		Total Phase I Cost Estimate	**$346,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$700,000
Oyster Issues (# of Leased Acres)	$0		
Supervision and Inspection	60 days @	850 per day	$51,000
Supervision and Administration			$5,000
State Costs			
Supervision and Administration			$14,000
		Total Phase II Cost Estimate	**$770,000**

TOTAL ESTIMATED PROJECT FIRST COST	**$1,116,000**

Project:	Ecological Wave Buffer Demonstration	Date:	06-Sep-02	Revised:	15-Oct-02
Computed by:	USACE, Greg Miller and Chris Monnerjahn	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization & Demobilization	1	LS	25,000.00	25,000
2	Slope Modification	1	LS	300,000.00	300,000
3	Mat prep	1	LS	100,000.00	100,000
4	Vegetation Installation	1	LS	105,000.00	105,000

ESTIMATED CONSTRUCTION COST	**530,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**663,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I			
Federal Costs			
Engineering and Design			$317,000
Engineering	$50,000		
Geotechnical Investigation	$50,000		
Hydrologic Modeling	$0		
Data Collection	$150,000		
Cultural Resources	$17,000		
HTRW	$10,000		
NEPA Compliance	$40,000		
Supervision and Administration			$14,000.00
State Costs			
Supervision and Administration			$13,500
Easements and Land Rights			$0
Oyster Issues (# of Leases)	$0		
Monitoring			$25,000
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	see O&M page of worksheet for details		
	Total Phase I Cost Estimate		**$370,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II			
Federal Costs			
Estimated Construction Cost +25% Contingency			$663,000
Oyster Issues (# of Leased Acres)	$0		
Supervision and Inspection	60 days @	850 per day	$51,000
Supervision and Administration			$3,000
State Costs			
Supervision and Administration			$13,500
	Total Phase II Cost Estimate		**$731,000**
TOTAL ESTIMATED PROJECT FIRST COST			**$1,101,000**

Project:	Freshwater Floating Marsh Creation Demonstration	Date: Sep-02	Revised:		
Computed by:	Jurgensen/Kinler	*Project Priority List 12*			
Item No.	**Work or Material**	**Quantity**	**Unit**	**Unit Cost**	**Amount**
1	Mobilization/Demobilization	1	LS	66,600	67,000
2	Flotant Mat Placement	1	LS	225,480	225,000

ESTIMATED CONSTRUCTION COST	**292,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**365,000**

TOTAL ESTIMATED PROJECT COSTS

YEAR 1			
Federal Costs			
Engineering and Design			$232,000
Engineering	$8,000		
Mat Development & Coordination	$184,100		
Cultural Resources	$10,000		
NEPA Compliance	$30,000		
Supervision and Administration			9,500
State Costs			
Supervision and Administration			$3,000
Easements and Land Rights			$5,000
Oyster Issues (# of Leases)	$0		
Monitoring			$15,000
Monitoring Plan Development	$15,000		
Monitoring Protocal Cost *	$0		
		Total Phase I Cost Estimate	**$265,000**

* See O&M sheet for each year Monitoring Costs.

YEAR 2			
Federal Costs			
Estimated Construction Cost +25% Contingency			$365,000
Oyster Issues (# of Leased Acres)	$0		
Supervision and Inspection	0 days @	852 per day	$0
Supervision and Administration (Includes Inspection)			9,500
State Costs			
Supervision and Administration			$3,000
		Total Phase II Cost Estimate	**$378,000**
TOTAL ESTIMATED PROJECT FIRST COST			**$643,000**

Project:	**Mississippi River Sediment Trap Complex Project**	**Date:** 10/08/2001	**Revised: 11/9/01**
Computed by: Miller		**Checked by:**	

Item No.	Work or Material	Quantity	Unit	Unit Cost	Amount
1	Mobilization/Demobilization	1	LS	1,250,000	1,250,000
2	Dedicated Dredging - Marsh Creation - East Side	5,866,666	CY	2.05	12,027,000
3	Dedicated Dredging - Marsh Creation - West Side	17,600,000	CY	1.26	22,176,000

ESTIMATED CONSTRUCTION COST	**35,453,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**44,316,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs

Engineering and Design		$2,658,960
Engineering	$2,658,960	
Geotechnical Investigation (included in engineering)	$0	
Hydrologic Modeling	$0	
Data Collection	$0	
Cultural Resources	$25,000	
NEPA Compliance	$50,000	
HTRW	$25,000	
Supervision and Administration (2%)		$886,320

State Costs

Supervision and Administration		$400,000
Easements and Land Rights		$688,360
Oyster Issues (# of Leases) ($2,000 each)		$0
Monitoring		$22,537
Monitoring Plan Development	$16,800	
Monitoring Protocal Cost *	$5,737	
	Total Phase I Cost Estimate	**$4,756,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.
Dependent upon type of project.

PHASE II

Federal Costs

Estimated Construction Cost +25% Contingency			$44,316,000
Oyster Issues (# of Reef Acres)			
Supervision and Inspection	920 days @	850 per day	$782,000
Supervision and Administration (2%)			$886,320

State Costs

Supervision and Administration		$400,000
	Total Phase II Cost Estimate	**$46,384,000**

TOTAL ESTIMATED PROJECT FIRST COST **$51,140,000**

Coastal Wetlands Planning, Protection, and Restoration Act

12^h Priority Project List Report

Appendix D

Economics Computational Summary For Candidate Projects

Appendix D

Economics Computational Summary For Candidate Projects

Table of Contents

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII

Hydrologic Restoration in the Swamps West of Lake Maurepas-Amite River Diversion Canal Spoil Bank Gapping

Project Construction Years:	3	Total Project Years	23
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$4,655,600	Total Fully Funded Costs	$5,833,400

Annual Charges	Present Worth	Average Annual
First Costs	$4,963,837	$437,172
Monitoring	$304,137	$26,786
O & M Costs	$137,613	$12,120
Other Costs	$7,551	$665
Total	$5,413,100	$476,700
Average Annual Habitat Units		1,878
Cost Per Habitat Unit		$254
Total Net Acres		NA

Coastal Wetlands Conservation and Restoration Plan

Hydrologic Restoration in the Swamps West of Lake Maurepas-Amite River Diversion Canal Spoil Bank Gapping

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compounc	2001							-	$0		$0
4 Compounc	2002	$185,920	$25,200	$15,960	$15,960	$665	$0	-	$0		$243,705
3 Compounc	2003	$318,720	$43,200	$27,360	$27,360	$665	$25,000	-	$0		$442,305
2 Compounc	2004	$159,360	$21,600	$13,680	$13,680	$333	$27,524	-	$0		$236,177
	TOTAL	$664,000	$90,000	$57,000	$57,000	$1,663	$52,524	$0	$0	$0	$922,187
Phase II											
4 Compounc	2002	-	$0	$0	$0	$0	$0	$0	$0	$0	$0
3 Compounc	2003	-	$0	$0	$0	$0	$0	$0	$0	$0	$0
2 Compounc	2004	-	$400,000	$38,000	$38,000	$333	$0	$60,208	$380,667	$1,522,667	$2,439,874
1 Compounc	2005	-	-	$19,000	$19,000	$665	$27,524	$30,104	$190,333	$761,333	$1,047,960
	TOTAL	$0	$400,000	$57,000	$57,000	$998	$27,524	$90,312	$571,000	$2,284,000	$3,487,834
Total First Costs		$664,000	$490,000	$114,000	$114,000	$2,660	$80,048	$90,312	$571,000	$2,284,000	$4,410,020

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2006	$27,524	$4,830	$665	-
2 Discount	2007	$27,524	$4,830	$665	-
3 Discount	2008	$27,524	$4,830	$665	-
4 Discount	2009	$27,524	$4,830	$665	-
5 Discount	2010	$27,524	$4,830	$665	-
6 Discount	2011	$27,524	$4,830	$665	-
7 Discount	2012	$27,524	$4,830	$665	-
8 Discount	2013	$27,524	$4,830	$665	-
9 Discount	2014	$27,524	$4,830	$665	-
10 Discount	2015	$27,524	$154,817	$665	-
11 Discount	2016	$27,524	$4,830	$665	-
12 Discount	2017	$27,524	$4,830	$665	-
13 Discount	2018	$27,524	$4,830	$665	-
14 Discount	2019	$27,524	$4,830	$665	-
15 Discount	2020	$27,524	$4,830	$665	-
16 Discount	2021	$27,524	$4,830	$665	-
17 Discount	2022	$27,524	$4,830	$665	-
18 Discount	2023	$27,524	$4,830	$665	-
19 Discount	2024	$27,524	$4,830	$665	-
20 Discount	2025	$0	$4,830	$665	-
	Total	$522,956	$246,587	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

Hydrologic Restoration in the Swamps West of Lake Maurepas-Amite River Diversion Canal Spoil Bank Gapping

Present Valued Costs Total Discounted Costs $5,413,138 Amortized Costs $476,742

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2002	$235,829	$31,965	$20,244	$20,244	$844	$0	$0	$0	$0	$309,126
3	1.195	2003	$380,945	$51,634	$32,702	$32,702	$795	$29,881	$0	$0	$0	$528,658
2	1.126	2004	$179,479	$24,327	$15,407	$15,407	$374	$30,999	$0	$0	$0	$265,994
		Total	$796,253	$107,926	$68,353	$68,353	$2,013	$60,880	$0	$0	$0	$1,103,778
Phase II												
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2004	$0	$450,501	$42,798	$42,798	$374	$0	$67,809	$428,726	$1,714,906	$2,747,912
1	1.061	2005	$0	$0	$20,164	$20,164	$706	$29,210	$31,948	$201,991	$807,965	$1,112,147
		Total	$0	$450,501	$62,961	$62,961	$1,080	$29,210	$99,757	$630,718	$2,522,871	$3,860,059
Total First Cost			$796,253	$558,427	$131,314	$131,314	$3,093	$90,090	$99,757	$630,718	$2,522,871	$4,963,837

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2006	$25,935	$4,551	$627	
-2	0.888	2007	$24,439	$4,289	$590	
-3	0.837	2008	$23,028	$4,041	$556	
-4	0.788	2009	$21,699	$3,808	$524	
-5	0.743	2010	$20,447	$3,588	$494	
-6	0.700	2011	$19,267	$3,381	$465	
-7	0.660	2012	$18,155	$3,186	$439	
-8	0.622	2013	$17,107	$3,002	$413	
-9	0.586	2014	$16,120	$2,829	$389	
-10	0.552	2015	$15,189	$85,436	$367	
-11	0.520	2016	$14,313	$2,512	$346	
-12	0.490	2017	$13,486	$2,367	$326	
-13	0.462	2018	$12,708	$2,230	$307	
-14	0.435	2019	$11,975	$2,101	$289	
-15	0.410	2020	$11,284	$1,980	$273	
-16	0.386	2021	$10,632	$1,866	$257	
-17	0.364	2022	$10,019	$1,758	$242	
-18	0.343	2023	$9,440	$1,657	$228	
-19	0.323	2024	$8,896	$1,561	$215	
-20	0.305	2025	$0	$1,471	$203	
		Total	$304,137	$137,613	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

Hydrologic Restoration in the Swamps West of Lake Maurepas-Amite River Diversion Canal Spoil Bank Gapping

Fully Funded Costs Total Fully Funded Costs $5,833,400 Amortized Costs $513,755

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	0.974	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.000	2002	$185,920	$25,200	$15,960	$15,960	$665	$0	$0	$0	$0	$243,705
3	1.027	2003	$327,325	$44,366	$28,099	$28,099	$683	$25,675	$0	$0	$0	$454,247
2	1.055	2004	$168,082	$22,782	$14,429	$14,429	$351	$29,030	$0	$0	$0	$249,102
		TOTAL	$681,327	$92,349	$58,487	$58,487	$1,699	$54,705	$0	$0	$0	$947,054
Phase II												
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.055	2004	$0	$421,892	$40,080	$40,080	$351	$0	$63,503	$401,500	$1,606,001	$2,573,406
1	1.083	2005	$0	$0	$20,581	$20,581	$720	$29,814	$32,609	$206,170	$824,681	$1,135,157
		TOTAL	$0	$421,892	$60,661	$60,661	$1,071	$29,814	$96,112	$607,671	$2,430,682	$3,708,563
Total Cost			$681,300	$514,200	$119,100	$119,100	$2,800	$84,500	$96,100	$607,700	$2,430,700	$4,655,600

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.112	2006	$30,619	$5,373	$740	
-2	1.142	2007	$31,446	$5,518	$760	
-3	1.180	2008	$32,484	$5,700	$785	
-4	1.219	2009	$33,556	$5,888	$811	
-5	1.259	2010	$34,663	$6,083	$837	
-6	1.301	2011	$35,807	$6,283	$865	
-7	1.344	2012	$36,988	$6,491	$894	
-8	1.388	2013	$38,209	$6,705	$923	
-9	1.434	2014	$39,470	$6,926	$954	
-10	1.481	2015	$40,772	$229,337	$985	
-11	1.530	2016	$42,118	$7,391	$1,018	
-12	1.581	2017	$43,508	$7,635	$1,051	
-13	1.633	2018	$44,944	$7,887	$1,086	
-14	1.687	2019	$46,427	$8,147	$1,122	
-15	1.742	2020	$47,959	$8,416	$1,159	
-16	1.800	2021	$49,541	$8,694	$1,197	
-17	1.859	2022	$51,176	$8,981	$1,236	
-18	1.921	2023	$52,865	$9,277	$1,277	
-19	1.984	2024	$54,610	$9,583	$1,319	
-20	2.050	2025	$0	$9,899	$1,363	
		Total	$787,200	$370,200	$20,400	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**2,284,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**2,855,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs				
Engineering and Design				$664,000
Engineering			$189,000	
Geotechnical Investigation			$35,000	
Hydrologic Modeling			$200,000	
Data Collection			$200,000	
Cultural Resources			$10,000	
NEPA Compliance			$30,000	
Supervision and Administration				$57,000
State Costs				
Supervision and Administration				$57,000
Easements and Land Rights				$90,000
Monitoring				$52,524
Monitoring Plan Development	$25,000			
Monitoring Protocal Cost *	$27,524			
Total Phase I Cost Estimate				**$921,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs				
Estimated Construction Cost +25% Contingency				$2,855,000
Lands or Oyster Issues	0	lease acres	$3,000 per acre	$400,000
Supervision and Inspection	106 days	@	$852 per day	$90,312
Supervision and Administration				$57,000
State Costs				
Supervision and Administration				$57,000
Total Phase II Cost Estimate				**$3,459,000**

TOTAL ESTIMATED PROJECT FIRST COST	**4,380,000**

O&M Data

Annual Costs

Annual Inspections	$4,830
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items	Year 3	Year 5	Year 10	Year 15
Bulkhead maintenance	$0	$0	$100,000	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
Subtotal	$0	$0	$100,000	$0
Subtotal w/ 10% contin.	**$0**	**$0**	**$110,000**	**$0**
Engineer, Design & Administrative Costs				
Engineering and Design Cost	$0	$0	$9,000	$0
Administrative Cost	$0	$0	$2,000	$0
Eng Survey 1 days @ $1,420 per day	$0	$0	$1,420	$0
Construction Inspe 30 days @ $852 per day	$0	$0	$25,567	$0
Subtotal	**$0**	**$0**	**$38,000**	**$0**
Federal S&A			$2,000	
Total	**$0**	**$0**	**$150,000**	**$0**

Annual Project Costs:

Corps Administration	$665
Monitoring	$27,524

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	12	6				25
Plan & Design End	March-05							
Const. Start	July-05							
Const. End	December-05			6	3			9

Hydrologic Restoration in the Swamps West of Lake Maurepas-Amite River Diversion Canal Spoil Bank Gapping

Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,830**
Annual Cost for Operations	**$0**
Preventive Maintenance	**$0**

Specific Intermittent Costs

Construction Items				**Year 10**
Bulkhead maintenance				$100,000
Repair Earthen Levee & Culverts				$0
Repair Freshwater Introduction Gates				$0
			Subtotal	$100,000
			Subtotal w/ 10% contingency	***$110,000***

State Costs				
Engineering and Design Cost				$9,000
Administrative Cost				$2,000
Eng Survey				
	1 days	@	$1,417 per day	$1,000
Inspection				
	30 days	@	$850 per day	$26,000
			Subtotal	***$38,000***

Federal Costs	
Administrative Cost	$2,000
Total	**$150,000**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$27,524**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-05**	*(Minimum of one year to complete this phase)*
Const. Start	**July-05**	*(Requires 4 months for contracting and advertising)*
Const. End	**December-05**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII

Lake Borgne and MRGO Shoreline Protection

Project Construction Years:	4	Total Project Years	24
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$13,489,600	Total Fully Funded Costs	$25,062,900

Annual Charges	Present Worth	Average Annual
First Costs	$13,571,469	$1,195,258
Monitoring	$30,668	$2,701
O & M Costs	$5,617,215	$494,716
Other Costs	$7,551	$665
Total	$19,226,900	$1,693,300
Average Annual Habitat Units		70
Cost Per Habitat Unit		$24,270
Total Net Acres		266

Coastal Wetlands Conservation and Restoration Plan

Lake Borgne and MRGO Shoreline Protection

Project Costs

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	Compound	2002							-	$0		$0
4	Compound	2003	$222,040	$17,920	$54,880	$54,740	$665		-	$0		$350,245
3	Compound	2004	$380,640	$30,720	$94,080	$93,840	$665	$27,859	-	$0		$627,804
2	Compound	2005	$190,320	$15,360	$47,040	$46,920	$333	$1,430	-	$0		$301,402
		TOTAL	$793,000	$64,000	$196,000	$195,500	$1,663	$29,289	$0	$0	$0	$1,279,451
Phase II												
4	Compound	2003	-	-	-	-	-	-	-	$0	$0	$0
3	Compound	2004	-	-	$0	$0	$0	-	$0	$0	$0	$0
2	Compound	2005	-	$288,800	$247,714	$83,786	$333	$1,430	$87,634	$837,482	$3,349,929	$4,897,107
1	Compound	2006	-	-	$330,286	$111,714	$665	$2,859	$116,846	$1,116,643	$4,466,571	$6,145,584
		TOTAL	$0	$288,800	$578,000	$195,500	$998	$4,289	$204,480	$1,954,125	$7,816,500	$11,042,691
Total First Costs			$793,000	$352,800	$774,000	$391,000	$2,660	$33,577	$204,480	$1,954,125	$7,816,500	$12,322,142

Year		FY	Monitoring	O&M	Corps PM	Other
1	Discount	2007	$2,859	$4,897	$665	-
2	Discount	2008	$2,859	$4,897	$665	-
3	Discount	2009	$2,859	$3,246,227	$665	-
4	Discount	2010	$2,859	$4,897	$665	-
5	Discount	2011	$2,859	$4,897	$665	-
6	Discount	2012	$2,859	$2,979,667	$665	-
7	Discount	2013	$2,859	$4,897	$665	-
8	Discount	2014	$2,859	$4,897	$665	-
9	Discount	2015	$2,859	$4,897	$665	-
10	Discount	2016	$2,859	$4,897	$665	-
11	Discount	2017	$2,859	$4,897	$665	-
12	Discount	2018	$2,859	$4,897	$665	-
13	Discount	2019	$2,859	$4,897	$665	-
14	Discount	2020	$2,859	$4,897	$665	-
15	Discount	2021	$2,859	$1,876,857	$665	-
16	Discount	2022	$2,859	$4,897	$665	-
17	Discount	2023	$2,859	$4,897	$665	-
18	Discount	2024	$2,859	$4,897	$665	-
19	Discount	2025	$0	$4,897	$665	-
20	Discount	2026	$0	$4,897	$665	-
		Total	$51,462	$8,186,000	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

Lake Borgne and MRGO Shoreline Protection

Present Valued Costs Total Discounted Costs $19,226,902 Amortized Costs $1,693,339

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2003	$281,645	$22,730	$69,612	$69,435	$844	$0	$0	$0	$0	$444,266
3	1.195	2004	$454,954	$36,718	$112,448	$112,161	$795	$33,298	$0	$0	$0	$750,373
2	1.126	2005	$214,348	$17,299	$52,979	$52,844	$374	$1,610	$0	$0	$0	$339,454
		Total	$950,947	$76,747	$235,039	$234,439	$2,013	$34,908	$0	$0	$0	$1,534,093
Phase II												
4	1.268	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2005	$0	$325,261	$278,989	$94,364	$374	$1,610	$98,698	$943,216	$3,772,862	$5,515,374
1	1.061	2006	$0	$0	$350,516	$118,557	$706	$3,034	$124,003	$1,185,037	$4,740,149	$6,522,001
		Total	$0	$325,261	$629,504	$212,921	$1,080	$4,644	$222,701	$2,128,253	$8,513,011	$12,037,375
Total First Cost			$950,947	$402,009	$864,543	$447,360	$3,093	$39,552	$222,701	$2,128,253	$8,513,011	$13,571,469

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2007	$2,694	$4,614	$627	
-2	0.888	2008	$2,539	$4,348	$590	
-3	0.837	2009	$2,392	$2,715,975	$556	
-4	0.788	2010	$2,254	$3,861	$524	
-5	0.743	2011	$2,124	$3,638	$494	
-6	0.700	2012	$2,001	$2,085,746	$465	
-7	0.660	2013	$1,886	$3,230	$439	
-8	0.622	2014	$1,777	$3,044	$413	
-9	0.586	2015	$1,674	$2,868	$389	
-10	0.552	2016	$1,578	$2,702	$367	
-11	0.520	2017	$1,487	$2,546	$346	
-12	0.490	2018	$1,401	$2,399	$326	
-13	0.462	2019	$1,320	$2,261	$307	
-14	0.435	2020	$1,244	$2,131	$289	
-15	0.410	2021	$1,172	$769,424	$273	
-16	0.386	2022	$1,104	$1,892	$257	
-17	0.364	2023	$1,041	$1,782	$242	
-18	0.343	2024	$981	$1,680	$228	
-19	0.323	2025	$0	$1,583	$215	
-20	0.305	2026	$0	$1,491	$203	
		Total	$30,668	$5,617,215	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

Lake Borgne and MRGO Shoreline Protection+C39+C78+C40

Fully Funded Costs Total Fully Funded Costs $25,062,900 Amortized Costs $2,207,323

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.027	2003	$228,035	$18,404	$56,362	$56,218	$683	$0	$0	$0	$0	$359,702
3	1.055	2004	$401,472	$32,401	$99,229	$98,976	$701	$29,384	$0	$0	$0	$662,163
2	1.083	2005	$206,156	$16,638	$50,954	$50,824	$360	$1,548	$0	$0	$0	$326,481
		TOTAL	$835,663	$67,443	$206,545	$206,018	$1,745	$30,932	$0	$0	$0	$1,348,345
Phase II												
4	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.055	2004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.083	2005	$0	$312,830	$268,326	$90,757	$360	$1,548	$94,926	$907,166	$3,628,665	$5,304,579
1	1.112	2006	$0	$0	$367,427	$124,277	$740	$3,181	$129,985	$1,242,213	$4,968,852	$6,836,675
		TOTAL	$0	$312,830	$635,753	$215,034	$1,100	$4,729	$224,911	$2,149,379	$8,597,517	$12,141,254
Total Cost			$835,700	$380,300	$842,300	$421,100	$2,800	$35,700	$224,900	$2,149,400	$8,597,500	$13,489,600

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.142	2007	$3,266	$5,595	$760	
-2	1.180	2008	$3,374	$5,779	$785	
-3	1.219	2009	$3,486	$3,957,599	$811	
-4	1.259	2010	$3,601	$6,167	$837	
-5	1.301	2011	$3,719	$6,371	$865	
-6	1.344	2012	$3,842	$4,004,253	$894	
-7	1.388	2013	$3,969	$6,798	$923	
-8	1.434	2014	$4,100	$7,022	$954	
-9	1.481	2015	$4,235	$7,254	$985	
-10	1.530	2016	$4,375	$7,494	$1,018	
-11	1.581	2017	$4,519	$7,741	$1,051	
-12	1.633	2018	$4,668	$7,996	$1,086	
-13	1.687	2019	$4,822	$8,260	$1,122	
-14	1.742	2020	$4,982	$8,533	$1,159	
-15	1.800	2021	$5,146	$3,378,220	$1,197	
-16	1.859	2022	$5,316	$9,105	$1,236	
-17	1.921	2023	$5,491	$9,406	$1,277	
-18	1.984	2024	$5,672	$9,716	$1,319	
-19	2.050	2025	$0	$10,037	$1,363	
-20	2.117	2026	$0	$10,368	$1,408	
		Total	$78,600	$11,473,700	$21,000	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**7,816,500**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**9,771,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs			
Engineering and Design			$793,000
Engineering (includes all geotech. & surveys)		$704,000	
Geotechnical Investigation		$0	
Hydrologic Modeling		$0	
Data Collection		$0	
Cultural Resources		$17,000	
HTRW		$10,000	
NEPA Compliance		$62,000	
Supervision and Administration			$196,000
State Costs			
Supervision and Administration			$195,500
Easements and Land Rights			$64,000
Monitoring			$27,859
Monitoring Plan Development	$25,000		
Monitoring Protocal Cost *	$2,859		
Total Phase I Cost Estimate			**$1,276,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$9,771,000
Lands or Oyster Issues	167	lease acres	$1,729	per acre	$288,800
Supervision and Inspection	240 days	@	$852	per day	$204,480
Supervision and Administration					$578,000
State Costs					
Supervision and Administration					$195,500
Total Phase II Cost Estimate					**$11,038,000**

TOTAL ESTIMATED PROJECT FIRST COST	**12,314,000**

O&M Data

Annual Costs

Annual Inspections	$4,897
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items	Year 3	Year 5	Year 6	Year 15
MRGO & Lake Borgne: Mob & Demob	$50,000	$0	$50,000	$50,000
MRGO: Stone (2,200 lb max)	$1,225,000	$0	$775,000	$387,500
MRGO: Extend Marker Plates	$87,000	$0	$87,000	$87,000
MRGO: Flotation Channel	$140,700	$0	$140,700	$140,700
Lake Borgne: Stone (2,200 lb max)	$750,000	$0	$1,000,000	$500,000
Lake Borgne: Extend Marker Plates	$111,000	$0	$111,000	$111,000
Lake Borgne: Flotation Channel	$192,000	$0	$192,000	$192,000
Subtotal	$2,555,700	$0	$2,355,700	$1,468,200
Subtotal w/ 10% contin.	**$2,811,000**	$0	$2,591,000	$1,615,000

Engineer, Design & Administrative Costs						Year 3	Year 5	Year 6	Year 15
Engineering and Design Cost						$186,000	$0	$173,000	$111,000
Administrative Cost						$56,000	$0	$52,000	$32,500
Eng Survey	0 days	@	$1,420	per day		$4,260	$0	$4,260	$4,260
Construction Insp	0 days	@	$852	per day		$127,800	$0	$102,240	$76,680
Subtotal						**$374,000**	**$0**	**$332,000**	**$224,000**
Federal S&A						$56,000	$0	$52,000	$32,500
					Total	**$3,241,000**	**$0**	**$2,975,000**	**$1,871,500**

Annual Project Costs:

Corps Administration	$665
Monitoring	$2,859

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	12	6				25
Plan & Design End	March-05							
Const. Start	October-05							
Const. End	May-06			6	8			14

Shoreline Protection Along Lake Borgne and MRGO
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,897**
Annual Cost for Operations	
Preventive Maintenance	

Specific Intermittent Costs

Construction Items	Quantity in Year 3	Quantity in Year 6	Quantity in Year 15	Unit Cost	Year 3	Year 6	Year 15
MRGO & Lake Borgne: Mob & Demob	1	1	1	$50,000	$50,000	$50,000	$50,000
MRGO: Stone (2,200 lb max)	49,000 tons	31,000 tons	15,500 tons	$25.00 /Ton	$1,225,000	$775,000	$387,500
MRGO: Extend Marker Plates	290 plates	290 plates	290 plates	$300.00 /Each	$87,000	$87,000	$87,000
MRGO: Flotation Channel					$140,700	$140,700	$140,700
Lake Borgne: Stone (2,200 lb max)	30,000 tons	40,000 tons	20,000 tons	$25.00 /Ton	$750,000	$1,000,000	$500,000
Lake Borgne: Extend Marker Plates	370 plates	370 plates	370 plates	$300.00 /Each	$111,000	$111,000	$111,000
Lake Borgne: Flotation Channel					$192,000	$192,000	$192,000
			Subtotal		$2,555,700	$2,355,700	$1,468,200
			Subtotal w/ 10% contingency		***$2,811,000***	***$2,591,000***	***$1,615,000***

State Costs

				Year 3	Year 6	Year 15
Engineering and Design Cost				$186,000	$173,000	$111,000
Administrative Cost				$56,000	$52,000	$32,500
Eng Survey	Surveying Duration:			3 days	3 days	3 days
	Surveying Cost:	$1,420 per day	=	$4,000	$4,000	$4,000
Inspection	Construction Inspection Duration:			150 days	120 days	90 days
	Construction Inspection Cost:	$852 per day	=	$128,000	$102,000	$77,000
	Subtotal			***$374,000***	***$331,000***	***$225,000***

Federal Costs

		Year 3	Year 6	Year 15
Administrative Cost		$56,000	$52,000	$32,500
	Total	**$3,241,000**	**$2,974,000**	**$1,872,500**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$2,859**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-05**	*(Minimum of one year to complete this phase)*
Const. Start	**October-05**	*(Requires 4 months for contracting and advertising)*
Const. End	**May-06**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII

Bayou Dupont Sediment Delivery System

Project Construction Years:	3	Total Project Years	23
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$24,231,000	Total Fully Funded Costs	$24,727,100

Annual Charges	Present Worth	Average Annual
First Costs	$24,864,280	$2,189,831
Monitoring	$126,610	$11,151
O & M Costs	$54,842	$4,830
Other Costs	$7,551	$665
Total	$25,053,300	$2,206,500
Average Annual Habitat Units		189
Cost Per Habitat Unit		$11,683
Total Net Acres		400

Coastal Wetlands Conservation and Restoration Plan

Bayou Dupont Sediment Delivery System

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compound	2001							-	$0		$0
4 Compound	2002						$0	-	$0		$0
3 Compound	2003	$666,077	$53,846	$210,538	$184,962	$665	$25,000	-	$0		$1,141,088
2 Compound	2004	$570,923	$46,154	$180,462	$158,538	$333	$11,458	-	$0		$967,867
	TOTAL	$1,237,000	$100,000	$391,000	$343,500	$998	$36,458	$0	$0	$0	$2,108,956
Phase II											
4 Compound	2002	-	$0	$0	$0	$0	$0	$0	$0	$0	$0
3 Compound	2003	-	$0	$0	$0	$0	$0	$0	$0	$0	$0
2 Compound	2004	-	$0	$167,571	$147,214	$333	$0	$116,846	$1,676,357	$6,705,429	$8,813,750
1 Compound	2005	-	-	$223,429	$196,286	$665	$11,458	$155,794	$2,235,143	$8,940,571	$11,763,346
	TOTAL	$0	$0	$391,000	$343,500	$998	$11,458	$272,640	$3,911,500	$15,646,000	$20,577,096
Total First Costs		$1,237,000	$100,000	$782,000	$687,000	$1,995	$47,916	$272,640	$3,911,500	$15,646,000	$22,686,051

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2006	$11,458	$4,830	$665	-
2 Discount	2007	$11,458	$4,830	$665	-
3 Discount	2008	$11,458	$4,830	$665	-
4 Discount	2009	$11,458	$4,830	$665	-
5 Discount	2010	$11,458	$4,830	$665	-
6 Discount	2011	$11,458	$4,830	$665	-
7 Discount	2012	$11,458	$4,830	$665	-
8 Discount	2013	$11,458	$4,830	$665	-
9 Discount	2014	$11,458	$4,830	$665	-
10 Discount	2015	$11,458	$4,830	$665	-
11 Discount	2016	$11,458	$4,830	$665	-
12 Discount	2017	$11,458	$4,830	$665	-
13 Discount	2018	$11,458	$4,830	$665	-
14 Discount	2019	$11,458	$4,830	$665	-
15 Discount	2020	$11,458	$4,830	$665	-
16 Discount	2021	$11,458	$4,830	$665	-
17 Discount	2022	$11,458	$4,830	$665	-
18 Discount	2023	$11,458	$4,830	$665	-
19 Discount	2024	$11,458	$4,830	$665	-
20 Discount	2025	$0	$4,830	$665	-
	Total	$217,702	$96,600	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

Bayou Dupont Sediment Delivery System

Present Valued Costs			Total Discounted Costs		$25,053,282					Amortized Costs		$2,206,476
Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$796,118	$64,359	$251,643	$221,072	$795	$29,881	$0	$0	$0	$1,363,868
2	1.126	2004	$643,003	$51,981	$203,245	$178,554	$374	$12,905	$0	$0	$0	$1,090,062
		Total	$1,439,121	$116,340	$454,888	$399,627	$1,169	$42,785	$0	$0	$0	$2,453,930
Phase II												
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2004	$0	$0	$188,728	$165,800	$374	$0	$131,598	$1,888,000	$7,551,999	$9,926,499
1	1.061	2005	$0	$0	$237,114	$208,308	$706	$12,160	$165,337	$2,372,045	$9,488,181	$12,483,851
		Total	$0	$0	$425,841	$374,109	$1,080	$12,160	$296,934	$4,260,045	$17,040,181	$22,410,350
Total First Cost			$1,439,121	$116,340	$880,729	$773,735	$2,250	$54,945	$296,934	$4,260,045	$17,040,181	$24,864,280

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2006	$10,797	$4,551	$627	
-2	0.888	2007	$10,174	$4,289	$590	
-3	0.837	2008	$9,586	$4,041	$556	
-4	0.788	2009	$9,033	$3,808	$524	
-5	0.743	2010	$8,512	$3,588	$494	
-6	0.700	2011	$8,021	$3,381	$465	
-7	0.660	2012	$7,558	$3,186	$439	
-8	0.622	2013	$7,121	$3,002	$413	
-9	0.586	2014	$6,710	$2,829	$389	
-10	0.552	2015	$6,323	$2,665	$367	
-11	0.520	2016	$5,958	$2,512	$346	
-12	0.490	2017	$5,614	$2,367	$326	
-13	0.462	2018	$5,290	$2,230	$307	
-14	0.435	2019	$4,985	$2,101	$289	
-15	0.410	2020	$4,697	$1,980	$273	
-16	0.386	2021	$4,426	$1,866	$257	
-17	0.364	2022	$4,171	$1,758	$242	
-18	0.343	2023	$3,930	$1,657	$228	
-19	0.323	2024	$3,703	$1,561	$215	
-20	0.305	2025	$0	$1,471	$203	
		Total	$126,610	$54,842	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

Bayou Dupont Sediment Delivery System

Fully Funded Costs Total Fully Funded Costs $24,727,100 Amortized Costs $2,177,749

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	0.974	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$684,061	$55,300	$216,223	$189,956	$683	$25,675	$0	$0	$0	$1,171,897
2	1.055	2004	$602,169	$48,680	$190,338	$167,215	$351	$12,085	$0	$0	$0	$1,020,838
		TOTAL	$1,286,230	$103,980	$406,561	$357,171	$1,034	$37,760	$0	$0	$0	$2,192,735
Phase II												
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.055	2004	$0	$0	$176,742	$155,271	$351	$0	$123,241	$1,768,102	$7,072,410	$9,296,117
1	1.083	2005	$0	$0	$242,019	$212,618	$720	$12,411	$168,757	$2,421,122	$9,684,487	$12,742,135
		TOTAL	$0	$0	$418,762	$367,889	$1,071	$12,411	$291,998	$4,189,224	$16,756,897	$22,038,252
Total Cost			$1,286,200	$104,000	$825,300	$725,100	$2,100	$50,200	$292,000	$4,189,200	$16,756,900	$24,231,000

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.112	2006	$12,746	$5,373	$740	
-2	1.142	2007	$13,091	$5,518	$760	
-3	1.180	2008	$13,523	$5,700	$785	
-4	1.219	2009	$13,969	$5,888	$811	
-5	1.259	2010	$14,430	$6,083	$837	
-6	1.301	2011	$14,906	$6,283	$865	
-7	1.344	2012	$15,398	$6,491	$894	
-8	1.388	2013	$15,906	$6,705	$923	
-9	1.434	2014	$16,431	$6,926	$954	
-10	1.481	2015	$16,973	$7,155	$985	
-11	1.530	2016	$17,533	$7,391	$1,018	
-12	1.581	2017	$18,112	$7,635	$1,051	
-13	1.633	2018	$18,710	$7,887	$1,086	
-14	1.687	2019	$19,327	$8,147	$1,122	
-15	1.742	2020	$19,965	$8,416	$1,159	
-16	1.800	2021	$20,624	$8,694	$1,197	
-17	1.859	2022	$21,304	$8,981	$1,236	
-18	1.921	2023	$22,007	$9,277	$1,277	
-19	1.984	2024	$22,734	$9,583	$1,319	
-20	2.050	2025	$0	$9,899	$1,363	
		Total	$327,700	$148,000	$20,400	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**15,646,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**19,557,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs					
Engineering and Design					$1,237,000
Engineering				$1,147,000	
Geotechnical Investigation				$50,000	
Hydrologic Modeling				$0	
Data Collection				$0	
Cultural Resources				$10,000	
NEPA Compliance				$30,000	
Supervision and Administration					$391,000
State Costs					
Supervision and Administration					$343,500
Easements and Land Rights					$100,000
Monitoring					$36,458
Monitoring Plan Developmen	$25,000				
Monitoring Protocal Cost *	$11,458				
Total Phase I Cost Estimate					**$2,108,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$19,557,000
Oyster Issues (# of Acres)	0	lease acres	$3,000	per acre	$0
Supervision and Inspection	320 days	@	$852	per day	$272,640
Supervision and Administration					$391,000
State Costs					
Supervision and Administration					$343,500
Total Phase II Cost Estimate					**$20,564,000**

TOTAL ESTIMATED PROJECT FIRST COST	**22,672,000**

O&M Data

Annual Costs

Annual Inspections	$4,830
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items	**Year 3**	**Year 5**	**Year 10**	**Year 15**
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
Subtotal	$0	$0	$0	$0
Subtotal w/ 10% contin.	**$0**	**$0**	**$0**	**$0**

Engineer, Design & Administrative Costs

Engineering and Design Cost						$0	$0	$0	$0
Administrative Cost						$0	$0	$0	$0
Eng Survey	0	days	@	$1,420	per day	$0	$0	$0	$0
Construction Inspe	0	days	@	$852	per day	$0	$0	$0	$0
Subtotal						**$0**	**$0**	**$0**	**$0**
Total						**$0**	**$0**	**$0**	**$0**

Annual Project Costs:

Corps Administration	$665
Monitoring	$11,458

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	6					13
Plan & Design End	March-04							
Const. Start	August-04							
Const. End	June-05		6	8				14

Bayou Dupont Sediment Delivery System
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,830**
Annual Cost for Operations	**$0**
Preventive Maintenance	

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$11,458**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-04**	*(Minimum of one year to complete this phase)*
Const. Start	**August-04**	*(Requires 4 months for contracting and advertising)*
Const. End	**June-05**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII
Shell Island Barrier Headland Restoration

Project Construction Years:	7	Total Project Years	27
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$84,387,400	Total Fully Funded Costs	$98,456,700

Annual Charges	Present Worth	Average Annual
First Costs	$89,070,186	$7,844,531
Monitoring	$57,623	$5,075
O & M Costs	$6,458,758	$568,831
Other Costs	$7,551	$665
Total	$95,594,100	$8,419,100
Average Annual Habitat Units		393
Cost Per Habitat Unit		$21,437
Total Net Acres		296

Coastal Wetlands Conservation and Restoration Plan

Shell Island Barrier Headland Restoration

Project Costs

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	Compound								-	$0		$0
7	Compound	2003	$795,516	$37,484	$211,129	$90,323	$665	$0	-	$0		$1,135,117
6	Compound	2004	$1,363,742	$64,258	$361,935	$154,839	$665	$25,000	-	$0		$1,970,439
5	Compound	2005	$1,363,742	$64,258	$361,935	$154,839	$665	$5,751	-	$0		$1,951,190
		TOTAL	$3,523,000	$166,000	$935,000	$400,000	$1,995	$30,751	$0	$0	$0	$5,056,746
Phase II												
4	Compound	2006	-	$3,631,600	$287,692	$123,077	$665	$5,751	$456,677	$3,835,154	$15,340,615	$23,681,231
3	Compound	2007	-	-	$287,692	$123,077	$665	$5,751	$456,677	$3,835,154	$15,340,615	$20,049,631
2	Compound	2008	-	-	$287,692	$123,077	$665	$5,751	$456,677	$3,835,154	$15,340,615	$20,049,631
1	Compound	2009	-	-	$71,923	$30,769	$665	$5,751	$114,169	$958,788	$3,835,154	$5,017,220
		TOTAL	$0	$3,631,600	$935,000	$400,000	$2,660	$23,004	$1,484,200	$12,464,250	$49,857,000	$68,797,714
Total First Costs			$3,523,000	$3,797,600	$1,870,000	$800,000	$4,655	$53,755	$1,484,200	$12,464,250	$49,857,000	$73,854,460

Year		FY	Monitoring	O&M	Corps PM	Other
1	Discount	2010	$5,751	$4,406	$665	-
2	Discount	2011	$5,751	$4,406	$665	-
3	Discount	2012	$5,751	$5,669,040	$665	-
4	Discount	2013	$5,751	$4,406	$665	-
5	Discount	2014	$5,751	$858,778	$665	-
6	Discount	2015	$5,751	$4,406	$665	-
7	Discount	2016	$5,751	$66,055	$665	-
8	Discount	2017	$5,751	$4,406	$665	-
9	Discount	2018	$5,751	$4,406	$665	-
10	Discount	2019	$5,751	$4,406	$665	-
11	Discount	2020	$5,751	$4,406	$665	-
12	Discount	2021	$5,751	$4,406	$665	-
13	Discount	2022	$5,751	$4,406	$665	-
14	Discount	2023	$5,751	$4,406	$665	-
15	Discount	2024	$5,751	$2,429,150	$665	-
16	Discount	2025	$5,751	$4,406	$665	-
17	Discount	2026	$0	$4,406	$665	-
18	Discount	2027	$0	$4,406	$665	-
19	Discount	2028	$0	$4,406	$665	-
20	Discount	2029	$0	$4,406	$665	-
		Total	$92,016	$9,093,519	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

Shell Island Barrier Headland Restoration

Present Valued Costs Total Discounted Costs $95,594,118 Amortized Costs $8,419,103

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	1.000	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	1.516	2003	$1,206,071	$56,829	$320,090	$136,937	$1,008	$0	$0	$0	$0	$1,720,935
6	1.429	2004	$1,948,222	$91,798	$517,056	$221,200	$950	$35,715	$0	$0	$0	$2,814,941
5	1.346	2005	$1,835,780	$86,500	$487,214	$208,434	$895	$7,742	$0	$0	$0	$2,626,565
		Total	$4,990,073	$235,127	$1,324,360	$566,571	$2,853	$43,456	$0	$0	$0	$7,162,440
Phase II												
4	1.268	2006	$0	$4,606,476	$364,921	$156,116	$844	$7,295	$579,268	$4,864,672	$19,458,690	$30,038,282
3	1.195	2007	$0	$0	$343,860	$147,106	$795	$6,874	$545,836	$4,583,908	$18,335,632	$23,964,011
2	1.126	2008	$0	$0	$324,014	$138,616	$749	$6,477	$514,333	$4,319,348	$17,277,392	$22,580,929
1	1.061	2009	$0	$0	$76,328	$32,654	$706	$6,103	$121,162	$1,017,514	$4,070,057	$5,324,525
		Total	$0	$4,606,476	$1,109,123	$474,491	$3,093	$26,749	$1,760,600	$14,785,443	$59,141,771	$81,907,746
Total First Cost			$4,990,073	$4,841,603	$2,433,483	$1,041,062	$5,946	$70,205	$1,760,600	$14,785,443	$59,141,771	$89,070,186

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2010	$5,419	$4,152	$627	
-2	0.888	2011	$5,106	$3,912	$590	
-3	0.837	2012	$4,812	$4,743,036	$556	
-4	0.788	2013	$4,534	$3,474	$524	
-5	0.743	2014	$4,272	$637,958	$494	
-6	0.700	2015	$4,026	$3,084	$465	
-7	0.660	2016	$3,793	$43,569	$439	
-8	0.622	2017	$3,574	$2,738	$413	
-9	0.586	2018	$3,368	$2,580	$389	
-10	0.552	2019	$3,174	$2,431	$367	
-11	0.520	2020	$2,991	$2,291	$346	
-12	0.490	2021	$2,818	$2,159	$326	
-13	0.462	2022	$2,655	$2,034	$307	
-14	0.435	2023	$2,502	$1,917	$289	
-15	0.410	2024	$2,358	$995,838	$273	
-16	0.386	2025	$2,222	$1,702	$257	
-17	0.364	2026	$0	$1,604	$242	
-18	0.343	2027	$0	$1,511	$228	
-19	0.323	2028	$0	$1,424	$215	
-20	0.305	2029	$0	$1,342	$203	
		Total	$57,623	$6,458,758	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

Shell Island Barrier Headland Restoration

Fully Funded Costs	Total Fully Funded Costs	$98,456,700	Amortized Costs	$8,671,214

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	0.000	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	1.027	2003	$816,995	$38,496	$216,830	$92,761	$683	$0	$0	$0	$0	$1,165,765
6	1.055	2004	$1,438,378	$67,775	$381,744	$163,313	$701	$26,368	$0	$0	$0	$2,078,279
5	1.083	2005	$1,477,214	$69,605	$392,051	$167,722	$720	$6,230	$0	$0	$0	$2,113,542
		TOTAL	$3,732,588	$175,876	$990,624	$423,796	$2,105	$32,598	$0	$0	$0	$5,357,586
Phase II												
4	1.112	2006	$0	$4,039,985	$320,044	$136,917	$740	$6,398	$508,032	$4,266,429	$17,065,718	$26,344,263
3	1.142	2007	$0	$0	$328,685	$140,614	$760	$6,570	$521,749	$4,381,623	$17,526,492	$22,906,493
2	1.180	2008	$0	$0	$339,532	$145,254	$785	$6,787	$538,966	$4,526,217	$18,104,866	$23,662,408
1	1.219	2009	$0	$0	$87,684	$37,512	$811	$7,011	$139,188	$1,168,895	$4,675,582	$6,116,683
		TOTAL	$0	$4,039,985	$1,075,946	$460,298	$3,095	$26,767	$1,707,935	$14,343,164	$57,372,658	$79,029,847
Total Cost			$3,732,600	$4,215,900	$2,066,600	$884,100	$5,200	$59,400	$1,707,900	$14,343,200	$57,372,700	$84,387,400

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.259	2010	$7,243	$5,549	$837	
-2	1.301	2011	$7,482	$5,732	$865	
-3	1.344	2012	$7,729	$7,618,393	$894	
-4	1.388	2013	$7,984	$6,116	$923	
-5	1.434	2014	$8,247	$1,231,503	$954	
-6	1.481	2015	$8,519	$6,527	$985	
-7	1.530	2016	$8,800	$101,079	$1,018	
-8	1.581	2017	$9,091	$6,965	$1,051	
-9	1.633	2018	$9,391	$7,194	$1,086	
-10	1.687	2019	$9,701	$7,432	$1,122	
-11	1.742	2020	$10,021	$7,677	$1,159	
-12	1.800	2021	$10,351	$7,931	$1,197	
-13	1.859	2022	$10,693	$8,192	$1,236	
-14	1.921	2023	$11,046	$8,463	$1,277	
-15	1.984	2024	$11,410	$4,819,611	$1,319	
-16	2.050	2025	$11,787	$9,030	$1,363	
-17	2.117	2026	$0	$9,328	$1,408	
-18	2.187	2027	$0	$9,636	$1,454	
-19	2.259	2028	$0	$9,954	$1,502	
-20	2.334	2029	$0	$10,283	$1,552	
		Total	$149,500	$13,896,600	$23,200	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**49,857,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**62,321,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs			
Engineering and Design			$3,523,000
Engineering		$2,718,000	
Geotechnical Investigation		$350,000	
Hydrologic Modeling		$150,000	
Data Collection		$200,000	
Cultural Resources		$75,000	
NEPA Compliance		$30,000	
Supervision and Administration			$935,000
State Costs			
Supervision and Administration			$400,000
Easements and Land Rights			$166,000
Monitoring			$30,751
Monitoring Plan Developmen	$25,000		
Monitoring Protocal Cost *	$5,751		
Total Phase I Cost Estimate			**$5,055,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$62,321,000
Oyster Issues (# of Acres)	0	lease acres	$3,000	per acre	$3,631,600
Supervision and Inspection	871 days	@	$1,704	per day	$1,484,200
Supervision and Administration					$935,000
State Costs					
Supervision and Administration					$400,000
Total Phase II Cost Estimate					**$68,772,000**

TOTAL ESTIMATED PROJECT FIRST COST	**73,827,000**

O&M Data

Annual Costs

Annual Inspections	$4,406
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs: NONE

Construction Items					**Year 3**	**Year 5**	**Year 7**	**Year 15**
Contractor Mobilization/Demobilization					$100,000	$50,000	$10,000	$100,000
Repair Rock Breakwater (25% lift)					$4,408,500	$0	$0	$0
Repair Vegetative Plantings (30% replacement)					$0	$559,500	$0	$0
Replace Navigation Signs					$0	$0	$34,000	$34,000
Repair Rock Breakwater (10% lift)					$0	$0	$0	$1,763,400
			Subtotal		$4,508,500	$609,500	$44,000	$1,897,400
			Subtotal w/ 10% contin.		***$4,959,000***	***$670,000***	***$48,000***	***$2,087,000***
Engineer, Design & Administrative Costs								
Engineering and Design Cost					$317,000	$49,000	$4,000	$141,000
Administrative Cost					$99,000	$13,500	$1,500	$41,500
Eng Survey	0 days	@	$2,841 per day		$11,364	$5,682	$2,841	$11,364
Construction Inspe	0 days	@	$1,704 per day		$178,920	$102,240	$3,408	$102,240
			Subtotal		***$606,000***	***$170,000***	***$12,000***	***$296,000***
Federal S&A					$99,000	$13,500	$1,500	$41,500
				Total	**$5,664,000**	**$853,500**	**$61,500**	**$2,424,500**

Annual Project Costs:

Corps Administration	$665
Monitoring	$5,751

Construction Schedule:

		2003	2004	2005	2006	2007	2008	2009	Total
Plan & Design Start	March-03	7	12	12					31
Plan & Design End	September-05								
Const. Start	January-06								
Const. End	December-08				12	12	12	3	39

Shell Island Barrier Headland Restoration+A144
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,406**
Annual Cost for Operations	**$0**
Preventive Maintenance	**$0**

Specific Intermittent Costs

Construction Items				**Year 3**	**Year 5**	**Year 7**	**Year 15**
Contractor Mobilization/Demobilization				$100,000	$50,000	$10,000	$100,000
Repair Rock Breakwater (25% lift)				$4,408,500			
Repair Vegetative Plantings (30% replacement)					$559,500		
Replace Navigation Signs						$34,000	$34,000
Repair Rock Breakwater (10% lift)							$1,763,400
	Subtotal			$4,508,500	$609,500	$44,000	$1,897,400
	Subtotal w/ 10% contingency			***$4,959,000***	***$670,000***	***$48,000***	***$2,087,000***
State Costs							
Engineering and Design Cost				$317,000	$49,000	$4,000	$141,000
Administrative Cost				$99,000	$13,500	$1,500	$41,500
Eng Survey							
	4 days	@	$2,841 per day	$11,000			
	2 days	@	$2,841 per day		$6,000		
	1 days	@	$2,841 per day			$3,000	
	4 days	@	$2,841 per day				$11,000
Inspection							
	105 days	@	$1,704 per day	$179,000			
	60 days	@	$1,704 per day		$102,000		
	2 days	@	$1,704 per day			$3,000	
	60 days	@	$1,704 per day				$102,000
			Subtotal	***$606,000***	***$171,000***	***$12,000***	***$296,000***
Federal Costs							
Administrative Cost				$99,000	$13,500	$1,500	$41,500
			Total	**$5,664,000**	**$854,500**	**$61,500**	**$2,424,500**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$5,751**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**September-05**	*(Minimum of one year to complete this phase)*
Const. Start	**January-06**	*(Requires 4 months for contracting and advertising)*
Const. End	**December-08**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII
Shell Island Barrier Headland Restoration - Increment

Project Construction Years:	6	Total Project Years	26
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$68,284,500	Total Fully Funded Costs	$81,916,200

Annual Charges	Present Worth	Average Annual
First Costs	$68,817,921	$6,060,887
Monitoring	$59,717	$5,259
O & M Costs	$6,458,758	$568,831
Other Costs	$7,551	$665
Total	$75,343,900	$6,635,600
Average Annual Habitat Units		336
Cost Per Habitat Unit		$19,777
Total Net Acres		223

Coastal Wetlands Conservation and Restoration Plan

Shell Island Barrier Headland Restoration C76- Increment

Project Costs

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	Compound								-	$0		$0
6	Compounc	2003	$648,968	$35,677	$168,903	$90,323	$665	$0	-	$0		$944,536
5	Compounc	2004	$1,112,516	$61,161	$289,548	$154,839	$665	$25,000	-	$0		$1,643,730
4	Compounc	2005	$1,112,516	$61,161	$289,548	$154,839	$665	$5,751	-	$0		$1,624,481
		TOTAL	$2,874,000	$158,000	$748,000	$400,000	$1,995	$30,751	$0	$0	$0	$4,212,746
Phase II												
4	Compounc	2005	-	-	-	-	-	-	-	$0	$0	$0
3	Compounc	2006	-	$3,486,000	$249,333	$133,333	$665	$5,751	$441,333	$3,323,917	$13,295,667	$20,935,999
2	Compounc	2007	-	-	$249,333	$133,333	$665	$5,751	$441,333	$3,323,917	$13,295,667	$17,449,999
1	Compounc	2008	-	-	$249,333	$133,333	$665	$5,751	$441,333	$3,323,917	$13,295,667	$17,449,999
		TOTAL	$0	$3,486,000	$748,000	$400,000	$1,995	$17,253	$1,324,000	$9,971,750	$39,887,000	$55,835,998
Total First Costs			$2,874,000	$3,644,000	$1,496,000	$800,000	$3,990	$48,004	$1,324,000	$9,971,750	$39,887,000	$60,048,744

Year		FY	Monitoring	O&M	Corps PM	Other
1	Discount	2009	$5,751	$4,406	$665	-
2	Discount	2010	$5,751	$4,406	$665	-
3	Discount	2011	$5,751	$5,669,040	$665	-
4	Discount	2012	$5,751	$4,406	$665	-
5	Discount	2013	$5,751	$858,778	$665	-
6	Discount	2014	$5,751	$4,406	$665	-
7	Discount	2015	$5,751	$66,055	$665	-
8	Discount	2016	$5,751	$4,406	$665	-
9	Discount	2017	$5,751	$4,406	$665	-
10	Discount	2018	$5,751	$4,406	$665	-
11	Discount	2019	$5,751	$4,406	$665	-
12	Discount	2020	$5,751	$4,406	$665	-
13	Discount	2021	$5,751	$4,406	$665	-
14	Discount	2022	$5,751	$4,406	$665	-
15	Discount	2023	$5,751	$2,429,150	$665	-
16	Discount	2024	$5,751	$4,406	$665	-
17	Discount	2025	$5,751	$4,406	$665	-
18	Discount	2026	$0	$4,406	$665	-
19	Discount	2027	$0	$4,406	$665	-
20	Discount	2028	$0	$4,406	$665	-
		Total	$97,767	$9,093,519	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

Shell Island Barrier Headland Restoration+C119 - Increment

Present Valued Costs Total Discounted Costs $75,343,946 Amortized Costs $6,635,643

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	1.000	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	1.429	2003	$927,106	$50,968	$241,293	$129,034	$950	$0	$0	$0	$0	$1,349,350
5	1.346	2004	$1,497,597	$82,331	$389,771	$208,434	$895	$33,653	$0	$0	$0	$2,212,681
4	1.268	2005	$1,411,163	$77,580	$367,276	$196,404	$844	$7,295	$0	$0	$0	$2,060,560
		Total	$3,835,865	$210,879	$998,339	$533,871	$2,689	$40,948	$0	$0	$0	$5,622,592
Phase II												
4	1.268	2005	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2006	$0	$4,166,587	$298,012	$159,365	$795	$6,874	$527,497	$3,972,860	$15,891,439	$25,023,428
2	1.126	2007	$0	$0	$280,812	$150,167	$749	$6,477	$497,052	$3,743,566	$14,974,265	$19,653,089
1	1.061	2008	$0	$0	$264,605	$141,500	$706	$6,103	$468,365	$3,527,507	$14,110,026	$18,518,812
		Total	$0	$4,166,587	$843,429	$451,031	$2,250	$19,454	$1,492,914	$11,243,933	$44,975,731	$63,195,329
Total First Cost			$3,835,865	$4,377,467	$1,841,768	$984,903	$4,938	$60,402	$1,492,914	$11,243,933	$44,975,731	$68,817,921

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2009	$5,419	$4,152	$627	
-2	0.888	2010	$5,106	$3,912	$590	
-3	0.837	2011	$4,812	$4,743,036	$556	
-4	0.788	2012	$4,534	$3,474	$524	
-5	0.743	2013	$4,272	$637,958	$494	
-6	0.700	2014	$4,026	$3,084	$465	
-7	0.660	2015	$3,793	$43,569	$439	
-8	0.622	2016	$3,574	$2,738	$413	
-9	0.586	2017	$3,368	$2,580	$389	
-10	0.552	2018	$3,174	$2,431	$367	
-11	0.520	2019	$2,991	$2,291	$346	
-12	0.490	2020	$2,818	$2,159	$326	
-13	0.462	2021	$2,655	$2,034	$307	
-14	0.435	2022	$2,502	$1,917	$289	
-15	0.410	2023	$2,358	$995,838	$273	
-16	0.386	2024	$2,222	$1,702	$257	
-17	0.364	2025	$2,093	$1,604	$242	
-18	0.343	2026	$0	$1,511	$228	
-19	0.323	2027	$0	$1,424	$215	
-20	0.305	2028	$0	$1,342	$203	
		Total	$59,717	$6,458,758	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

Shell Island Barrier Headland Restoration C265- Increment

Fully Funded Costs Total Fully Funded Costs $81,916,200 Amortized Costs $7,214,470

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	0.000	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	1.027	2003	$666,490	$36,641	$173,464	$92,761	$683	$0	$0	$0	$0	$970,038
5	1.055	2004	$1,173,403	$64,509	$305,395	$163,313	$701	$26,368	$0	$0	$0	$1,733,689
4	1.083	2005	$1,205,085	$66,250	$313,641	$167,722	$720	$6,230	$0	$0	$0	$1,759,648
		TOTAL	$3,044,978	$167,400	$792,499	$423,796	$2,105	$32,598	$0	$0	$0	$4,463,376
Phase II												
4	1.083	2005	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.112	2006	$0	$3,878,012	$277,372	$148,327	$740	$6,398	$490,963	$3,697,702	$14,790,808	$23,290,321
2	1.142	2007	$0	$0	$284,861	$152,332	$760	$6,570	$504,219	$3,797,540	$15,190,160	$19,936,441
1	1.180	2008	$0	$0	$294,261	$157,359	$785	$6,787	$520,858	$3,922,859	$15,691,435	$20,594,344
		TOTAL	$0	$3,878,012	$856,494	$458,018	$2,284	$19,755	$1,516,039	$11,418,101	$45,672,402	$63,821,105
Total Cost			$3,045,000	$4,045,400	$1,649,000	$881,800	$4,400	$52,400	$1,516,000	$11,418,100	$45,672,400	$68,284,500

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.219	2009	$7,011	$5,372	$811	
-2	1.259	2010	$7,243	$5,549	$837	
-3	1.301	2011	$7,482	$7,375,017	$865	
-4	1.344	2012	$7,729	$5,921	$894	
-5	1.388	2013	$7,984	$1,192,161	$923	
-6	1.434	2014	$8,247	$6,318	$954	
-7	1.481	2015	$8,519	$97,850	$985	
-8	1.530	2016	$8,800	$6,742	$1,018	
-9	1.581	2017	$9,091	$6,965	$1,051	
-10	1.633	2018	$9,391	$7,194	$1,086	
-11	1.687	2019	$9,701	$7,432	$1,122	
-12	1.742	2020	$10,021	$7,677	$1,159	
-13	1.800	2021	$10,351	$7,931	$1,197	
-14	1.859	2022	$10,693	$8,192	$1,236	
-15	1.921	2023	$11,046	$4,665,645	$1,277	
-16	1.984	2024	$11,410	$8,742	$1,319	
-17	2.050	2025	$11,787	$9,030	$1,363	
-18	2.117	2026	$0	$9,328	$1,408	
-19	2.187	2027	$0	$9,636	$1,454	
-20	2.259	2028	$0	$9,954	$1,502	
		Total	$156,500	$13,452,700	$22,500	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**39,887,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**49,859,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs			
Engineering and Design			$2,874,000
Engineering		$2,069,000	
Geotechnical Investigation		$350,000	
Hydrologic Modeling		$150,000	
Data Collection		$200,000	
Cultural Resources		$75,000	
NEPA Compliance		$30,000	
Supervision and Administration			$748,000
State Costs			
Supervision and Administration			$400,000
Easements and Land Rights			$158,000
Monitoring			$30,751
Monitoring Plan Developmen	$25,000		
Monitoring Protocal Cost *	$5,751		
Total Phase I Cost Estimate			**$4,211,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs				
Estimated Construction Cost +25% Contingency				$49,859,000
Oyster Issues (# of Acres)	0	lease acres	$3,000 per acre	$3,486,000
Supervision and Inspection	777 days	@	$1,704 per day	$1,324,000
Supervision and Administration				$748,000
State Costs				
Supervision and Administration				$400,000
Total Phase II Cost Estimate				**$55,817,000**

TOTAL ESTIMATED PROJECT FIRST COST	**60,028,000**

O&M Data

Annual Costs

Annual Inspections	$4,406
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs: NONE

Construction Items				**Year 3**	**Year 5**	**Year 7**	**Year 15**
Contractor Mobilization/Demobilization				$100,000	$50,000	$10,000	$100,000
Repair Rock Breakwater (25% lift)				$4,408,500	$0	$0	$0
Repair Vegetative Plantings (30% replacement)				$0	$559,500	$0	$0
Replace Navigation Signs				$0	$0	$34,000	$34,000
Repair Rock Breakwater (10% lift)				$0	$0	$0	$1,763,400
			Subtotal	$4,508,500	$609,500	$44,000	$1,897,400
			Subtotal w/ 10% contin.	***$4,959,000***	***$670,000***	***$48,000***	***$2,087,000***
Engineer, Design & Administrative Costs							
Engineering and Design Cost				$317,000	$49,000	$4,000	$141,000
Administrative Cost				$99,000	$13,500	$1,500	$41,500
Eng Survey	0 days	@	$2,841 per day	$11,364.00	$5,682	$2,841	$11,364
Construction Inspe	0 days	@	$1,704 per day	$178,920.00	$102,240.00	$3,408.00	$102,240.00
			Subtotal	***$606,000***	***$170,000***	***$12,000***	***$296,000***
Federal S&A				$99,000	$13,500	$1,500	$41,500
			Total	**$5,664,000**	**$853,500**	**$61,500**	**$2,424,500**

Annual Project Costs:

Corps Administration	$665
Monitoring	$5,751

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	12	12				31
Plan & Design End	September-05							
Const. Start	January-06							
Const. End	September-08				12	12	12	36

Shell Island Barrier Headland Restoration - Increment
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,406**
Annual Cost for Operations	**$0**
Preventive Maintenance	**$0**

Specific Intermittent Costs

Construction Items				**Year 3**	**Year 5**	**Year 7**	**Year 15**
Contractor Mobilization/Demobilization				$100,000	$50,000	$10,000	$100,000
Repair Rock Breakwater (25% lift)				$4,408,500			
Repair Vegetative Plantings (30% replacement)					$559,500		
Replace Navigation Signs						$34,000	$34,000
Repair Rock Breakwater (10% lift)							$1,763,400
	Subtotal			$4,508,500	$609,500	$44,000	$1,897,400
	Subtotal w/ 10% contingency			***$4,959,000***	***$670,000***	***$48,000***	***$2,087,000***
State Costs							
Engineering and Design Cost				$317,000	$49,000	$4,000	$141,000
Administrative Cost				$99,000	$13,500	$1,500	$41,500
Eng Survey							
	4 days	@	$2,841 per day	$11,000			
	2 days	@	$2,841 per day		$6,000		
	1 days	@	$2,841 per day			$3,000	
	4 days	@	$2,841 per day				$11,000
Inspection							
	105 days	@	$1,704 per day	$179,000			
	60 days	@	$1,704 per day		$102,000		
	2 days	@	$1,704 per day			$3,000	
	60 days	@	$1,704 per day				$102,000
			Subtotal	***$606,000***	***$171,000***	***$12,000***	***$296,000***
Federal Costs							
Administrative Cost				$99,000	$13,500	$1,500	$41,500
			Total	**$5,664,000**	**$854,500**	**$61,500**	**$2,424,500**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$5,751**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**September-05**	*(Minimum of one year to complete this phase)*
Const. Start	**January-06**	*(Requires 4 months for contracting and advertising)*
Const. End	**September-08**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII
North Bully Camp HR & SP

Project Construction Years:	5	Total Project Years	25
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$13,529,500	Total Fully Funded Costs	$18,468,300

Annual Charges	Present Worth	Average Annual
First Costs	$13,635,990	$1,200,940
Monitoring	$369,052	$32,503
O & M Costs	$1,474,720	$129,881
Other Costs	$7,549	$665
Total	$15,487,300	$1,364,000
Average Annual Habitat Units		233
Cost Per Habitat Unit		$5,842
Total Net Acres		125

Coastal Wetlands Conservation and Restoration Plan

North Bully Camp HR & SP

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compounc	2003	$280,568	$29,135	$22,892	$22,797	$665		-	$0		$356,057
4 Compounc	2004	$480,973	$49,946	$39,243	$39,081	$665	$0	-	$0		$609,908
3 Compounc	2005	$480,973	$49,946	$39,243	$39,081	$665	$25,000	-	$0		$634,908
2 Compounc	2006	$240,486	$24,973	$19,622	$19,541	$332	$34,405	-	$0		$339,359
	TOTAL	$1,483,000	$154,000	$121,000	$120,500	$2,327	$59,405	$0	$0	$0	$1,940,232
Phase II											
4 Compounc	2004	-	-	-	-	-	-	-	$0	$0	$0
3 Compounc	2005	-	-	$0	$0	$0	-	$0	$0	$0	$0
2 Compounc	2006	-	$3,704,400	$51,857	$51,643	$332	$0	$81,084	$516,536	$2,066,143	$6,471,995
1 Compounc	2007	-	-	$69,143	$68,857	$665	$34,405	$108,112	$688,714	$2,754,857	$3,724,753
	TOTAL	$0	$3,704,400	$121,000	$120,500	$997	$34,405	$189,196	$1,205,250	$4,821,000	$10,196,748
Total First Costs		$1,483,000	$3,858,400	$242,000	$241,000	$3,324	$93,810	$189,196	$1,205,250	$4,821,000	$12,136,980

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2008	$34,405	$4,047	$665	-
2 Discount	2009	$34,405	$4,047	$665	-
3 Discount	2010	$34,405	$4,047	$665	-
4 Discount	2011	$34,405	$4,047	$665	-
5 Discount	2012	$34,405	$914,424	$665	-
6 Discount	2013	$34,405	$4,047	$665	-
7 Discount	2014	$34,405	$4,047	$665	-
8 Discount	2015	$34,405	$4,047	$665	-
9 Discount	2016	$34,405	$4,047	$665	-
10 Discount	2017	$34,405	$902,324	$665	-
11 Discount	2018	$34,405	$4,047	$665	-
12 Discount	2019	$34,405	$4,047	$665	-
13 Discount	2020	$34,405	$4,047	$665	-
14 Discount	2021	$34,405	$4,047	$665	-
15 Discount	2022	$34,405	$630,369	$665	-
16 Discount	2023	$34,405	$4,047	$665	-
17 Discount	2024	$34,405	$4,047	$665	-
18 Discount	2025	$34,405	$4,047	$665	-
19 Discount	2026	$0	$4,047	$665	-
20 Discount	2027	$0	$4,047	$665	-
	Total	$619,290	$2,515,915	$13,297	$0

Coastal Wetlands Conservation and Restoration Plan

North Bully Camp HR & SP

Present Valued Costs Total Discounted Costs $15,487,310 Amortized Costs $1,363,988

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2003	$377,682	$39,220	$30,816	$30,688	$895	$0	$0	$0	$0	$479,300
4	1.268	2004	$610,087	$63,354	$49,778	$49,572	$843	$0	$0	$0	$0	$773,633
3	1.195	2005	$574,875	$59,697	$46,905	$46,711	$795	$29,881	$0	$0	$0	$758,864
2	1.126	2006	$270,848	$28,126	$22,099	$22,008	$374	$38,749	$0	$0	$0	$382,204
		Total	$1,833,492	$190,396	$149,597	$148,979	$2,907	$68,630	$0	$0	$0	$2,394,001
Phase II												
4	1.268	2004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2005	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2006	$0	$4,172,086	$58,404	$58,163	$374	$0	$91,321	$581,749	$2,326,997	$7,289,094
1	1.061	2007	$0	$0	$73,378	$73,075	$706	$36,512	$114,734	$730,898	$2,923,592	$3,952,894
		Total	$0	$4,172,086	$131,782	$131,237	$1,080	$36,512	$206,054	$1,312,647	$5,250,589	$11,241,988
Total First Cost			$1,833,492	$4,362,483	$281,379	$280,216	$3,987	$105,142	$206,054	$1,312,647	$5,250,589	$13,635,990

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2008	$32,419	$3,813	$626	
-2	0.888	2009	$30,548	$3,593	$590	
-3	0.837	2010	$28,785	$3,386	$556	
-4	0.788	2011	$27,124	$3,191	$524	
-5	0.743	2012	$25,558	$679,296	$494	
-6	0.700	2013	$24,083	$2,833	$465	
-7	0.660	2014	$22,693	$2,669	$439	
-8	0.622	2015	$21,384	$2,515	$413	
-9	0.586	2016	$20,149	$2,370	$389	
-10	0.552	2017	$18,986	$497,949	$367	
-11	0.520	2018	$17,891	$2,104	$346	
-12	0.490	2019	$16,858	$1,983	$326	
-13	0.462	2020	$15,885	$1,869	$307	
-14	0.435	2021	$14,968	$1,761	$289	
-15	0.410	2022	$14,104	$258,422	$273	
-16	0.386	2023	$13,290	$1,563	$257	
-17	0.364	2024	$12,523	$1,473	$242	
-18	0.343	2025	$11,801	$1,388	$228	
-19	0.323	2026	$0	$1,308	$215	
-20	0.305	2027	$0	$1,232	$202	
		Total	$369,052	$1,474,720	$7,549	$0

Coastal Wetlands Conservation and Restoration Plan

North Bully Camp HR & SP

Fully Funded Costs | Total Fully Funded Costs: $18,468,300 | Amortized Costs: $1,626,528

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.027	2003	$288,143	$29,922	$23,510	$23,413	$683	$0	$0	$0	$0	$365,670
4	1.055	2004	$507,296	$52,679	$41,391	$41,220	$701	$0	$0	$0	$0	$643,288
3	1.083	2005	$520,993	$54,102	$42,509	$42,333	$720	$27,080	$0	$0	$0	$687,737
2	1.112	2006	$267,530	$27,781	$21,828	$21,738	$370	$38,274	$0	$0	$0	$377,521
		TOTAL	$1,583,962	$164,484	$129,238	$128,704	$2,474	$65,354	$0	$0	$0	$2,074,216
Phase II												
4	1.055	2004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.083	2005	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.112	2006	$0	$4,120,972	$57,689	$57,450	$370	$0	$90,202	$574,622	$2,298,487	$7,199,792
1	1.142	2007	$0	$0	$78,995	$78,669	$760	$39,307	$123,517	$786,849	$3,147,395	$4,255,491
		TOTAL	$0	$4,120,972	$136,684	$136,119	$1,129	$39,307	$213,718	$1,361,471	$5,445,883	$11,455,283
Total Cost			$1,584,000	$4,285,500	$265,900	$264,800	$3,600	$104,700	$213,700	$1,361,500	$5,445,900	$13,529,500

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.180	2008	$40,604	$4,776	$785	
-2	1.219	2009	$41,944	$4,934	$811	
-3	1.259	2010	$43,329	$5,097	$837	
-4	1.301	2011	$44,758	$5,265	$865	
-5	1.344	2012	$46,235	$1,228,857	$893	
-6	1.388	2013	$47,761	$5,618	$923	
-7	1.434	2014	$49,337	$5,803	$953	
-8	1.481	2015	$50,966	$5,995	$985	
-9	1.530	2016	$52,647	$6,193	$1,017	
-10	1.581	2017	$54,385	$1,426,322	$1,051	
-11	1.633	2018	$56,179	$6,608	$1,086	
-12	1.687	2019	$58,033	$6,826	$1,121	
-13	1.742	2020	$59,948	$7,052	$1,158	
-14	1.800	2021	$61,927	$7,284	$1,197	
-15	1.859	2022	$63,970	$1,172,066	$1,236	
-16	1.921	2023	$66,081	$7,773	$1,277	
-17	1.984	2024	$68,262	$8,030	$1,319	
-18	2.050	2025	$70,515	$8,295	$1,363	
-19	2.117	2026	$0	$8,568	$1,408	
-20	2.187	2027	$0	$8,851	$1,454	
		Total	$976,900	$3,940,200	$21,700	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**4,821,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**6,026,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs			
Engineering and Design			$1,483,000
Engineering		$380,000	
Surveying		$100,000	
Geotechnical Investigation		$153,000	
Hydrologic Modeling		$400,000	
Data Collection		$400,000	
Cultural Resources		$10,000	
NEPA Compliance		$40,000	
Supervision and Administration			$121,000
State Costs			
Supervision and Administration			$120,500
Easements and Land Rights			$154,000
Monitoring			$59,405
Monitoring Plan Developmen	$25,000		
Monitoring Protocal Cost *	$34,405		
Total Phase I Cost Estimate			**$1,938,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$6,026,000
Oyster Issues (# of Acres)	2646	lease acres	$1,400	per acre	$3,704,400
Supervision and Inspection	222 days	@	$852	per day	$189,196
Supervision and Administration					$121,000
State Costs					
Supervision and Administration					$120,500
Total Phase II Cost Estimate					**$10,161,000**

TOTAL ESTIMATED PROJECT FIRST COST	**12,099,000**

O&M Data

Annual Costs

Annual Inspections	$4,047
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items					**Year 3**	**Year 5**	**Year 10**	**Year 15**
Contractor Mobilization/Demobilization					$0	$75,000	$75,000	$75,000
Repair Earthen Plugs & Embankments (35% replace)					$0	$99,360	$99,360	$99,360
Maintenance of "line of defense"					$0	$250,000	$250,000	$250,000
Vegetative Plantings (35% replace)					$0	$6,250	$6,250	$6,250
Repair Rock Riprap Plugs (15% lift)					$0	$271,250	$271,250	$13,019
Repair Rock Channel Liners (10ft of wingwall)					$0	$6,755	$6,755	$6,755
Repair Armored Shore Protection (10% lift)					$0	$100,000	$100,000	$100,000
Navaid Replacement					$0	$19,000	$8,000	$19,000
				Subtotal	$0	$827,615	$816,615	$569,384
				Subtotal w/ 10% contin.	**$0**	**$910,000**	**$898,000**	**$626,000**
Engineer, Design & Administrative Costs								
Engineering and Design Cost					$0	$65,000	$64,000	$46,000
Administrative Cost					$0	$18,000	$18,000	$12,500
Eng Survey	0 days	@	$1,420	per day	$0	$8,522	$8,522	$5,682
Construction Insp	0 days	@	$852	per day	$0	$49,429	$49,429	$42,612
				Subtotal	**$0**	**$141,000**	**$140,000**	**$107,000**
Federal S&A						$18,000	$18,000	$12,500
				Total	**$0**	**$1,069,000**	**$1,056,000**	**$745,500**

Annual Project Costs:

Corps Administration	$665
Monitoring	$34,405

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	12	12	6			37
Plan & Design End	March-06							
Const. Start	August-06							
Const. End	May-07				6	8		14

North Bully Camp HR & SP Project
Operation & Maintenance and Monitoring

Project Priority List 12
Date: 10/17/02

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,047**
Annual Cost for Operations	**$0**
Preventive Maintenance	**$0**

Construction Items					**Year 5**	**Year 10**	**Year 15**
Contractor Mobilization/Demobilization					$75,000	$75,000	$75,000
Repair Earthen Plugs & Embankments (35% replace)					$99,360	$99,360	$99,360
Maintenance of "line of defense"					$250,000	$250,000	$250,000
Vegetative Plantings (35% replace)					$6,250	$6,250	$6,250
Repair Rock Riprap Plugs (15% lift)					$271,250	$271,250	$13,019
Repair Rock Channel Liners (10ft of wingwall)					$6,755	$6,755	$6,755
Repair Armored Shore Protection (10% lift)					$100,000	$100,000	$100,000
Navaid Replacement					$19,000	$8,000	$19,000
				Subtotal	$827,615	$816,615	$569,384
				Subtotal w/ 10% contingen	***$910,000***	***$898,000***	***$626,000***
State Costs							
Engineering and Design Cost					$65,000	$64,000	$46,000
Administrative Cost					$18,000	$18,000	$12,500
Eng Survey							
	4 days	@	$1,417	per day			$6,000
	6 days	@	$1,417	per day	$9,000	$9,000	
Inspection							
	50 days	@	$850	per day			$43,000
	58 days	@	$850	per day	$49,000	$49,000	
				Subtotal	***$141,000***	***$140,000***	***$108,000***
Federal Costs							
Administrative Cost					$18,000	$18,000	$12,500
				Total	**$1,069,000**	**$1,056,000**	**$746,500**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$34,405**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-06**	*(Minimum of one year to complete this phase)*
Const. Start	**August-06**	*(Requires 4 months for contracting and advertising)*
Const. End	**May-07**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII

Avoca Island Diversion and Land Building (R3-2)

Project Construction Years:	6	Total Project Years	26
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$17,206,200	Total Fully Funded Costs	$19,157,200

Annual Charges	Present Worth	Average Annual
First Costs	$18,616,370	$1,639,569
Monitoring	$114,806	$10,111
O & M Costs	$556,942	$49,051
Other Costs	$7,551	$665
Total	$19,295,700	$1,699,400
Average Annual Habitat Units		132
Cost Per Habitat Unit		$12,906
Total Net Acres		143

Coastal Wetlands Conservation and Restoration Plan

Avoca Island Diversion and Land Building (R3-2)

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
7 Compound	2002							-	$0		$0
6 Compound	2003	$433,440	$16,800	$66,360	$63,560	$665		-	$0		$580,825
5 Compound	2004	$743,040	$28,800	$113,760	$108,960	$665	$36,458	-	$0		$1,031,683
4 Compound	2005	$371,520	$14,400	$56,880	$54,480	$333	$5,729	-	$0		$503,342
	TOTAL	$1,548,000	$60,000	$237,000	$227,000	$1,663	$42,187	$0	$0	$0	$2,115,850
Phase II											
4 Compound	2005	-	$100,000	$108,581	$43,935	$333	$5,729	$120,379	$457,349	$1,829,395	$2,665,701
3 Compound	2006	-	-	$217,161	$87,871	$665	11,458	$240,759	$914,698	$3,658,790	$5,131,402
2 Compound	2007	-	-	$217,161	$87,871	$665	11,458	$240,759	$914,698	$3,658,790	$5,131,402
1 Compound	2008	-	-	$18,097	$7,323	$665	11,458	$20,063	$76,225	$304,899	$438,730
	TOTAL	$0	$100,000	$561,000	$227,000	$2,328	$40,103	$621,960	$2,362,969	$9,451,875	$13,367,234
Total First Costs		$1,548,000	$160,000	$798,000	$454,000	$3,990	$82,290	$621,960	$2,362,969	$9,451,875	$15,483,084

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2009	$11,458	$9,897	$665	-
2 Discount	2010	$11,458	$9,897	$665	-
3 Discount	2011	$11,458	$9,897	$665	-
4 Discount	2012	$11,458	$9,897	$665	-
5 Discount	2013	$11,458	$102,717	$665	-
6 Discount	2014	$11,458	$9,897	$665	-
7 Discount	2015	$11,458	$9,897	$665	-
8 Discount	2016	$11,458	$9,897	$665	-
9 Discount	2017	$11,458	$9,897	$665	-
10 Discount	2018	$11,458	$621,587	$665	-
11 Discount	2019	$11,458	$9,897	$665	-
12 Discount	2020	$11,458	$9,897	$665	-
13 Discount	2021	$11,458	$9,897	$665	-
14 Discount	2022	$11,458	$9,897	$665	-
15 Discount	2023	$11,458	$102,717	$665	-
16 Discount	2024	$11,458	$9,897	$665	-
17 Discount	2025	$0	$9,897	$665	-
18 Discount	2026	$0	$9,897	$665	-
19 Discount	2027	$0	$9,897	$665	-
20 Discount	2028	$0	$9,897	$665	-
	Total	$183,328	$995,270	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

Avoca Island Diversion and Land Building (R3-2)

Present Valued Costs — Total Discounted Costs: $19,295,669 — Amortized Costs: $1,699,396

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
7	1.516	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	1.429	2003	$619,206	$24,000	$94,801	$90,801	$950	$0	$0	$0	$0	$829,758
5	1.346	2004	$1,000,232	$38,769	$153,136	$146,675	$895	$49,077	$0	$0	$0	$1,388,784
4	1.268	2005	$471,252	$18,266	$72,149	$69,105	$422	$7,267	$0	$0	$0	$638,460
		Total	$2,090,690	$81,034	$320,086	$306,580	$2,267	$56,344	$0	$0	$0	$2,857,002
Phase II												
4	1.268	2005	$0	$126,844	$137,728	$55,730	$422	$7,267	$152,694	$580,121	$2,320,483	$3,381,289
3	1.195	2006	$0	$0	$259,559	$105,026	$795	$13,695	$287,763	$1,093,278	$4,373,112	$6,133,228
2	1.126	2007	$0	$0	$244,578	$98,965	$749	$12,905	$271,155	$1,030,180	$4,120,718	$5,779,249
1	1.061	2008	$0	$0	$19,205	$7,771	$706	$12,160	$21,292	$80,894	$323,574	$465,602
		Total	$0	$126,844	$661,070	$267,492	$2,671	$46,026	$732,904	$2,784,472	$11,137,888	$15,759,368
Total First Cost			$2,090,690	$207,879	$981,157	$574,072	$4,938	$102,371	$732,904	$2,784,472	$11,137,888	$18,616,370

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2009	$10,797	$9,326	$627	
-2	0.888	2010	$10,174	$8,788	$590	
-3	0.837	2011	$9,586	$8,280	$556	
-4	0.788	2012	$9,033	$7,802	$524	
-5	0.743	2013	$8,512	$76,305	$494	
-6	0.700	2014	$8,021	$6,928	$465	
-7	0.660	2015	$7,558	$6,528	$439	
-8	0.622	2016	$7,121	$6,151	$413	
-9	0.586	2017	$6,710	$5,796	$389	
-10	0.552	2018	$6,323	$343,024	$367	
-11	0.520	2019	$5,958	$5,146	$346	
-12	0.490	2020	$5,614	$4,849	$326	
-13	0.462	2021	$5,290	$4,570	$307	
-14	0.435	2022	$4,985	$4,306	$289	
-15	0.410	2023	$4,697	$42,109	$273	
-16	0.386	2024	$4,426	$3,823	$257	
-17	0.364	2025	$0	$3,602	$242	
-18	0.343	2026	$0	$3,395	$228	
-19	0.323	2027	$0	$3,199	$215	
-20	0.305	2028	$0	$3,014	$203	
		Total	$114,806	$556,942	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

Avoca Island Diversion and Land Building (R3-2)

Fully Funded Costs Total Fully Funded Costs $19,157,200 Amortized Costs $1,687,200

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
7	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	1.027	2003	$445,143	$17,254	$68,152	$65,276	$683	$0	$0	$0	$0	$596,507
5	1.055	2004	$783,706	$30,376	$119,986	$114,923	$701	$38,453	$0	$0	$0	$1,088,146
4	1.083	2005	$402,433	$15,598	$61,613	$59,013	$360	$6,206	$0	$0	$0	$545,223
		TOTAL	$1,631,282	$63,228	$249,750	$239,212	$1,745	$44,659	$0	$0	$0	$2,229,876
Phase II												
4	1.083	2005	$0	$108,321	$117,615	$47,591	$360	$6,206	$130,396	$495,403	$1,981,613	$2,887,505
3	1.112	2006	$0	$0	$241,582	$97,752	$740	$12,746	$267,833	$1,017,558	$4,070,233	$5,708,445
2	1.142	2007	$0	$0	$248,104	$100,392	$760	$13,091	$275,064	$1,045,032	$4,180,130	$5,862,573
1	1.180	2008	$0	$0	$21,358	$8,642	$785	$13,523	$23,678	$89,960	$359,839	$517,785
		TOTAL	$0	$108,321	$628,659	$254,377	$2,645	$45,565	$696,971	$2,647,954	$10,591,815	$14,976,308
Total Cost			$1,631,300	$171,500	$878,400	$493,600	$4,400	$90,200	$697,000	$2,648,000	$10,591,800	$17,206,200

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.219	2009	$13,969	$12,066	$811	
-2	1.259	2010	$14,430	$12,464	$837	
-3	1.301	2011	$14,906	$12,875	$865	
-4	1.344	2012	$15,398	$13,300	$894	
-5	1.388	2013	$15,906	$142,592	$923	
-6	1.434	2014	$16,431	$14,192	$954	
-7	1.481	2015	$16,973	$14,661	$985	
-8	1.530	2016	$17,533	$15,145	$1,018	
-9	1.581	2017	$18,112	$15,644	$1,051	
-10	1.633	2018	$18,710	$1,014,980	$1,086	
-11	1.687	2019	$19,327	$16,694	$1,122	
-12	1.742	2020	$19,965	$17,245	$1,159	
-13	1.800	2021	$20,624	$17,814	$1,197	
-14	1.859	2022	$21,304	$18,402	$1,236	
-15	1.921	2023	$22,007	$197,288	$1,277	
-16	1.984	2024	$22,734	$19,636	$1,319	
-17	2.050	2025	$0	$20,284	$1,363	
-18	2.117	2026	$0	$20,954	$1,408	
-19	2.187	2027	$0	$21,645	$1,454	
-20	2.259	2028	$0	$22,360	$1,502	
		Total	$288,300	$1,640,200	$22,500	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**9,451,875**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**11,815,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs					
Engineering and Design					$1,548,000
Engineering (includes all geotech, surveying, modeling)				$1,418,000	
Geotechnical Investigation				$0	
Hydrologic Modeling				$0	
Data Collection				$0	
Cultural Resources				$56,000	
HTRW				$10,000	
NEPA Compliance				$64,000	
Supervision and Administration					$237,000
State Costs					
Supervision and Administration					$227,000
Easements and Land Rights					$60,000
Monitoring					$36,458
Monitoring Plan Development		$25,000			
Monitoring Protocal Cost *		$11,458			
		Total Phase I Cost Estimate			**$2,108,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$11,815,000
Lands or Oyster Issues	0	lease acres	$0 per acre		$100,000
Supervision and Inspection	730 days	@	$852 per day		$621,960
Supervision and Administration					$561,000
State Costs					
Supervision and Administration					$227,000
		Total Phase II Cost Estimate			**$13,325,000**

TOTAL ESTIMATED PROJECT FIRST COST	**15,433,000**

O&M Data

Annual Costs

Annual Inspections	$4,897
Annual Cost for Operations	$2,000
Preventive Maintenance (Included in Annual Cost for Operations)	$3,000

Specific Intermittent Costs:

Construction Items	**Year 3**	**Year 5**	**Year 10**	**Year 15**
Mob & Demob	$0	$0	$0	$0
Channel Maintenance	$0	$50,000	$50,000	$50,000
Channel Dredging	$0	$0	$382,500	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
0	$0	$0	$0	$0
Subtotal	$0	$50,000	$432,500	$50,000
Subtotal w/ 10% contin.	**$0**	$55,000	$476,000	$55,000

Engineer, Design & Administrative Costs								
Engineering and Design Cost					$0	$5,000	$36,000	$5,000
Administrative Cost					$0	$1,500	$9,500	$1,500
Eng Survey	0 days	@	$1,420	per day	$0	$4,260	$4,260	$4,260
Construction Inspe	0 days	@	$852	per day	$0	$25,560	$76,680	$25,560
Subtotal					**$0**	**$36,000**	**$126,000**	**$36,000**
Federal S&A					$0	$1,500	$9,500	$1,500
Total					**$0**	**$92,500**	**$611,500**	**$92,500**

Annual Project Costs:

Corps Administration	$665
Monitoring	$11,458

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	12	6				25
Plan & Design End	March-05							
Const. Start	October-05							
Const. End	October-07			6	12	12	1	31

Avoca Island Diversion and Land Building (R3-2)
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,897**	
Annual Cost for Operations	**$2,000**	This is only for emergency situations,
Preventive Maintenance	**$3,000**	since this is an uncontrolled diversion.

Specific Intermittent Costs

Construction Items	Quantity in Year 10	Unit Cost		Year 5	Year 10	Year 15
Channel Maintenance				$50,000	$50,000	$50,000
Channel Dredging	75,000 cy	$5.10 /cy			$382,500	
Subtotal				$50,000	$432,500	$50,000
Subtotal w/ 10% contingency				***$55,000***	***$476,000***	***$55,000***

State Costs

				Year 5	Year 10	Year 15
Engineering and Design Cost				$5,000	$36,000	$5,000
Administrative Cost				$1,500	$9,500	$1,500
Eng Survey	Surveying Duration:			3 days	3 days	3 days
	Surveying Cost:	$1,420 per day	=	$4,000	$4,000	$4,000
Inspection	Construction Inspection Duration:			30 days	90 days	30 days
	Construction Inspection Cost:	$852 per day	=	$26,000	$77,000	$26,000
	Subtotal			***$37,000***	***$127,000***	***$37,000***

Federal Costs

		Year 5	Year 10	Year 15
Administrative Cost		$1,500	$9,500	$1,500
	Total	**$93,500**	**$612,500**	**$93,500**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$11,458**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-05**	*(Minimum of one year to complete this phase)*
Const. Start	**October-05**	*(Requires 4 months for contracting and advertising)*
Const. End	**October-07**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII
South White Lake Shoreline Protection

Project Construction Years:	4	Total Project Years	24
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$16,052,400	Total Fully Funded Costs	$25,042,300

Annual Charges	Present Worth	Average Annual
First Costs	$16,064,354	$1,414,809
Monitoring	$30,668	$2,701
O & M Costs	$3,842,582	$338,421
Other Costs	$7,551	$665
Total	$19,945,200	$1,756,600
Average Annual Habitat Units		172
Cost Per Habitat Unit		$10,194
Total Net Acres		702

Coastal Wetlands Conservation and Restoration Plan

South White Lake Shoreline Protection

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compound	2002							-	$0		$0
4 Compound	2003	$266,840	$15,400	$66,920	$64,120	$665		-	$0		$413,945
3 Compound	2004	$457,440	$26,400	$114,720	$109,920	$665	$27,859	-	$0		$737,004
2 Compound	2005	$228,720	$13,200	$57,360	$54,960	$333	$1,430	-	$0		$356,002
	TOTAL	$953,000	$55,000	$239,000	$229,000	$1,663	$29,289	$0	$0	$0	$1,506,951
Phase II											
4 Compound	2003	-	-	-	-	-	-	-	$0	$0	$0
3 Compound	2004	-	-	$0	$0	$0	-	$0	$0	$0	$0
2 Compound	2005	-	$25,000	$262,125	$85,875	$333	$1,430	$95,850	$893,859	$3,575,438	$4,939,909
1 Compound	2006	-	-	$436,875	$143,125	$665	$2,859	$159,750	$1,489,766	$5,959,063	$8,192,102
	TOTAL	$0	$25,000	$699,000	$229,000	$998	$4,289	$255,600	$2,383,625	$9,534,500	$13,132,011
Total First Costs		$953,000	$80,000	$938,000	$458,000	$2,660	$33,577	$255,600	$2,383,625	$9,534,500	$14,638,962

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2007	$2,859	$4,897	$665	-
2 Discount	2008	$2,859	$4,897	$665	-
3 Discount	2009	$2,859	$4,897	$665	-
4 Discount	2010	$2,859	$4,897	$665	-
5 Discount	2011	$2,859	$3,946,687	$665	-
6 Discount	2012	$2,859	$4,897	$665	-
7 Discount	2013	$2,859	$113,057	$665	-
8 Discount	2014	$2,859	$4,897	$665	-
9 Discount	2015	$2,859	$4,897	$665	-
10 Discount	2016	$2,859	$4,897	$665	-
11 Discount	2017	$2,859	$4,897	$665	-
12 Discount	2018	$2,859	$4,897	$665	-
13 Discount	2019	$2,859	$4,897	$665	-
14 Discount	2020	$2,859	$4,897	$665	-
15 Discount	2021	$2,859	$1,925,627	$665	-
16 Discount	2022	$2,859	$4,897	$665	-
17 Discount	2023	$2,859	$4,897	$665	-
18 Discount	2024	$2,859	$4,897	$665	-
19 Discount	2025	$0	$4,897	$665	-
20 Discount	2026	$0	$4,897	$665	-
	Total	$51,462	$6,068,620	$13,300	$0

Coastal Wetlands Conservation and Restoration Plan

South White Lake Shoreline Protection

Present Valued Costs			Total Discounted Costs		$19,945,155					Amortized Costs		$1,756,597
Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2003	$338,471	$19,534	$84,884	$81,333	$844	$0	$0	$0	$0	$525,065
3	1.195	2004	$546,748	$31,554	$137,117	$131,380	$795	$33,298	$0	$0	$0	$880,893
2	1.126	2005	$257,596	$14,867	$64,602	$61,899	$374	$1,610	$0	$0	$0	$400,948
		Total	$1,142,816	$65,955	$286,603	$274,611	$2,013	$34,908	$0	$0	$0	$1,806,906
Phase II												
4	1.268	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2005	$0	$28,156	$295,219	$96,717	$374	$1,610	$107,951	$1,006,711	$4,026,842	$5,563,580
1	1.061	2006	$0	$0	$463,634	$151,891	$706	$3,034	$169,535	$1,581,014	$6,324,055	$8,693,868
		Total	$0	$28,156	$758,852	$248,608	$1,080	$4,644	$277,486	$2,587,724	$10,350,897	$14,257,448
Total First Cost			$1,142,816	$94,111	$1,045,456	$523,220	$3,093	$39,552	$277,486	$2,587,724	$10,350,897	$16,064,354

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2007	$2,694	$4,614	$627	
-2	0.888	2008	$2,539	$4,348	$590	
-3	0.837	2009	$2,392	$4,097	$556	
-4	0.788	2010	$2,254	$3,861	$524	
-5	0.743	2011	$2,124	$2,931,866	$494	
-6	0.700	2012	$2,001	$3,428	$465	
-7	0.660	2013	$1,886	$74,572	$439	
-8	0.622	2014	$1,777	$3,044	$413	
-9	0.586	2015	$1,674	$2,868	$389	
-10	0.552	2016	$1,578	$2,702	$367	
-11	0.520	2017	$1,487	$2,546	$346	
-12	0.490	2018	$1,401	$2,399	$326	
-13	0.462	2019	$1,320	$2,261	$307	
-14	0.435	2020	$1,244	$2,131	$289	
-15	0.410	2021	$1,172	$789,417	$273	
-16	0.386	2022	$1,104	$1,892	$257	
-17	0.364	2023	$1,041	$1,782	$242	
-18	0.343	2024	$981	$1,680	$228	
-19	0.323	2025	$0	$1,583	$215	
-20	0.305	2026	$0	$1,491	$203	
		Total	$30,668	$3,842,582	$7,551	$0

Coastal Wetlands Conservation and Restoration Plan

South White Lake Shoreline Protection

Fully Funded Costs Total Fully Funded Costs $25,042,300 Amortized Costs $2,205,509

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.027	2003	$274,045	$15,816	$68,727	$65,851	$683	$0	$0	$0	$0	$425,122
3	1.055	2004	$482,475	$27,845	$120,999	$115,936	$701	$29,384	$0	$0	$0	$777,339
2	1.083	2005	$247,751	$14,298	$62,133	$59,533	$360	$1,548	$0	$0	$0	$385,624
		TOTAL	$1,004,271	$57,959	$251,858	$241,320	$1,745	$30,932	$0	$0	$0	$1,588,085
Phase II												
4	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.055	2004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.083	2005	$0	$27,080	$283,936	$93,020	$360	$1,548	$103,825	$968,234	$3,872,938	$5,350,942
1	1.112	2006	$0	$0	$486,003	$159,220	$740	$3,181	$177,714	$1,657,295	$6,629,179	$9,113,331
		TOTAL	$0	$27,080	$769,939	$252,240	$1,100	$4,729	$281,540	$2,625,529	$10,502,116	$14,464,273
Total Cost			$1,004,300	$85,000	$1,021,800	$493,600	$2,800	$35,700	$281,500	$2,625,500	$10,502,100	$16,052,400

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.142	2007	$3,266	$5,595	$760	
-2	1.180	2008	$3,374	$5,779	$785	
-3	1.219	2009	$3,486	$5,970	$811	
-4	1.259	2010	$3,601	$6,167	$837	
-5	1.301	2011	$3,719	$5,134,358	$865	
-6	1.344	2012	$3,842	$6,581	$894	
-7	1.388	2013	$3,969	$156,946	$923	
-8	1.434	2014	$4,100	$7,022	$954	
-9	1.481	2015	$4,235	$7,254	$985	
-10	1.530	2016	$4,375	$7,494	$1,018	
-11	1.581	2017	$4,519	$7,741	$1,051	
-12	1.633	2018	$4,668	$7,996	$1,086	
-13	1.687	2019	$4,822	$8,260	$1,122	
-14	1.742	2020	$4,982	$8,533	$1,159	
-15	1.800	2021	$5,146	$3,466,003	$1,197	
-16	1.859	2022	$5,316	$9,105	$1,236	
-17	1.921	2023	$5,491	$9,406	$1,277	
-18	1.984	2024	$5,672	$9,716	$1,319	
-19	2.050	2025	$0	$10,037	$1,363	
-20	2.117	2026	$0	$10,368	$1,408	
		Total	$78,600	$8,890,300	$21,000	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**9,534,500**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**11,918,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs				
Engineering and Design				$953,000
Engineering (includes geotech and surveys)			$859,000	
Geotechnical Investigation			$0	
Hydrologic Modeling			$0	
Data Collection			$0	
Cultural Resources			$17,000	
HTRW			$10,000	
NEPA Compliance			$67,000	
Supervision and Administration				$239,000
State Costs				
Supervision and Administration				$229,000
Easements and Land Rights				$55,000
Monitoring				$27,859
Monitoring Plan Development	$25,000			
Monitoring Protocal Cost *	$2,859			
Total Phase I Cost Estimate				**$1,504,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs				
Estimated Construction Cost +25% Contingency				$11,918,000
Lands or Oyster Issues	0	lease acres	$0 per acre	$25,000
Supervision and Inspection	300 days	@	$852 per day	$255,600
Supervision and Administration				$699,000
State Costs				
Supervision and Administration				$229,000
Total Phase II Cost Estimate				**$13,127,000**

TOTAL ESTIMATED PROJECT FIRST COST	**14,631,000**

O&M Data

Annual Costs

Annual Inspections	$4,897
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items		Year 3	Year 5	Year 7	Year 15
Mob & Demob		$0	$50,000	$10,000	$50,000
Stone (650 lb max)		$0	$2,430,000	$0	$729,000
Extend Marker Plates		$0	$132,000	$0	$132,000
Flotation Channel		$0	$541,900	$0	$541,900
Navigation Signs		$0	$0	$56,000	$56,000
0		$0	$0	$0	$0
0		$0	$0	$0	$0
	Subtotal	$0	$3,153,900	$66,000	$1,508,900
	Subtotal w/ 10% contin.	**$0**	$3,469,000	$73,000	$1,660,000

Engineer, Design & Administrative Costs								
Engineering and Design Cost					$0	$227,000	$6,000	$114,000
Administrative Cost					$0	$69,500	$2,000	$33,000
Eng Survey	0 days	@	$1,420	per day	$0	$4,260	$0	$4,260
Construction Inspe	0 days	@	$852	per day	$0	$102,240	$25,560	$76,680
			Subtotal		**$0**	**$403,000**	**$34,000**	**$228,000**
Federal S&A					$0	$69,500	$2,000	$33,000
				Total	**$0**	**$3,941,500**	**$109,000**	**$1,921,000**

Annual Project Costs:

Corps Administration	$665
Monitoring	$2,859

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	12	6				25
Plan & Design End	March-05							
Const. Start	October-05							
Const. End	July-06			6	10			16

South White Lake Shoreline Protection
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,897**
Annual Cost for Operations	
Preventive Maintenance	

Specific Intermittent Costs

Construction Items	Quantity in Year 5	Quantity in Year 7	Quantity in Year 15	Unit Cost	Year 5	Year 7	Year 15
Mob & Demob	1	1	1	$50,000	$50,000	$10,000	$50,000
Stone (650 lb max)	90,000 tons		27,000 tons	$27.00 /Ton	$2,430,000		$729,000
Extend Marker Plates	440 plates		440 plates	$300.00 /Each	$132,000		$132,000
Flotation Channel					$541,900		$541,900
Navigation Signs		56 nav signs	56 nav signs	$1,000 /Each		$56,000	$56,000
			Subtotal		$3,153,900	$66,000	$1,508,900
			Subtotal w/ 10% contingency		***$3,469,000***	***$73,000***	***$1,660,000***

State Costs

				Year 5	Year 7	Year 15
Engineering and Design Cost				$227,000	$6,000	$114,000
Administrative Cost				$69,500	$2,000	$33,000
Eng Survey	Surveying Duration:			3 days		3 days
	Surveying Cost:	$1,420 per day	=	$4,000	$0	$4,000
Inspection	Construction Inspection Duration:			120 days	30 days	90 days
	Construction Inspection Cost:	$852 per day	=	$102,000	$26,000	$77,000
	Subtotal			***$403,000***	***$34,000***	***$228,000***

Federal Costs

		Year 5	Year 7	Year 15
Administrative Cost		$69,500	$2,000	$33,000
	Total	**$3,941,500**	**$109,000**	**$1,921,000**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$2,859**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-05**	*(Minimum of one year to complete this phase)*
Const. Start	**October-05**	*(Requires 4 months for contracting and advertising)*
Const. End	**July-06**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII
Ground Improvement Demonstration (MRGO)

Project Construction Years:	3	Total Project Years	23
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$1,191,200	Total Fully Funded Costs	$1,212,000

Annual Charges	Present Worth	Average Annual
First Costs	$1,252,912	$110,346
Monitoring	$12,002	$1,057
O & M Costs	$0	$0
Other Costs	$2,792	$246
Total	$1,267,700	$111,600
Average Annual Habitat Units		NA
Cost Per Habitat Unit		NA
Total Net Acres		NA

Coastal Wetlands Conservation and Restoration Plan

Ground Improvement Demonstration (MRGO)+C45

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compound	2001							-	$0		$0
4 Compound	2002							-	$0		$0
3 Compound	2003	$175,000	$0	$8,167	$8,167	$665	$15,000	-	$0		$206,998
2 Compound	2004	$125,000	$0	$5,833	$5,833	$333	$2,859	-	$0		$139,858
TOTAL		$300,000	$0	$14,000	$14,000	$998	$17,859	$0	$0	$0	$346,857
Phase II											
4 Compound	2002	-	-	-	-	-	-	-	$0	$0	$0
3 Compound	2003	-	-	$0	$0	$0	-	$0	$0	$0	$0
2 Compound	2004	-	$0	$2,333	$6,533	$333	$2,859	$23,856	$65,333	$261,333	$362,581
1 Compound	2005	-	-	$2,667	$7,467	$665	$2,859	$27,264	$74,667	$298,667	$414,255
TOTAL		$0	$0	$5,000	$14,000	$998	$5,718	$51,120	$140,000	$560,000	$776,836
Total First Costs		$300,000	$0	$19,000	$28,000	$1,995	$23,577	$51,120	$140,000	$560,000	$1,123,692

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2006	$2,859	$0	$665	-
2 Discount	2007	$2,859	$0	$665	-
3 Discount	2008	$2,859	$0	$665	-
4 Discount	2009	$2,859	$0	$665	-
5 Discount	2010	$2,859	$0	$665	-
6 Discount	2011	$0	$0	$0	-
7 Discount	2012	$0	$0	$0	-
8 Discount	2013	$0	$0	$0	-
9 Discount	2014	$0	$0	$0	-
10 Discount	2015	$0	$0	$0	-
11 Discount	2016	$0	$0	$0	-
12 Discount	2017	$0	$0	$0	-
13 Discount	2018	$0	$0	$0	-
14 Discount	2019	$0	$0	$0	-
15 Discount	2020	$0	$0	$0	-
16 Discount	2021	$0	$0	$0	-
17 Discount	2022	$0	$0	$0	-
18 Discount	2023	$0	$0	$0	-
19 Discount	2024	$0	$0	$0	-
20 Discount	2025	$0	$0	$0	-
Total		$14,295	$0	$3,325	$0

Coastal Wetlands Conservation and Restoration Plan

Ground Improvement Demonstration (MRGO)+C119

Present Valued Costs			Total Discounted Costs		$1,267,706					Amortized Costs		$111,649
Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$209,166	$0	$9,761	$9,761	$795	$17,929	$0	$0	$0	$247,412
2	1.126	2004	$140,781	$0	$6,570	$6,570	$374	$3,220	$0	$0	$0	$157,515
		Total	$349,947	$0	$16,331	$16,331	$1,169	$21,148	$0	$0	$0	$404,927
Phase II												
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2004	$0	$0	$2,628	$7,358	$374	$3,220	$26,868	$73,582	$294,327	$408,357
1	1.061	2005	$0	$0	$2,830	$7,924	$706	$3,034	$28,934	$79,240	$316,960	$439,628
		Total	$0	$0	$5,458	$15,282	$1,080	$6,254	$55,802	$152,822	$611,287	$847,985
Total First Cost			$349,947	$0	$21,789	$31,613	$2,250	$27,403	$55,802	$152,822	$611,287	$1,252,912

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2006	$2,694	$0	$627	
-2	0.888	2007	$2,539	$0	$590	
-3	0.837	2008	$2,392	$0	$556	
-4	0.788	2009	$2,254	$0	$524	
-5	0.743	2010	$2,124	$0	$494	
-6	0.700	2011	$0	$0	$0	
-7	0.660	2012	$0	$0	$0	
-8	0.622	2013	$0	$0	$0	
-9	0.586	2014	$0	$0	$0	
-10	0.552	2015	$0	$0	$0	
-11	0.520	2016	$0	$0	$0	
-12	0.490	2017	$0	$0	$0	
-13	0.462	2018	$0	$0	$0	
-14	0.435	2019	$0	$0	$0	
-15	0.410	2020	$0	$0	$0	
-16	0.386	2021	$0	$0	$0	
-17	0.364	2022	$0	$0	$0	
-18	0.343	2023	$0	$0	$0	
-19	0.323	2024	$0	$0	$0	
-20	0.305	2025	$0	$0	$0	
		Total	$12,002	$0	$2,792	$0

Coastal Wetlands Conservation and Restoration Plan

Ground Improvement Demonstration (MRGO)+C265

Fully Funded Costs Total Fully Funded Costs $1,212,000 Amortized Costs $106,742

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	0.974	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$179,725	$0	$8,387	$8,387	$683	$15,405	$0	$0	$0	$212,587
2	1.055	2004	$131,841	$0	$6,153	$6,153	$351	$3,015	$0	$0	$0	$147,512
		TOTAL	$311,566	$0	$14,540	$14,540	$1,034	$18,420	$0	$0	$0	$360,100
Phase II												
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.055	2004	$0	$0	$2,461	$6,891	$351	$3,015	$25,162	$68,909	$275,636	$382,425
1	1.083	2005	$0	$0	$2,889	$8,088	$720	$3,097	$29,533	$80,879	$323,518	$448,723
		TOTAL	$0	$0	$5,350	$14,979	$1,071	$6,112	$54,694	$149,788	$599,154	$831,148
Total Cost			$311,600	$0	$19,900	$29,500	$2,100	$24,500	$54,700	$149,800	$599,200	$1,191,200

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.112	2006	$3,181	$0	$740	
-2	1.142	2007	$3,266	$0	$760	
-3	1.180	2008	$3,374	$0	$785	
-4	1.219	2009	$3,486	$0	$811	
-5	1.259	2010	$3,601	$0	$837	
-6	1.301	2011	$0	$0	$0	
-7	1.344	2012	$0	$0	$0	
-8	1.388	2013	$0	$0	$0	
-9	1.434	2014	$0	$0	$0	
-10	1.481	2015	$0	$0	$0	
-11	1.530	2016	$0	$0	$0	
-12	1.581	2017	$0	$0	$0	
-13	1.633	2018	$0	$0	$0	
-14	1.687	2019	$0	$0	$0	
-15	1.742	2020	$0	$0	$0	
-16	1.800	2021	$0	$0	$0	
-17	1.859	2022	$0	$0	$0	
-18	1.921	2023	$0	$0	$0	
-19	1.984	2024	$0	$0	$0	
-20	2.050	2025	$0	$0	$0	
		Total	$16,900	$0	$3,900	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**560,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**700,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs				
Engineering and Design				$300,000
Engineering			$70,000	
Geotechnical Investigation			$100,000	
Hydrologic Modeling			$0	
Data Collection			$100,000	
Cultural Resources	Work already included and paid for by piggy backed project.			
HTRW	Work already included and paid for by piggy backed project.			
NEPA Compliance			$30,000	
Supervision and Administration				$14,000
State Costs				
Supervision and Administration				$14,000
Easements and Land Rights				$0
Monitoring				$17,859
Monitoring Plan Developmen	$15,000			
Monitoring Protocal Cost *	$2,859			
	Total Phase I Cost Estimate			**$346,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$700,000
Lands or Oyster Issues	0	lease acres		$3,000 per acre	$0
Supervision and Inspection	60 days	@		$852 per day	$51,120
Supervision and Administration					$5,000
State Costs					
Supervision and Administration					$14,000
	Total Phase II Cost Estimate				**$770,000**

TOTAL ESTIMATED PROJECT FIRST COST	**1,116,000**

O&M Data

Annual Costs

Annual Inspections	$0
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items				**Year 3**	**Year 5**	**Year 7**	**Year 15**
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
			Subtotal	$0	$0	$0	$0
			Subtotal w/ 10% contin.	**$0**	$0	$0	$0
Engineer, Design & Administrative Costs							
Engineering and Design Cost				$0	$0	$0	$0
Administrative Cost				$0	$0	$0	$0
Eng Survey	0 days	@	$1,420 per day	$0	$0	$0	$0
Construction Inspe	0 days	@	$852 per day	$0	$0	$0	$0
			Subtotal	**$0**	$0	$0	$0
			Total	**$0**	$0	$0	$0

Annual Project Costs:

Corps Administration	$665
Monitoring	$2,859

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	5					12
Plan & Design End	February-04							
Const. Start	March-04							
Const. End	June-05		7	8				15

Ground Improvement Demonstration (MRGO)
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$0**
Annual Cost for Operations	
Preventive Maintenance	

Specific Intermittent Costs

Construction Items					**Year 5**	**Year 10**	**Year 15**
				Subtotal	$0	$0	$0
				Subtotal w/ 10% contingen	***$0***	***$0***	***$0***
State Costs							
Engineering and Design Cost							
Administrative Cost					$0	$0	$0
Eng Survey							
	days	@	$1,420	per day	$0	$0	$0
Inspection							
	days	@	$852	per day	$0	$0	$0
				Subtotal	***$0***	***$0***	***$0***
Federal Costs							
Administrative Cost					$0	$0	$0
				Total	**$0**	**$0**	**$0**

Annual Project Costs:

Corps Administration	**$665**	
Monitoring	**$2,859**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**February-04**	*(Minimum of one year to complete this phase)*
Const. Start	**March-04**	*(Requires 4 months for contracting and advertising)*
Const. End	**June-05**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII

Ecological Wave Buffer Demonstration (MRGO)

Project Construction Years:	3	Total Project Years	23
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$1,231,800	Total Fully Funded Costs	$1,332,300

Annual Charges	Present Worth	Average Annual
First Costs	$1,312,477	$115,592
Monitoring	$74,269	$6,541
O & M Costs	$0	$0
Other Costs	$1,773	$156
Total	$1,388,500	$122,300
Average Annual Habitat Units		NA
Cost Per Habitat Unit		NA
Total Net Acres		NA

Coastal Wetlands Conservation and Restoration Plan

Ecological Wave Buffer Demonstration (MRGO)+C76

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compound	2001							-	$0		$0
4 Compound	2002							-	$0		$0
3 Compound	2003	$184,917	$0	$8,167	$7,875	$665	$65,000	-	$0		$266,623
2 Compound	2004	$132,083	$0	$5,833	$5,625	$333	$25,000	-	$0		$168,874
	TOTAL	$317,000	$0	$14,000	$13,500	$998	$90,000	$0	$0	$0	$435,498
Phase II											
4 Compound	2002	-	-	-	-	-	-	-	$0	$0	$0
3 Compound	2003	-	-	$0	$0	$0	-	$0	$0	$0	$0
2 Compound	2004	-	$0	$1,750	$7,875	$333	$0	$29,820	$77,292	$309,167	$426,236
1 Compound	2005	-	-	$1,250	$5,625	$665	$0	$21,300	$55,208	$220,833	$304,882
	TOTAL	$0	$0	$3,000	$13,500	$998	$0	$51,120	$132,500	$530,000	$731,118
Total First Costs		$317,000	$0	$17,000	$27,000	$1,995	$90,000	$51,120	$132,500	$530,000	$1,166,615

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2006	$25,000	$0	$665	-
2 Discount	2007	$10,000	$0	$665	-
3 Discount	2008	$50,000	$0	$665	-
4 Discount	2009	$0	$0	$0	-
5 Discount	2010	$0	$0	$0	-
6 Discount	2011	$0	$0	$0	-
7 Discount	2012	$0	$0	$0	-
8 Discount	2013	$0	$0	$0	-
9 Discount	2014	$0	$0	$0	-
10 Discount	2015	$0	$0	$0	-
11 Discount	2016	$0	$0	$0	-
12 Discount	2017	$0	$0	$0	-
13 Discount	2018	$0	$0	$0	-
14 Discount	2019	$0	$0	$0	-
15 Discount	2020	$0	$0	$0	-
16 Discount	2021	$0	$0	$0	-
17 Discount	2022	$0	$0	$0	-
18 Discount	2023	$0	$0	$0	-
19 Discount	2024	$0	$0	$0	-
20 Discount	2025	$0	$0	$0	-
	Total	$85,000	$0	$1,995	$0

Coastal Wetlands Conservation and Restoration Plan

Ecological Wave Buffer Demonstration (MRGO)+C119

Present Valued Costs			Total Discounted Costs		$1,388,519					Amortized Costs		$122,289
		Fiscal		Land	Federal	LDNR	Corps				Construction	Total First
Year		Year	E&D	Rights	S&A	S&A	Proj. Man.	Monitoring	S&I	Contingency	Costs	Cost
Phase I												
5	1.346	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$221,019	$0	$9,761	$9,412	$795	$77,690	$0	$0	$0	$318,677
2	1.126	2004	$148,759	$0	$6,570	$6,335	$374	$28,156	$0	$0	$0	$190,195
		Total	$369,778	$0	$16,331	$15,748	$1,169	$105,847	$0	$0	$0	$508,872
Phase II												
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2004	$0	$0	$1,971	$8,869	$374	$0	$33,585	$87,050	$348,199	$480,049
1	1.061	2005	$0	$0	$1,327	$5,970	$706	$0	$22,605	$58,590	$234,359	$323,556
		Total	$0	$0	$3,298	$14,839	$1,080	$0	$56,189	$145,640	$582,559	$803,604
Total First Cost			$369,778	$0	$19,628	$30,586	$2,250	$105,847	$56,189	$145,640	$582,559	$1,312,477

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2006	$23,557	$0	$627	
-2	0.888	2007	$8,879	$0	$590	
-3	0.837	2008	$41,833	$0	$556	
-4	0.788	2009	$0	$0	$0	
-5	0.743	2010	$0	$0	$0	
-6	0.700	2011	$0	$0	$0	
-7	0.660	2012	$0	$0	$0	
-8	0.622	2013	$0	$0	$0	
-9	0.586	2014	$0	$0	$0	
-10	0.552	2015	$0	$0	$0	
-11	0.520	2016	$0	$0	$0	
-12	0.490	2017	$0	$0	$0	
-13	0.462	2018	$0	$0	$0	
-14	0.435	2019	$0	$0	$0	
-15	0.410	2020	$0	$0	$0	
-16	0.386	2021	$0	$0	$0	
-17	0.364	2022	$0	$0	$0	
-18	0.343	2023	$0	$0	$0	
-19	0.323	2024	$0	$0	$0	
-20	0.305	2025	$0	$0	$0	
		Total	$74,269	$0	$1,773	$0

Coastal Wetlands Conservation and Restoration Plan

Ecological Wave Buffer Demonstration (MRGO)+C221

Fully Funded Costs Total Fully Funded Costs $1,332,300 Amortized Costs $117,337

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	0.974	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$189,909	$0	$8,387	$8,088	$683	$66,755	$0	$0	$0	$273,822
2	1.055	2004	$139,312	$0	$6,153	$5,933	$351	$26,368	$0	$0	$0	$178,116
		TOTAL	$329,222	$0	$14,540	$14,020	$1,034	$93,123	$0	$0	$0	$451,939
Phase II												
4	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.055	2004	$0	$0	$1,846	$8,306	$351	$0	$31,452	$81,522	$326,087	$449,563
1	1.083	2005	$0	$0	$1,354	$6,093	$720	$0	$23,072	$59,802	$239,208	$330,250
		TOTAL	$0	$0	$3,200	$14,399	$1,071	$0	$54,524	$141,324	$565,295	$779,813
Total Cost			$329,200	$0	$17,700	$28,400	$2,100	$93,100	$54,500	$141,300	$565,300	$1,231,800

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.112	2006	$27,811	$0	$740	
-2	1.142	2007	$11,425	$0	$760	
-3	1.180	2008	$59,010	$0	$785	
-4	1.219	2009	$0	$0	$0	
-5	1.259	2010	$0	$0	$0	
-6	1.301	2011	$0	$0	$0	
-7	1.344	2012	$0	$0	$0	
-8	1.388	2013	$0	$0	$0	
-9	1.434	2014	$0	$0	$0	
-10	1.481	2015	$0	$0	$0	
-11	1.530	2016	$0	$0	$0	
-12	1.581	2017	$0	$0	$0	
-13	1.633	2018	$0	$0	$0	
-14	1.687	2019	$0	$0	$0	
-15	1.742	2020	$0	$0	$0	
-16	1.800	2021	$0	$0	$0	
-17	1.859	2022	$0	$0	$0	
-18	1.921	2023	$0	$0	$0	
-19	1.984	2024	$0	$0	$0	
-20	2.050	2025	$0	$0	$0	
		Total	$98,200	$0	$2,300	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**530,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**663,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs					
Engineering and Design					$317,000
Engineering				$50,000	
Geotechnical Investigation				$50,000	
Hydrologic Modeling				$0	
Data Collection				$150,000	
Cultural Resources				$17,000	
HTRW				$10,000	
NEPA Compliance				$40,000	
Supervision and Administration					$14,000
State Costs					
Supervision and Administration					$13,500
Easements and Land Rights					$0
Monitoring					$25,000
Monitoring Plan Developmen	$25,000				
Monitoring Protocal Cost *	see O&M page of worksheet for details				
	Total Phase I Cost Estimate				**$370,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$663,000
Lands or Oyster Issues	0	lease acres	$3,000	per acre	$0
Supervision and Inspection	60 days	@	$852	per day	$51,120
Supervision and Administration					$3,000
State Costs					
Supervision and Administration					$13,500
	Total Phase II Cost Estimate				**$731,000**

TOTAL ESTIMATED PROJECT FIRST COST	**1,101,000**

O&M Data

Annual Costs

Annual Inspections	$0
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items				**Year 3**	**Year 5**	**Year 7**	**Year 15**
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
0				$0	$0	$0	$0
			Subtotal	$0	$0	$0	$0
			Subtotal w/ 10% contin.	**$0**	$0	$0	$0
Engineer, Design & Administrative Costs							
Engineering and Design Cost				$0	$0	$0	$0
Administrative Cost				$0	$0	$0	$0
Eng Survey	0 days	@	$1,420 per day	$0	$0	$0	$0
Construction Inspe	0 days	@	$852 per day	$0	$0	$0	$0
			Subtotal	**$0**	$0	$0	$0
			Total	**$0**	$0	$0	$0

Annual Project Costs:

Corps Administration	$665
Monitoring	$2,859

Construction Schedule:

		2003	2004	2005	2006	2007	2008	Total
Plan & Design Start	March-03	7	5					12
Plan & Design End	February-04							
Const. Start	December-04							
Const. End	February-05		7	5				12

Ecological Wave Buffer Demonstration (MRGO)+A48
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$0**
Annual Cost for Operations	
Preventive Maintenance	

Specific Intermittent Costs

Construction Items						Year 5	Year 10	Year 15
				Subtotal		$0	$0	$0
				Subtotal w/ 10% contingen		***$0***	***$0***	***$0***
State Costs								
Engineering and Design Cost								
Administrative Cost						$0	$0	$0
Eng Survey								
	days	@	$1,420	per day		$0	$0	$0
Inspection								
	days	@	$852	per day		$0	$0	$0
				Subtotal		***$0***	***$0***	***$0***
Federal Costs								
Administrative Cost						$0	$0	$0
					Total	**$0**	**$0**	**$0**

Annual Project Costs:

	Year 1	Year 2	Year 3	Year 4	Year 5
Corps Administration	**$665**	**$665**	**$665**	**$665**	**$665**
Monitoring	**$40,000**	**$25,000**	**$25,000**	**$10,000**	**$50,000**

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**February-04**	*(Minimum of one year to complete this phase)*
Const. Start	**December-04**	*(Requires 4 months for contracting and advertising)*
Const. End	**February-05**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XII

Freshwater Floating Marsh Demonstration

Project Construction Years:	2	Total Project Years	22
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$868,200	Total Fully Funded Costs	$1,080,900

Annual Charges	Present Worth	Average Annual
First Costs	$893,135	$78,660
Monitoring	$129,820	$11,433
O & M Costs	$39,288	$3,460
Other Costs	$1,773	$156
Total	$1,064,000	$93,700
Average Annual Habitat Units		NA
Cost Per Habitat Unit		NA
Total Net Acres		NA

Coastal Wetlands Conservation and Restoration Plan

Freshwater Floating Marsh Demonstation

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
0 Compound								-	$0		$0
3 Compound	2002	$0	$0	$0	$0	$0	$0	-	$0		$0
2 Compound	2003	$124,923	$2,692	$5,115	$1,615	$665	$75,560	-	$0		$210,571
1 Compound	2004	$107,077	$2,308	$4,385	$1,385	$333	$0	-	$0		$115,486
	TOTAL	$232,000	$5,000	$9,500	$3,000	$998	$75,560	$0	$0	$0	$326,058
Phase II											
4 Compound	2001	-	-	-	-	-	-	-	$0	$0	$0
3 Compound	2002	-	-	-	-	-	-		$0	$0	$0
2 Compound	2003	-	-	-	-	-	-		$0	$0	$0
1 Compound	2004	-	-	$9,500	$3,000	$333	$124,800	$0	$73,000	$292,000	$502,633
	TOTAL	$0	$0	$9,500	$3,000	$333	$124,800	$0	$73,000	$292,000	$502,633
Total First Costs		$232,000	$5,000	$19,000	$6,000	$1,330	$200,360	$0	$73,000	$292,000	$828,690

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2005	$64,800	$11,768	$665	-
2 Discount	2006	$36,960	$11,768	$665	-
3 Discount	2007	$42,960	$21,216	$665	-
4 Discount	2008	$0	$0	$0	-
5 Discount	2009	$0	$0	$0	-
6 Discount	2010	$0	$0	$0	-
7 Discount	2011	$0	$0	$0	-
8 Discount	2012	$0	$0	$0	-
9 Discount	2013	$0	$0	$0	-
10 Discount	2014	$0	$0	$0	-
11 Discount	2015	$0	$0	$0	-
12 Discount	2016	$0	$0	$0	-
13 Discount	2017	$0	$0	$0	-
14 Discount	2018	$0	$0	$0	-
15 Discount	2019	$0	$0	$0	-
16 Discount	2020	$0	$0	$0	-
17 Discount	2021	$0	$0	$0	-
18 Discount	2022	$0	$0	$0	-
19 Discount	2023	$0	$0	$0	-
20 Discount	2024	$0	$0	$0	-
	Total	$144,720	$44,752	$1,995	$0

Coastal Wetlands Conservation and Restoration Plan

Freshwater Floating Marsh Demonstration

Present Valued Costs			Total Discounted Costs		$1,064,016					Amortized Costs		$93,709
Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	1.000	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2003	$140,695	$3,032	$5,761	$1,819	$749	$85,100	$0	$0	$0	$237,156
1	1.061	2004	$113,635	$2,449	$4,653	$1,469	$353	$0	$0	$0	$0	$122,560
		Total	$254,330	$5,481	$10,414	$3,289	$1,102	$85,100	$0	$0	$0	$359,716
Phase II												
4	1.268	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.061	2004	$0	$0	$10,082	$3,184	$353	$132,444	$0	$77,471	$309,885	$533,419
		Total	$0	$0	$10,082	$3,184	$353	$132,444	$0	$77,471	$309,885	$533,419
Total First Cost			$254,330	$5,481	$20,496	$6,473	$1,455	$217,544	$0	$77,471	$309,885	$893,135

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2005	$61,060	$11,089	$627	
-2	0.888	2006	$32,817	$10,449	$590	
-3	0.837	2007	$35,943	$17,750	$556	
-4	0.788	2008	$0	$0	$0	
-5	0.743	2009	$0	$0	$0	
-6	0.700	2010	$0	$0	$0	
-7	0.660	2011	$0	$0	$0	
-8	0.622	2012	$0	$0	$0	
-9	0.586	2013	$0	$0	$0	
-10	0.552	2014	$0	$0	$0	
-11	0.520	2015	$0	$0	$0	
-12	0.490	2016	$0	$0	$0	
-13	0.462	2017	$0	$0	$0	
-14	0.435	2018	$0	$0	$0	
-15	0.410	2019	$0	$0	$0	
-16	0.386	2020	$0	$0	$0	
-17	0.364	2021	$0	$0	$0	
-18	0.343	2022	$0	$0	$0	
-19	0.323	2023	$0	$0	$0	
-20	0.305	2024	$0	$0	$0	
		Total	$129,820	$39,288	$1,773	$0

Coastal Wetlands Conservation and Restoration Plan

Freshwater Floating Marsh Demonstration

Fully Funded Costs Total Fully Funded Costs $1,080,900 Amortized Costs $95,196

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
0	0.000	0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.027	2003	$128,296	$2,765	$5,254	$1,659	$683	$77,600	$0	$0	$0	$216,257
1	1.055	2004	$112,937	$2,434	$4,625	$1,460	$351	$0	$0	$0	$0	$121,807
		TOTAL	$241,233	$5,199	$9,878	$3,119	$1,034	$77,600	$0	$0	$0	$338,063
Phase II												
4	0.974	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.000	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.027	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
1	1.055	2004	$0	$0	$10,020	$3,164	$351	$131,630	$0	$76,995	$307,981	$530,141
		TOTAL	$0	$0	$10,020	$3,164	$351	$131,630	$0	$76,995	$307,981	$530,141
Total Cost			$241,200	$5,200	$19,900	$6,300	$1,400	$209,200	$0	$77,000	$308,000	$868,200

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.083	2005	$70,192	$12,747	$720	
-2	1.112	2006	$41,116	$13,091	$740	
-3	1.142	2007	$49,081	$24,239	$760	
-4	1.180	2008	$0	$0	$0	
-5	1.219	2009	$0	$0	$0	
-6	1.259	2010	$0	$0	$0	
-7	1.301	2011	$0	$0	$0	
-8	1.344	2012	$0	$0	$0	
-9	1.388	2013	$0	$0	$0	
-10	1.434	2014	$0	$0	$0	
-11	1.481	2015	$0	$0	$0	
-12	1.530	2016	$0	$0	$0	
-13	1.581	2017	$0	$0	$0	
-14	1.633	2018	$0	$0	$0	
-15	1.687	2019	$0	$0	$0	
-16	1.742	2020	$0	$0	$0	
-17	1.800	2021	$0	$0	$0	
-18	1.859	2022	$0	$0	$0	
-19	1.921	2023	$0	$0	$0	
-20	1.984	2024	$0	$0	$0	
		Total	$160,400	$50,100	$2,200	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**292,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**365,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs				
Engineering and Design				$232,000
Engineering			$8,000	
Mat Development & Coordination			$184,100	
Cultural Resources			$10,000	
NEPA Compliance			$30,000	
#REF!	#REF!			
Supervision and Administration				$9,500
State Costs				
Supervision and Administration				$3,000
Easements and Land Rights				$5,000
Monitoring				$15,000
Monitoring Plan Developmen	$15,000			
Monitoring Protocal Cost *	$0			
	Total Phase I Cost Estimate			**$265,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$365,000
Oyster Issues (# of Acres)	0	lease acres	$3,000	per acre	$0
Supervision and Inspection	0 days	@	$1,704	per day	$0
Supervision and Administration					$9,500
State Costs					
Supervision and Administration					$3,000
	Total Phase II Cost Estimate				**$378,000**

TOTAL ESTIMATED PROJECT FIRST COST	**643,000**

O&M Data

Annual Costs

Annual Inspections	$0
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs: NONE

Construction Items					**Year 3**	**Year 4**	**Year 5**
Mat Repair (including Mobilization)					$8,880	$8,880	$16,560
0					$0	$0	$0
				Subtotal	$8,880	$8,880	$16,560
				Subtotal w/ 10% contin.	***$10,000***	***$10,000***	***$18,000***
Engineer, Design & Administrative Costs							
Engineering and Design Cost					$1,000	$1,000	$2,000
Administrative Cost					$500	$500	$500
Eng Survey	0 days	@	$1,420 per day		$0	$0	$0
Construction Inspe	0 days	@	$852 per day		$0	$0	$0
				Subtotal	***$2,000***	***$2,000***	***$3,000***
Federal S&A					$500	$500	$500
				Total	**$12,500**	**$12,500**	**$21,500**

Annual Project Costs:

Corps Administration	$665
Monitoring	$60,560

Construction Schedule:

		2003	2004	2005	2006	2007	Total
Plan & Design Start	March-03	7	6				13
Plan & Design End	March-04						
Const. Start	April-04						
Const. End	May-04		6				6

Freshwater Floating Marsh Demonstration
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$0**
Annual Cost for Operations	**$0**
Preventive Maintenance	**$0**

Specific Intermittent Costs

Construction Items					Year 3	Year 4	Year 5
Mat Repair (including Mobilization)					$8,880	$8,880	$16,560
	Subtotal				$8,880	$8,880	$16,560
	Subtotal w/ 10% contingency				***$10,000***	***$10,000***	***$18,000***
State Costs							
Engineering and Design Cost					$1,000	$1,000	$2,000
Administrative Cost					$500	$500	$500
Eng Survey							
	0 days	@	$2,841	per day	$0	$0	$0
Inspection							
	0 days	@	$1,704	per day	$0	$0	$0
			Subtotal		***$2,000***	***$2,000***	***$3,000***
Federal Costs							
Administrative Cost					$500	$500	$500
			Total		**$12,500**	**$12,500**	**$21,500**

Annual Project Costs:

	Year 1	Year 2	Year 3	Year 4	Year 5
Corps Administration	$665	$665	$665	$665	$665
Monitoring	**$60,560**	**$124,800**	**$64,800**	**$36,960**	**$42,960**

Construction Schedule:

Planning & Design Start	**March-03**	
Planning & Design End	**March-04**	*(Minimum of one year to complete this phase)*
Const. Start	**April-04**	*(Requires 4 months for contracting and advertising)*
Const. End	**May-04**	

Coastal Wetlands Conservation and Restoration Plan Priority Project List XI

Mississippi River Sediment Trap Complex Project

Project Construction Years:	4	Total Project Years	24
Interest Rate	6.125%	Amortization Factor	0.088071
Fully Funded First Costs	$56,595,500	Total Fully Funded Costs	$700,538,600

Annual Charges	Present Worth	Average Annual
First Costs	$56,948,062	$5,015,492
Monitoring	$63,393	$5,583
O & M Costs	$209,113,856	$18,416,939
Other Costs	$7,530	$663
Total	$266,132,800	$23,438,700
Average Annual Habitat Units		4,840
Cost Per Habitat Unit		$4,842
Total Net Acres		

Coastal Wetlands Conservation and Restoration Plan

Mississippi River Sediment Trap Complex Project

Project Costs

Year	Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I											
5 Compound	2001							-	$0		$0
4 Compound	2002	$772,520	$192,741	$248,170	$112,000	$663	$0	-	$0		$1,326,094
3 Compound	2003	$1,324,320	$330,413	$425,434	$192,000	$663	$16,800	-	$0		$2,289,630
2 Compound	2004	$662,160	$165,206	$212,717	$96,000	$332	$5,737	-	$0		$1,142,152
	TOTAL	$2,759,000	$688,360	$886,320	$400,000	$1,658	$22,537	$0	$0	$0	$4,757,875
Phase II											
4 Compound	2002	-	-	-	-	-	-	-	$0	$0	$0
3 Compound	2003	-	-	-	-	-	-	-	$0	$0	$0
2 Compound	2004	-	$0	$590,880	$266,667	$332	-	$521,428	$5,908,833	$23,635,333	$30,923,473
1 Compound	2005	-	-	$295,440	$133,333	$663	$5,737	$260,714	$2,954,417	$11,817,667	$15,467,971
	TOTAL	$0	$0	$886,320	$400,000	$995	$5,737	$782,142	$8,863,250	$35,453,000	$46,391,444
Total First Costs		$2,759,000	$688,360	$1,772,640	$800,000	$2,653	$28,274	$782,142	$8,863,250	$35,453,000	$51,149,319

Year	FY	Monitoring	O&M	Corps PM	Other
1 Discount	2006	$5,737	$6,240	$663	-
2 Discount	2007	$5,737	$17,991,140	$663	-
3 Discount	2008	$5,737	$17,991,140	$663	-
4 Discount	2009	$5,737	$17,991,140	$663	-
5 Discount	2010	$5,737	$17,991,140	$663	-
6 Discount	2011	$5,737	$17,991,140	$663	-
7 Discount	2012	$5,737	$17,991,140	$663	-
8 Discount	2013	$5,737	$21,714,640	$663	-
9 Discount	2014	$5,737	$21,714,640	$663	-
10 Discount	2015	$5,737	$21,714,640	$663	-
11 Discount	2016	$5,737	$21,714,640	$663	-
12 Discount	2017	$5,737	$21,714,640	$663	-
13 Discount	2018	$5,737	$21,714,640	$663	-
14 Discount	2019	$5,737	$21,714,640	$663	-
15 Discount	2020	$5,737	$21,714,640	$663	-
16 Discount	2021	$5,737	$21,714,640	$663	-
17 Discount	2022	$5,737	$21,714,640	$663	-
18 Discount	2023	$5,737	$21,714,640	$663	-
19 Discount	2024	$5,737	$21,967,640	$663	-
20 Discount	2025	$0	$22,094,140	$663	-
	Total	$109,003	$390,875,907	$13,264	$0

Coastal Wetlands Conservation and Restoration Plan

Mississippi River Sediment Trap Complex Project

Present Valued Costs — Total Discounted Costs $266,132,842 — Amortized Costs $23,438,678

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.346	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.268	2002	$979,897	$244,481	$314,789	$142,066	$841	$0	$0	$0	$0	$1,682,074
3	1.195	2003	$1,582,873	$394,921	$508,493	$229,485	$793	$20,080	$0	$0	$0	$2,736,644
2	1.126	2004	$745,759	$186,064	$239,573	$108,120	$373	$6,461	$0	$0	$0	$1,286,350
		Total	$3,308,529	$825,465	$1,062,854	$479,671	$2,007	$26,541	$0	$0	$0	$5,705,068
Phase II												
4	1.268	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.195	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.126	2004	$0	$0	$665,480	$300,334	$373	$0	$587,259	$6,654,833	$26,619,331	$34,827,610
1	1.061	2005	$0	$0	$313,536	$141,500	$704	$6,088	$276,683	$3,135,375	$12,541,499	$16,415,384
		Total	$0	$0	$979,015	$441,834	$1,077	$6,088	$863,942	$9,790,207	$39,160,830	$51,242,994
Total First Cost			$3,308,529	$825,465	$2,041,870	$921,504	$3,085	$32,630	$863,942	$9,790,207	$39,160,830	$56,948,062

Year		FY	Monitoring	O&M	Corps PM	Other
-1	0.942	2006	$5,406	$5,880	$625	
-2	0.888	2007	$5,094	$15,974,353	$589	
-3	0.837	2008	$4,800	$15,052,394	$555	
-4	0.788	2009	$4,523	$14,183,646	$523	
-5	0.743	2010	$4,262	$13,365,037	$493	
-6	0.700	2011	$4,016	$12,593,675	$464	
-7	0.660	2012	$3,784	$11,866,831	$437	
-8	0.622	2013	$3,566	$13,496,185	$412	
-9	0.586	2014	$3,360	$12,717,253	$388	
-10	0.552	2015	$3,166	$11,983,277	$366	
-11	0.520	2016	$2,983	$11,291,663	$345	
-12	0.490	2017	$2,811	$10,639,965	$325	
-13	0.462	2018	$2,649	$10,025,880	$306	
-14	0.435	2019	$2,496	$9,447,237	$289	
-15	0.410	2020	$2,352	$8,901,990	$272	
-16	0.386	2021	$2,216	$8,388,212	$256	
-17	0.364	2022	$2,088	$7,904,087	$241	
-18	0.343	2023	$1,968	$7,447,902	$227	
-19	0.323	2024	$1,854	$7,099,815	$214	
-20	0.305	2025	$0	$6,728,574	$202	
		Total	$63,393	$209,113,856	$7,530	$0

Coastal Wetlands Conservation and Restoration Plan
Mississippi River Sediment Trap Complex Project

Fully Funded Costs Total Fully Funded Costs $700,538,600 Amortized Costs $61,697,377

Year		Fiscal Year	E&D	Land Rights	Federal S&A	LDNR S&A	Corps Proj. Man.	Monitoring	S&I	Contingency	Construction Costs	Total First Cost
Phase I												
5	1.000	2001	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	1.032	2002	$797,241	$198,909	$256,111	$115,584	$684	$0	$0	$0	$0	$1,368,529
3	1.065	2003	$1,410,433	$351,898	$453,097	$204,485	$706	$17,892	$0	$0	$0	$2,438,510
2	1.099	2004	$727,783	$181,579	$233,798	$105,514	$364	$6,306	$0	$0	$0	$1,255,344
		TOTAL	$2,935,456	$732,385	$943,006	$425,583	$1,755	$24,198	$0	$0	$0	$5,062,384
Phase II												
4	1.032	2002	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	1.065	2003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	1.099	2004	$0	$0	$649,439	$293,095	$364	$0	$573,104	$6,494,427	$25,977,708	$33,988,137
1	1.134	2005	$0	$0	$335,111	$151,237	$752	$6,507	$295,722	$3,351,124	$13,404,497	$17,544,950
		TOTAL	$0	$0	$984,550	$444,331	$1,117	$6,507	$868,826	$9,845,551	$39,382,205	$51,533,087
Total Cost			$2,935,500	$732,400	$1,927,600	$869,900	$2,900	$30,700	$868,800	$9,845,600	$39,382,200	$56,595,500

Year		FY	Monitoring	O&M	Corps PM	Other
-1	1.171	2006	$6,716	$7,304	$776	
-2	1.208	2007	$6,930	$21,733,861	$801	
-3	1.247	2008	$7,152	$22,429,344	$827	
-4	1.287	2009	$7,381	$23,147,083	$853	
-5	1.328	2010	$7,617	$23,887,790	$881	
-6	1.370	2011	$7,861	$24,652,199	$909	
-7	1.414	2012	$8,113	$25,441,069	$938	
-8	1.459	2013	$8,372	$31,689,035	$968	
-9	1.506	2014	$8,640	$32,703,084	$999	
-10	1.554	2015	$8,917	$33,749,582	$1,031	
-11	1.604	2016	$9,202	$34,829,569	$1,064	
-12	1.655	2017	$9,496	$35,944,115	$1,098	
-13	1.708	2018	$9,800	$37,094,327	$1,133	
-14	1.763	2019	$10,114	$38,281,345	$1,169	
-15	1.819	2020	$10,438	$39,506,348	$1,207	
-16	1.878	2021	$10,772	$40,770,552	$1,245	
-17	1.938	2022	$11,116	$42,075,209	$1,285	
-18	2.000	2023	$11,472	$43,421,616	$1,326	
-19	2.064	2024	$11,839	$45,333,207	$1,369	
-20	2.130	2025	$0	$47,053,274	$1,412	
		Total	$171,900	$643,749,900	$21,300	$0

E&D and Construction Data

ESTIMATED CONSTRUCTION COST	**35,453,000**
ESTIMATED CONSTRUCTION + 25% CONTINGENCY	**44,316,000**

TOTAL ESTIMATED PROJECT COSTS

PHASE I

Federal Costs			
Engineering and Design			$2,759,000
Engineering		$2,658,960	
Geotechnical Investigation (included in engineering)		$0	
Hydrologic Modeling		$0	
Data Collection		$0	
Cultural Resources		$25,000	
NEPA Compliance		$50,000	
HTRW		$25,000	
Supervision and Administration			$886,320
State Costs			
Supervision and Administration			$400,000
Easements and Land Rights			$688,360
Monitoring			$22,537
Monitoring Plan Development	$16,800		
Monitoring Protocal Cost *	$5,737		
Total Phase I Cost Estimate			**$4,756,000**

* Monitoring Protocol requires a minimum of one year pre-construction monitoring at a specified cost based on project type and area.

PHASE II

Federal Costs					
Estimated Construction Cost +25% Contingency					$44,316,000
Oyster Issues (# of Acres)	0	lease acres	$3,000	per acre	$0
Supervision and Inspection	920	days @	$850	per day	$782,142
Supervision and Administration					$886,320
State Costs					
Supervision and Administration					$400,000
Total Phase II Cost Estimate					**$46,384,000**

TOTAL ESTIMATED PROJECT FIRST COST	**51,140,000**

O&M Data

Annual Costs

Annual Inspections	$4,718
Annual Cost for Operations	$0
Preventive Maintenance (Included in Annual Cost for Operations)	$0

Specific Intermittent Costs:

Construction Items					**Years 2-7**	**Years 8-18**	**Year 19**	**Year 20**
Annual dredging beneficial use incremental cost share					$16,015,000	$19,400,000	$19,630,000	$19,745,000
0					$0	$0	$0	$0
0					$0	$0	$0	$0
0					$0	$0	$0	$0
0					$0	$0	$0	$0
					$0	$0	$0	$0
			Subtotal		$16,015,000	$19,400,000	$19,630,000	$19,745,000
			Subtotal w/ 10% contin.		**$17,617,000**	$21,340,000	$21,593,000	$21,720,000
Engineer, Design & Administrative Costs								
Engineering and Design Cost					$0	$0	$0	$0
Administrative Cost					$0	$0	$0	$0
Eng Survey	20 days	@	$1,417 per day		$28,000	$28,000	$28,000	$28,000
Construction Inspe	400 days	@	$850 per day		$340,000	$340,000	$340,000	$340,000
			Subtotal		**$368,000**	$368,000	$368,000	$368,000
				Total	**$17,985,000**	$21,708,000	$21,961,000	$22,088,000

Annual Project Costs:

Corps Administration	$663
Monitoring	$5,737

Construction Schedule:

		2002	2003	2004	2005	2006	2007	Total
Plan & Design Start	March-02	7	12	6				25
Plan & Design End	March-04							
Const. Start	July-04							
Const. End	December-04			6	3			9

Mississippi River Sediment Trap Complex Project
Operation & Maintenance and Monitoring

Project Priority List 12

O&M Cost Considerations:

Annual Costs

Annual Inspections	**$4,718**
Annual Cost for Operations	**$0**
Preventive Maintenance	**$0**

Specific Intermittent Costs

Construction Items							**Years 2-7**	**Years 8-18**	**Year 19**	**Year 20**
Annual dredging beneficial use incremental cost share							$16,015,000	$19,400,000	$19,630,000	$19,745,000
						Subtotal	$16,015,000	$19,400,000	$19,630,000	$19,745,000
						Subtotal w/ 10% contingen	***$17,617,000***	***$21,340,000***	***$21,593,000***	***$21,720,000***
Engineer, Design & Administrative Costs										
Engineering and Design Cost										
Administrative Cost										
Eng Survey										
	20	days	@	$1,417	per day		$28,000	28000	28000	28000
Inspection										
	400	days	@	$850	per day		$340,000	340000	340000	340000
						Subtotal	***$368,000***	***$368,000***	***$368,000***	***$368,000***
						Total	**$17,985,000**	**$21,708,000**	**$21,961,000**	**$22,088,000**

Annual Project Costs:

Corps Administration	**$663**	
Monitoring	**$5,737**	*(Dependent upon type of project)*

Construction Schedule:

Planning & Design Start	**March-02**	
Planning & Design End	**March-04**	*(Minimum of one year to complete this phase)*
Const. Start	**July-04**	*(Requires 4 months for contracting and advertising)*
Const. End	**December-04**	*(6 month construction duration to work during low water)*

Coastal Wetlands Planning, Protection, and Restoration Act

12h Priority Project List Report

Appendix E

Wetlands Value Assessment for Candidate Projects

Appendix E

Wetlands Value Assessment For Candidate Projects

Table of Contents

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas

The WVA for this project includes 2 subareas. Total benefits for this project are as follows:

Area	AAHUs
Green Area	1021
Red Area	857

TOTAL BENEFITS = 1,878 AAHUS

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Swamp

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas - Green Area   Project Area: 3,681

Condition: Future Without Project

		TY 0		TY 1		TY 20	
Variable		**Class/Value**	**SI**	**Class/Value**	**SI**	**Class/Value**	**SI**
V1	Stand	% Cover		% Cover		% Cover	
	Structure	Overstory		Overstory		Overstory	
		35		35		<33	
		Scrub-shrub		Scrub-shrub		Scrub-shrub	
		15-30		15-30			
		Herbaceous		Herbaceous		Herbaceous	
		70		70			
		Class		Class		Class	
		3	0.40	3	0.40	1	0.10
V2	Stand	Cypress %		Cypress %		Cypress %	
	Maturity	29		29		45	
		Cypress dbh		Cypress dbh		Cypress dbh	
		10.76		10.76		12.96	
		Tupelo et al. %		Tupelo et al. %		Tupelo et al. %	
		71		71		55	
		Tupelo et al dbh		Tupelo et al dbh		Tupelo et al dbh	
		9.88	0.72	9.88	0.72	11.48	0.88
		Basal Area		Basal Area		Basal Area	
		114	0.43	114	0.43	106	0.53
V3	Water Regime	Flow/Exchange		Flow/Exchange		Flow/Exchange	
		Low		Low		Low	
		Flooding Duration		Flooding Duration		Flooding Duration	
		Semi-Permanent	0.45	Semi-Permanent	0.45	Permanent	0.30
	Mean						
V4	High Salinity	1.2	0.91	1.2	0.91	1.2	0.91
		HSI =	**0.48**	**HSI =**	**0.48**	**HSI =**	**0.29**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Swamp

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas - Green Area   Project Area: 3,681

Condition: Future With Project

		TY 0		TY 1		TY 20	
Variable		**Class/Value**	**SI**	**Class/Value**	**SI**	**Class/Value**	**SI**
V1	Stand	% Cover		% Cover		% Cover	
	Structure	Overstory		Overstory		Overstory	
		35		35			
		Scrub-shrub		Scrub-shrub		Scrub-shrub	
		15-30		15-30			
		Herbaceous		Herbaceous		Herbaceous	
		70		70			
		Class		Class		Class	
		3	0.40	3	0.40	5	0.80
V2		Cypress %		Cypress %		Cypress %	
	Maturity	29		29		29	
		Cypress dbh		Cypress dbh		Cypress dbh	
		10.76		10.76		13.55	
		Tupelo et al. %		Tupelo et al. %		Tupelo et al. %	
		71		71		71	
		Tupelo et al dbh		Tupelo et al dbh		Tupelo et al dbh	
		9.88	0.72	9.88	0.72	11.91	0.95
		Basal Area		Basal Area		Basal Area	
		114	0.43	114	0.43	170	0.95
V3	Water Regime	Flow/Exchange		Flow/Exchange		Flow/Exchange	
		Low		Moderate		Moderate	
		Flooding Duration		Flooding Duration		Flooding Duration	
		Semi-Permanent	0.45	Semi-Permanent	0.65	Semi-Permanent	0.65
	Mean						
V4	High Salinity	1.2	0.91	1.0	1.00	1.0	1.00
		HSI =	**0.48**	**HSI =**	**0.54**	**HSI =**	**0.81**

AAHU CALCULATION

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas - Green Area

Future Without Project			Total	cumulative
TY	Acres	x HSI	HUs	HUs
0	3,681	0.48	1760.89	
1	3,681	0.48	1760.89	1760.89
20	3,681	0.29	1080.36	26991.85
			Total CHUs =	28752.74
			AAHUs =	1437.64

Future With Project			Total	cumulative
TY	Acres	x HSI	HUs	HUs
0	3681	0.48	1760.89	
1	3681	0.54	1994.28	1877.59
20	3681	0.81	2983.83	47292.02
			Total CHUs =	49169.60
			AAHUs =	2458.48

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project AAHUs =	2458.48
B. Future Without Project AAHUs =	1437.64
Net Change (FWP - FWOP) =	**1020.84**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Swamp

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas - Red Area

Project Area: 2,777

Condition: Future Without Project

Variable		TY 0 Class/Value	TY 0 SI	TY 1 Class/Value	TY 1 SI	TY 20 Class/Value	TY 20 SI
V1	Stand Structure	% Cover Overstory 35 Scrub-shrub 15-30 Herbaceous 70 Class 3	0.40	% Cover Overstory 35 Scrub-shrub 15-30 Herbaceous 70 Class 3	0.40	% Cover Overstory <33 Scrub-shrub Herbaceous Class 1	0.10
V2	Stand Maturity	Cypress % 29 Cypress dbh 10.76 Tupelo et al. % 71 Tupelo et al dbh 9.88	0.72	Cypress % 29 Cypress dbh 10.76 Tupelo et al. % 71 Tupelo et al dbh 9.88	0.72	Cypress % 45 Cypress dbh 12.96 Tupelo et al. % 55 Tupelo et al dbh 11.48	0.88
		Basal Area 114	0.43	Basal Area 114	0.43	Basal Area 106	0.53
V3	Water Regime	Flow/Exchange Low Flooding Duration Semi-Permanent	0.45	Flow/Exchange Low Flooding Duration Semi-Permanent	0.45	Flow/Exchange Low Flooding Duration Permanent	0.30
V4	Mean High Salinity	1.2	0.91	1.2	0.91	1.2	0.91
		HSI =	**0.48**	**HSI =**	**0.48**	**HSI =**	**0.29**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Swamp

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas - Red Area

Project Area: 2,777

Condition: Future With Project

Variable		TY 0 Class/Value	TY 0 SI	TY 1 Class/Value	TY 1 SI	TY 20 Class/Value	TY 20 SI
V1	Stand Structure	% Cover Overstory 35 Scrub-shrub 15-30 Herbaceous 70 Class 3	0.40	% Cover Overstory 35 Scrub-shrub 15-30 Herbaceous 70 Class 3	0.40	% Cover Overstory Scrub-shrub Herbaceous Class 5.5	0.90
V2	Stand Maturity	Cypress % 29 Cypress dbh 10.76 Tupelo et al. % 71 Tupelo et al dbh 9.88	0.72	Cypress % 29 Cypress dbh 10.76 Tupelo et al. % 71 Tupelo et al dbh 9.88	0.72	Cypress % 29 Cypress dbh 14.43 Tupelo et al. % 71 Tupelo et al dbh 12.55	0.97
		Basal Area 114	0.43	Basal Area 114	0.43	Basal Area 191	0.97
V3	Water Regime	Flow/Exchange Low Flooding Duration Semi-Permanent	0.45	Flow/Exchange Moderately High Flooding Duration Semi-Permanent	0.70	Flow/Exchange Moderately High Flooding Duration Semi-Permanent	0.70
V4	Mean High Salinity	1.2	0.91	0.9	1.00	0.9	1.00
		HSI =	**0.48**	**HSI =**	**0.55**	**HSI =**	**0.86**

AAHU CALCULATION

Project: Hydrologic Restoration in the Swamps West of Lake Maurepas - Red Area

Future Without Project			Total	Cumulative
TY	Acres	x HSI	HUs	HUs
0	2777	0.48	1328.44	
1	2777	0.48	1328.44	1328.44
20	2777	0.29	815.04	20363.04
			Total CHUs =	**21691.49**
			AAHUs =	**1084.57**

Future With Project			Total	cumulative
TY	Acres	x HSI	HUs	HUs
0	2777	0.48	1328.44	
1	2777	0.55	1538.34	1433.39
20	2777	0.86	2399.09	37405.58
			Total CHUs =	**38838.97**
			AAHUs =	**1941.95**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project AAHUs =	1941.95
B. Future Without Project AAHUs =	1084.57
Net Change (FWP - FWOP) =	**857.37**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: Lake Borgne and MRGO Shoreline Protection

The WVA for this project includes 2 subareas. Total benefits for this project are as follows:

Area	AAHUs
Area 1	32
Area 3	38

TOTAL BENEFITS = 70 AAHUS

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Lake Borgne and MRGO Shoreline Protection — Project Area: 100
Area 1 - Lake Borgne shoreline
Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	76	0.78	72	0.75	0	0.10
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1	75	0.80	71	0.77		0.10
	Class 2						
	Class 3						
	Class 4	25		29			
	Class 5					100	
V4	%OW <= 1.5ft	79	1.00	68	0.97	16	0.31
V5	Salinity (ppt)	13	1.00	13	1.00	13	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh	**=**	**0.85**	**EM HSI =**	**0.82**	**EM HSI =**	**0.26**
	Open Water HSI	**=**	**0.76**	**OW HSI =**	**0.75**	**OW HSI =**	**0.66**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Lake Borgne and MR-GO Shoreline Protection — Project Area: 100
Area 1 - Lake Borgne shoreline
Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 3 Value	TY 3 SI
V1	% Emergent	76	0.78	76	0.78	76	0.78
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1	75	0.80	75	0.80	75	0.80
	Class 2						
	Class 3						
	Class 4	25		25		25	
	Class 5						
V4	%OW <= 1.5ft	79	1.00	79	1.00	90	0.75
V5	Salinity (ppt)	13	1.00	13	1.00	13	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.85**	**EM HSI =**	**0.85**	**EM HSI =**	**0.85**
	Open Water HSI	**=**	**0.76**	**OW HSI =**	**0.76**	**OW HSI =**	**0.74**

AAHU CALCULATION - EMERGENT MARSH

Project: Lake Borgne and MR-GO Shoreline Protection
Area 1 - Lake Borgne shoreline

Future Without Project			Total	cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	76	0.85	64.45	
1	72	0.82	59.19	61.80
20	0	0.26	0.00	434.24
			AAHUs =	**24.80**

Future With Project			Total	cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	76	0.85	64.45	
1	76	0.85	64.45	64.45
3	76	0.85	64.45	128.90
20	93	0.96	89.55	1303.50
			AAHUs	**74.84**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	74.84
B. Future Without Project Emergent Marsh AAHUs =	24.80
Net Change (FWP - FWOP) =	**50.04**

AAHU CALCULATION - OPEN WATER

Project: Lake Borgne and MR-GO Shoreline Protection
Area 1 - Lake Borgne shoreline

Future Without Project			Total	cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	24	0.76	18.21	
1	28	0.75	21.13	19.67
20	100	0.66	65.55	846.03
			AAHUs =	**43.29**

Future With Project			Total	cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	24	0.76	18.21	
1	24	0.76	18.21	18.21
3	24	0.74	17.77	35.98
20	7	0.74	5.16	194.67
			AAHUs	**12.44**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	12.44
B. Future Without Project Open Water AAHUs =	43.29
Net Change (FWP - FWOP) =	**-30.84**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	50.04
B. Open Water Habitat Net AAHUs =	-30.84
Net Benefits= (3.5xEMAAHUs+OWAAHUs)/4.5	**32.07**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Saline Marsh

Project: Lake Borgne and MRGO Shoreline Protection Area 3 - MR-GO bank

Project Area: 365

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	47	0.52	45	0.51	0	0.10
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.29		0.29		0.10
	Class 2						
	Class 3	45		45			
	Class 4	55		55			
	Class 5					100	
V4	%OW <= 1.5ft	5	0.16	5	0.16	0	0.10
V5	Salinity (ppt)	13	1.00	13	1.00	13	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.62**	**EM HSI =**	**0.61**	**EM HSI =**	**0.26**
	Open Water HSI =		**0.66**	**OW HSI =**	**0.66**	**OW HSI =**	**0.64**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Lake Borgne and MR-GO Shoreline Protection Area 3 - MR-GO bank
Project Area: 365
Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	47	0.52	47	0.52	47	0.52
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.29		0.29		0.29
	Class 2						
	Class 3	45		45		45	
	Class 4	55		55		55	
	Class 5						
V4	%OW <= 1.5ft	5	0.16	5	0.16	7	0.19
V5	Salinity (ppt)	13	1.00	13	1.00	13	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.62**	**EM HSI =**	**0.62**	**EM HSI =**	**0.62**
	Open Water HSI =		**0.66**	**OW HSI =**	**0.66**	**OW HSI =**	**0.66**

AAHU CALCULATION - EMERGENT MARSH

Project: Lake Borgne and MR-GO Shoreline Protection Area 3 - MR-GO bank

Future Without Project TY	Marsh Acres	x HSI	Total HUs	cumulative HUs
0	173	0.62	107.55	
1	164	0.61	99.92	103.72
20	0	0.26	0.00	768.13
			AAHUs =	**43.59**

Future With Project TY	Marsh Acres	x HSI	Total HUs	cumulative HUs
0	173	0.62	107.55	
1	173	0.62	107.55	107.55
20	173	0.62	107.55	2043.42
			AAHUs	**107.55**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	107.55
B. Future Without Project Emergent Marsh AAHUs =	43.59
Net Change (FWP - FWOP) =	**63.96**

AAHU CALCULATION - OPEN WATER

Project: Lake Borgne and MR-GO Shoreline Protection
Area 3 - MR-GO bank

Future Without Project			Total	cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	192	0.66	126.55	
1	201	0.66	132.48	129.52
20	365	0.64	233.70	3488.55
			AAHUs =	**180.90**

Future With Project			Total	cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	192	0.66	126.55	
1	192	0.66	126.55	126.55
20	192	0.66	126.92	2407.94
			AAHUs	**126.72**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	126.72
B. Future Without Project Open Water AAHUs =	180.90
Net Change (FWP - FWOP) =	**-54.18**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	63.96
B. Open Water Habitat Net AAHUs =	-54.18
Net Benefits= (3.5xEMAAHUs+OWAAHUs)/4.5	**37.70**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: Bayou Dupont Sediment Delivery System

TOTAL BENEFITS =	**189**	**AAHUS**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: Bayou Dupont Sediment Delivery System   Project Area: 538

Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	1	0.11	1	0.11	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.10
	Class 2						
	Class 3						
	Class 4	100		100			
	Class 5					100	
V4	%OW <= 1.5ft	20	0.36	20	0.36	0	0.10
V5	Salinity (ppt)	5	1.00	5	1.00	5	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.27**	**EM HSI =**	**0.27**	**EM HSI =**	**0.25**
	Open Water HSI	**=**	**0.66**	**OW HSI =**	**0.66**	**OW HSI =**	**0.63**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: Bayou Dupont Sediment Delivery System   Project Area: 538

Condition: Future With Project

Variable		TY 0		TY 1		TY 2	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	1	0.11	91	0.92	93	0.94
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.20	100	1.00	100	1.00
	Class 2						
	Class 3						
	Class 4	100					
	Class 5						
V4	%OW <= 1.5ft	20	0.36	100	0.60	100	0.60
V5	Salinity (ppt)	5	1.00	5	1.00	5	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.27**	**EM HSI =**	**0.95**	**EM HSI =**	**0.96**
	Open Water HSI	**=**	**0.66**	**OW HSI =**	**0.74**	**OW HSI =**	**0.74**

Project: Bayou Dupont Sediment Delivery System
FWP

Variable		TY 4 Value	TY 4 SI	TY 20 Value	TY 20 SI	Value	SI
V1	% Emergent	94	0.95	74	0.77		
V2	% Aquatic	50	0.55	50	0.55		
V3	Interspersion	%		%		%	
	Class 1	100	1.00	60	0.84		
	Class 2			40			
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	100	0.60	80	1.00		
V5	Salinity (ppt)	5	1.00	5	1.00		
V6	Access Value	1.00	1.00	1.00	1.00		
		EM HSI =	**0.97**	**EM HSI =**	**0.84**	**EM HSI =**	
		OW HSI =	**0.74**	**OW HSI =**	**0.75**	**OW HSI =**	

AAHU CALCULATION - EMERGENT MARSH

Project: Bayou Dupont Sediment Delivery System

Future Without Project

TY	Marsh Acres	x HSI	Total HUs	Cumulative HUs
0	3	0.27	0.82	
1		0.27	0.82	0.82
20	0	0.25	0.00	7.64
			AAHUs =	**0.42**

Future With Project

TY	Marsh Acres	x HSI	Total HUs	Cumulative HUs
0	3	0.27	0.82	
1	80	0.95	76.09	29.78
2	209	0.96	201.06	138.34
4	507	0.97	490.52	691.04
20	400	0.84	335.21	6568.86
			AAHUs	**371.40**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	371.40
B. Future Without Project Emergent Marsh AAHUs =	0.42
Net Change (FWP - FWOP) =	**370.98**

AAHU CALCULATION - OPEN WATER

Project: Bayou Dupont Sediment Delivery System

Future Without Project			**Total**	**Cumulative**
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	535	0.66	352.40	
1	535	0.66	352.40	352.40
20	538	0.63	340.14	6579.37
			AAHUs =	**346.59**

Future With Project			**Total**	**Cumulative**
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	535	0.66	352.40	
1	8	0.74	5.89	185.93
2	16	0.74	11.77	8.83
4	31	0.74	22.81	34.59
20	138	0.75	104.01	1009.54
			AAHUs	**61.94**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	61.94
B. Future Without Project Open Water AAHUs =	346.59
Net Change (FWP - FWOP) =	**-284.64**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	370.98
B. Open Water Habitat Net AAHUs =	-284.64
Net Benefits= (2.6xEMAAHUs+OWAAHUs)/3.6	**188.86**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: Shell Island Barrier Headland Restoration

The WVA for this project includes 3 subareas. Total benefits for this project are as follows:

Area	AAHUs
Western Area - Barrier Island	57
Eastern Area - Barrier Island	319
Eastern Area - Saline Marsh	16

TOTAL BENEFITS = 393 AAHUS

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Barrier Island

Project: Shell Island Barrier Headland Restoration
Western Area
Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Dune	0	0.10	0	0.10	0	0.10
V2	% Supratidal	21	1.00	21	1.00	21	1.00
V3	% Intertidal	79	0.73	79	0.73	79	0.73
V4	% Vegetative Cover	59	0.91	59	0.91	59	0.91
V5	% Woody Cover	0	0.10	0	0.10	0	0.10
V6	Interspersion	%	0.50	%	0.50	%	0.48
	Class 1						
	Class 2						
	Class 3	50		50		40	
	Class 4	50		50		60	
	Class 5						
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		HSI =	0.646	HSI =	0.646	HSI =	0.643

Project....... Shell Island Barrier Headland Restoration
FWOP

Variable		TY 11 Value	TY 11 SI	TY20 Value	TY20 SI	TY Value	TY SI
V1	% Dune	0	0.10	0	0.10		
V2	% Supratidal	16	0.82	16	0.82		
V3	% Intertidal	84	0.58	84	0.58		
V4	% Vegetative Cover	50	0.79	50	0.79		
V5	% Woody Cover	0	0.10	0	0.10		
V6	Interspersion	%	0.40	%	0.40	%	
	Class 1						
	Class 2						
	Class 3						
	Class 4	100		100			
	Class 5						
V7	Beach/surf Zone	1	1.00	1	1.00		
		HSI =	0.555	HSI =	0.555	HSI =	

Shell Island Barrier Headland Restoration Increment

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Barrier Island

Project: Shell Island Barrier Headland Restoration

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 3 Value	TY 3 SI
V1	% Dune	0	0.10	10	1.00	10	1.00
V2	% Supratidal	21	1.00	30	1.00	30	1.00
V3	% Intertidal	79	0.73	60	1.00	60	1.00
V4	% Vegetative Cover	59	0.91	36	0.60	80	1.00
V5	% Woody Cover	0	0.10	2	0.28	8	0.82
V6	Interspersion	%	0.50	%	1.00	%	1.00
	Class 1			100		100	
	Class 2						
	Class 3	50					
	Class 4	50					
	Class 5						
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		HSI =	0.646	HSI =	0.847	HSI =	0.982

Project....... Shell Island Barrier Headland Restoration
FWP

Variable		TY 5 Value	TY 5 SI	TY 10 Value	TY 10 SI	TY 11 Value	TY 11 SI
V1	% Dune	10	1.00	10	1.00	5	1.00
V2	% Supratidal	30	1.00	30	1.00	30	1.00
V3	% Intertidal	60	1.00	60	1.00	65	1.00
V4	% Vegetative Cover	80	1.00	80	1.00	65	1.00
V5	% Woody Cover	15	1.00	15	1.00	10	1.00
V6	Interspersion	%	1.00	%	1.00	%	0.90
	Class 1	100		100		50	
	Class 2					50	
	Class 3						
	Class 4						
	Class 5						
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		HSI =	1.000	HSI =	1.000	HSI =	0.985

Project.......
FWP

Variable		TY 14 Value	TY 14 SI	TY 20 Value	TY 20 SI	TY Value	TY SI
V1	% Dune	3	0.64	0	0.10		
V2	% Supratidal	30	1.00	30	1.00		
V3	% Intertidal	67	1.00	70	1.00		
V4	% Vegetative Cover	80	1.00	80	1.00		
V5	% Woody Cover	15	1.00	15	1.00		
V6	Interspersion	%	0.87	%	0.76	%	
	Class 1	35					
	Class 2	65		80			
	Class 3			20			
	Class 4						
	Class 5						
V7		1	1.00	1	1.00		
		HSI =	0.930	HSI =	0.838	HSI =	

AAHU CALCULATION

Project: Shell Island Barrier Headland Restoration
Western Area

Future Without Project TY	Acres	x HSI	Total HUs	Cumulative HUs
0	180	0.646	116.27	
1	177	0.646	114.33	115.30
10	158	0.643	101.58	971.54
11	142	0.555	78.87	89.99
20	95	0.555	52.76	592.33
			AAHUs =	88.46

Future With Project TY	Acres	x HSI	Total HUs	Cumulative HUs
0	180	0.646	116.27	
1	180	0.847	152.52	134.40
3	169	0.982	165.96	318.98
5	164	1.000	164.00	329.99
10	155	1.000	155.00	797.50
11	150	0.985	147.75	151.36
14	146	0.930	135.79	425.21
20	139	0.838	116.48	756.19
			AAHUs	145.68

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHUs =	145.68
B. Future Without Project AAHUs =	88.46
Net Change (FWP - FWOP) =	**57.22**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Barrier Island

Project: Shell Island Barrier Headland Restoration Increment
Eastern Area
Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Dune	0	0.10	0	0.10	0	0.10
V2	% Supratidal	0	0.10	0	0.10	0	0.10
V3	% Intertidal	100	0.10	100	0.10	100	0.10
V4	% Vegetative Cover	70	1.00	70	1.00	70	1.00
V5	% Woody Cover	0	0.10	0	0.10	0	0.10
V6	Interspersion	%	0.40	%	0.40	%	0.40
	Class 1						
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		HSI =	0.415	HSI =	0.415	HSI =	0.415

Project....... Shell Island Barrier Headland Restoration Increment
FWOP

Variable		TY 11 Value	TY 11 SI	TY20 Value	TY20 SI	TY Value	TY SI
V1	% Dune	0	0.10	0	0.10		
V2	% Supratidal	0	0.10	0	0.10		
V3	% Intertidal	100	0.10	0	0.10		
V4	% Vegetative Cover	20	0.38	0	0.10		
V5	% Woody Cover	0	0.10	0	0.10		
V6	Interspersion	%	0.40	%	0.10	%	
	Class 1						
	Class 2						
	Class 3						
	Class 4	100					
	Class 5			100			
V7	Beach/surf Zone	1	1.00	5	0.10		
		HSI =	0.290	HSI =	0.100	HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Barrier Island

Project: Shell Island Barrier Headland Restoration Increment

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 3 Value	TY 3 SI
V1	% Dune	0	0.10	10	1.00	10	1.00
V2	% Supratidal	0	0.10	30	1.00	30	1.00
V3	% Intertidal	100	0.10	60	1.00	60	1.00
V4	% Vegetative Cover	70	1.00	28	0.49	76	1.00
V5	% Woody Cover	0	0.10	5	0.55	10	1.00
V6	Interspersion	%	0.40	%	1.00	%	1.00
	Class 1			100		100	
	Class 2						
	Class 3						
	Class 4	100					
	Class 5						
V7	Beach/surf Zone	1	1.00	4	0.20	4	0.20
		HSI =	0.415	HSI =	0.772	HSI =	0.920

Project....... Shell Island Barrier Headland Restoration Increment
FWP

Variable		TY 5 Value	TY 5 SI	TY 10 Value	TY 10 SI	TY 11 Value	TY 11 SI
V1	% Dune	10	1.00	11	1.00	7	1.00
V2	% Supratidal	31	1.00	32	1.00	30	1.00
V3	% Intertidal	59	1.00	57	1.00	63	1.00
V4	% Vegetative Cover	80	1.00	80	1.00	65	1.00
V5	% Woody Cover	18	1.00	18	1.00	15	1.00
V6	Interspersion	%	1.00	%	1.00	%	0.90
	Class 1	100		100		50	
	Class 2					50	
	Class 3						
	Class 4						
	Class 5						
V7	Beach/surf Zone	4	0.20	4	0.20	4	0.20
		HSI =	0.920	HSI =	0.920	HSI =	0.905

Project.......
FWP

Variable		TY 14 Value	TY 14 SI	TY 20 Value	TY 20 SI	TY Value	TY SI
V1	% Dune	7	1.00	7	1.00		
V2	% Supratidal	30	1.00	30	1.00		
V3	% Intertidal	63	1.00	63	1.00		
V4	% Vegetative Cover	80	1.00	80	1.00		
V5	% Woody Cover	18	1.00	18	1.00		
V6	Interspersion	%	0.90	%	0.85	%	
	Class 1	50		25			
	Class 2	50		75			
	Class 3						
	Class 4						
	Class 5						
V7	Beach/surf Zone	4	0.20	4	0.20		
		HSI =	0.905	HSI =	0.898	HSI =	

AAHU CALCULATION

Project: Shell Island Barrier Headland Restoration Increment
Eastern Area

Future Without Project			Total	Cumulative
TY	Acres	x HSI	HUs	HUs
0		0.415	67.23	
1	155	0.415	64.33	65.78
10	104	0.415	43.16	483.68
11	52	0.290	15.09	28.04
20	0	0.100	0.00	53.07
			AAHUs =	31.53

Future With Project			Total	Cumulative
TY	Acres	x HSI	HUs	HUs
0	162	0.415	67.23	
1	421	0.772	325.13	180.76
3	418	0.920	384.56	709.84
5	413	0.920	379.96	764.52
10	405	0.920	372.60	1881.40
11	401	0.905	362.91	367.74
14	389	0.905	352.05	1072.43
20	366	0.898	328.49	2041.42
			AAHUs	350.90

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHUs =	350.90
B. Future Without Project AAHUs =	31.53
Net Change (FWP - FWOP) =	**319.38**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Shell Island Barrier Headland Restoration — Project Area: 693

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Emergent	9	0.18	9	0.18	6	0.15
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	40	0.61
V5	Salinity (ppt)	17	1.00	17	1.00	17	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.35**	**EM HSI =**	**0.35**	**EM HSI =**	**0.32**
	Open Water HSI	**=**	**0.70**	**OW HSI =**	**0.70**	**OW HSI =**	**0.69**

Project: Shell Island Barrier Headland Restoration
FWOP

Variable		TY 11 Value	TY 11 SI	TY 20 Value	TY 20 SI	Value	SI
V1	% Emergent	6	0.15	4	0.14		
V2	% Aquatic	0	0.30	0	0.30		
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		
	Class 2						
	Class 3						
	Class 4	100		100			
	Class 5						
V4	%OW <= 1.5ft	30	0.49	25	0.42		
V5	Salinity (ppt)	17	1.00	17	1.00		
V6	Access Value	1.00	1.00	0.00	0.10		
		EM HSI =	**0.32**	**EM HSI =**	**0.23**	**EM HSI =**	
		OW HSI =	**0.68**	**OW HSI =**	**0.23**	**OW HSI =**	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Shell Island Barrier Headland Restoration   Project Area: 693

Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	9	0.18	9	0.18	5	0.15
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	27	0.45
V5	Salinity (ppt)	17	1.00	17	1.00	17	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.35**	**EM HSI =**	**0.35**	**EM HSI =**	**0.32**
	Open Water HSI	**=**	**0.70**	**OW HSI =**	**0.70**	**OW HSI =**	**0.67**

AAHU CALCULATION - EMERGENT MARSH

Project: Shell Island Barrier Headland Restoration

Future Without Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	65	0.35	22.70	
1	62	0.35	21.65	22.17
10	42	0.32	13.63	158.02
11	40	0.32	12.98	13.31
20	26	0.23	6.01	83.52
			AAHUs =	**13.85**

Future With Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	65	0.35	22.70	
1	63	0.35	22.00	22.35
20	32	0.32	10.11	301.82
			AAHUs	**16.21**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	16.21
B. Future Without Project Emergent Marsh AAHUs =	13.85
Net Change (FWP - FWOP) =	**2.36**

AAHU CALCULATION - OPEN WATER

Project: Shell Island Barrier Headland Restoration

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	628	0.70	436.66	
1	631	0.70	438.75	437.70
10	651	0.69	446.45	3983.68
11	653	0.68	441.60	444.03
20	667	0.23	151.12	2676.70
			AAHUs =	**377.11**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	628	0.70	436.66	
1	630	0.70	438.05	437.36
20	661	0.67	445.12	8392.31
			AAHUs	**441.48**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	441.48
B. Future Without Project Open Water AAHUs =	377.11
Net Change (FWP - FWOP) =	**64.38**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	2.36
B. Open Water Habitat Net AAHUs =	64.38
Net Benefits= (3.5xEMAAHUs+OWAAHUs)/4.5	**16.14**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: Shell Island Barrier Headland Restoration Increment

The WVA for this project includes 2 subareas. Total benefits for this project are as follows:

Area	AAHUs
Eastern Area - Barrier Island	319
Eastern Area - Saline Marsh	16

TOTAL BENEFITS =	**336**	**AAHUS**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Barrier Island

Project: Shell Island Barrier Headland Restoration Increment
Eastern Area
Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Dune	0	0.10	0	0.10	0	0.10
V2	% Supratidal	0	0.10	0	0.10	0	0.10
V3	% Intertidal	100	0.10	100	0.10	100	0.10
V4	% Vegetative Cover	70	1.00	70	1.00	70	1.00
V5	% Woody Cover	0	0.10	0	0.10	0	0.10
V6	Interspersion	%	0.40	%	0.40	%	0.40
	Class 1						
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		HSI =	0.415	HSI =	0.415	HSI =	0.415

Project....... Shell Island Barrier Headland Restoration Increment
FWOP

Variable		TY 11 Value	TY 11 SI	TY20 Value	TY20 SI	TY Value	TY SI
V1	% Dune	0	0.10	0	0.10		
V2	% Supratidal	0	0.10	0	0.10		
V3	% Intertidal	100	0.10	0	0.10		
V4	% Vegetative Cover	20	0.38	0	0.10		
V5	% Woody Cover	0	0.10	0	0.10		
V6	Interspersion	%	0.40	%	0.10	%	
	Class 1						
	Class 2						
	Class 3						
	Class 4	100					
	Class 5			100			
V7	Beach/surf Zone	1	1.00	5	0.10		
		HSI =	0.290	HSI =	0.100	HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Barrier Island

Project: Shell Island Barrier Headland Restoration Increment

Condition: Future With Project

Variable		TY 0		TY 1		TY 3	
		Value	SI	Value	SI	Value	SI
V1	% Dune	0	0.10	10	1.00	10	1.00
V2	% Supratidal	0	0.10	30	1.00	30	1.00
V3	% Intertidal	100	0.10	60	1.00	60	1.00
V4	% Vegetative Cover	70	1.00	28	0.49	76	1.00
V5	% Woody Cover	0	0.10	5	0.55	10	1.00
V6	Interspersion	%	0.40	%	1.00	%	1.00
	Class 1			100		100	
	Class 2						
	Class 3						
	Class 4	100					
	Class 5						
V7	Beach/surf Zone	1	1.00	4	0.20	4	0.20
		HSI =	**0.415**	**HSI =**	**0.772**	**HSI =**	**0.920**

Project....... Shell Island Barrier Headland Restoration Increment
FWP

Variable		TY 5		TY 10		TY 11	
		Value	SI	Value	SI	Value	SI
V1	% Dune	10	1.00	11	1.00	7	1.00
V2	% Supratidal	31	1.00	32	1.00	30	1.00
V3	% Intertidal	59	1.00	57	1.00	63	1.00
V4	% Vegetative Cover	80	1.00	80	1.00	65	1.00
V5	% Woody Cover	18	1.00	18	1.00	15	1.00
V6	Interspersion	%	1.00	%	1.00	%	0.90
	Class 1	100		100		50	
	Class 2					50	
	Class 3						
	Class 4						
	Class 5						
V7	Beach/surf Zone	4	0.20	4	0.20	4	0.20
		HSI =	**0.920**	**HSI =**	**0.920**	**HSI =**	**0.905**

Project.......
FWP

Variable		TY 14		TY 20		TY	
		Value	SI	Value	SI	Value	SI
V1	% Dune	7	1.00	7	1.00		
V2	% Supratidal	30	1.00	30	1.00		
V3	% Intertidal	63	1.00	63	1.00		
V4	% Vegetative Cover	80	1.00	80	1.00		
V5	% Woody Cover	18	1.00	18	1.00		
V6	Interspersion	%	0.90	%	0.85	%	
	Class 1	50		25			
	Class 2	50		75			
	Class 3						
	Class 4						
	Class 5						
V7	Beach/surf Zone	4	0.20	4	0.20		
		HSI =	0.905	HSI =	0.898	HSI =	

AAHU CALCULATION

Project: Shell Island Barrier Headland Restoration Increment
Eastern Area

Future Without Project			Total	Cumulative
TY	Acres	x HSI	HUs	HUs
0		0.415	67.23	
1	155	0.415	64.33	65.78
10	104	0.415	43.16	483.68
11	52	0.290	15.09	28.04
20	0	0.100	0.00	53.07
			AAHUs =	**31.53**

Future With Project			Total	Cumulative
TY	Acres	x HSI	HUs	HUs
0	162	0.415	67.23	
1	421	0.772	325.13	180.76
3	418	0.920	384.56	709.84
5	413	0.920	379.96	764.52
10	405	0.920	372.60	1881.40
11	401	0.905	362.91	367.74
14	389	0.905	352.05	1072.43
20	366	0.898	328.49	2041.42
			AAHUs	**350.90**

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHUs =	350.90
B. Future Without Project AAHUs =	31.53
Net Change (FWP - FWOP) =	**319.38**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Shell Island Barrier Headland Restoration   Project Area: 693

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Emergent	9	0.18	9	0.18	6	0.15
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	40	0.61
V5	Salinity (ppt)	17	1.00	17	1.00	17	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.35**	**EM HSI =**	**0.35**	**EM HSI =**	**0.32**
	Open Water HSI	**=**	**0.70**	**OW HSI =**	**0.70**	**OW HSI =**	**0.69**

Project: Shell Island Barrier Headland Restoration
FWOP

Variable		TY 11 Value	TY 11 SI	TY 20 Value	TY 20 SI	Value	SI
V1	% Emergent	6	0.15	4	0.14		
V2	% Aquatic	0	0.30	0	0.30		
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		
	Class 2						
	Class 3						
	Class 4	100		100			
	Class 5						
V4	%OW <= 1.5ft	30	0.49	25	0.42		
V5	Salinity (ppt)	17	1.00	17	1.00		
V6	Access Value	1.00	1.00	0.00	0.10		
		EM HSI =	**0.32**	**EM HSI =**	**0.23**	**EM HSI =**	
		OW HSI =	**0.68**	**OW HSI =**	**0.23**	**OW HSI =**	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: Shell Island Barrier Headland Restoration   Project Area: 693

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	9	0.18	9	0.18	5	0.15
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	27	0.45
V5	Salinity (ppt)	17	1.00	17	1.00	17	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.35**	**EM HSI =**	**0.35**	**EM HSI =**	**0.32**
	Open Water HSI =		**0.70**	**OW HSI =**	**0.70**	**OW HSI =**	**0.67**

AAHU CALCULATION - EMERGENT MARSH

Project: Shell Island Barrier Headland Restoration

Future Without Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cumulative HUs**
0	65	0.35	22.70	
1	62	0.35	21.65	22.17
10	42	0.32	13.63	158.02
11	40	0.32	12.98	13.31
20	26	0.23	6.01	83.52
			AAHUs =	**13.85**

Future With Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cumulative HUs**
0	65	0.35	22.70	
1	63	0.35	22.00	22.35
20	32	0.32	10.11	301.82
			AAHUs	**16.21**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	16.21
B. Future Without Project Emergent Marsh AAHUs =	13.85
Net Change (FWP - FWOP) =	**2.36**

AAHU CALCULATION - OPEN WATER

Project: Shell Island Barrier Headland Restoration

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	628	0.70	436.66	
1	631	0.70	438.75	437.70
10	651	0.69	446.45	3983.68
11	653	0.68	441.60	444.03
20	667	0.23	151.12	2676.70
			AAHUs =	**377.11**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	628	0.70	436.66	
1	630	0.70	438.05	437.36
20	661	0.67	445.12	8392.31
			AAHUs	**441.48**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	441.48
B. Future Without Project Open Water AAHUs =	377.11
Net Change (FWP - FWOP) =	**64.38**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	2.36
B. Open Water Habitat Net AAHUs =	64.38
Net Benefits= (3.5xEMAAHUs+OWAAHUs)/4.5	**16.14**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: North Bully Hydrologic Restoration

The WVA for this project includes 5 subareas. Total benefits for this project are as follows:

Area	AAHUs
Area A	105
Area B	24
Area C	61
Area D	31
Area E	12

TOTAL BENEFITS = 233 AAHUS

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area A — Project Area: 5,507

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Emergent	50	0.55	50	0.55	47	0.52
V2	% Aquatic	0	0.10	0	0.10	0	0.10
V3	Interspersion	%		%		%	
	Class 1		0.45		0.45		0.44
	Class 2	25		25		20	
	Class 3	75		75		80	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	65	0.94	65	0.94	60	0.87
V5	Increment	12.5	0.63	12.5	0.63	13.5	0.48
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.61**	**EM HSI =**	**0.61**	**EM HSI =**	**0.57**
	Open Water HSI	**=**	**0.34**	**OW HSI =**	**0.34**	**OW HSI =**	**0.33**

Project: North Bully Camp Hydrologic Restoration

FWOP

Variable		TY 20 Value	TY 20 SI	Value	SI	Value	SI
V1	% Emergent	44	0.50				
V2	% Aquatic	0	0.10				
V3	Interspersion	%		%		%	
	Class 1		0.43				
	Class 2	15					
	Class 3	85					
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	55	0.81				
V5	Salinity (ppt)	14.5	0.33				
V6	Access Value	1.00	1.00				
		EM HSI =	**0.54**	**EM HSI =**		**EM HSI =**	
	Increment	**OW HSI =**	**0.31**	**OW HSI =**		**OW HSI =**	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area A — Project Area: 5,507

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Emergent	50	0.55	50	0.55	47	0.52
V2	% Aquatic	0	0.10	0	0.10	5	0.15
V3	Interspersion	%		%		%	
	Class 1		0.45		0.45		0.44
	Class 2	25		25		20	
	Class 3	75		75		80	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	65	0.94	65	0.94	60	0.87
V5	Salinity (ppt)	12.5	0.63	10.5	0.93	11.5	0.78
V6	Increment	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.61**	**EM HSI =**	**0.64**	**EM HSI =**	**0.61**
	Open Water HSI =		**0.34**	**OW HSI =**	**0.37**	**OW HSI =**	**0.40**

Project: North Bully Camp Hydrologic Restoration

FWP

Variable		TY 20 Value	TY 20 SI	Value	SI	Value	SI
V1	% Emergent	45	0.51				
V2	% Aquatic	5	0.15				
V3	Interspersion	%		%		%	
	Class 1		0.43				
	Class 2	15					
	Class 3	85					
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	55	0.81				
V5	Salinity (ppt)	13.5	0.48				
V6	Access Value	1.00	1.00				
		EM HSI =	**0.56**	**EM HSI =**		**EM HSI =**	
		OW HSI =	**0.37**	**OW HSI =**		**OW HSI =**	

AAHU CALCULATION - EMERGENT MARSH

Project: North Bully Camp Hydrologic Restoration
Area A

Future Without Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	2746	0.61	1676.45	
1	2731	0.61	1667.29	1671.87
10	2595	0.57	1489.73	14199.13
20	2446	0.54	1314.54	14012.23
			AAHUs =	**1494.16**

Future With Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	2746	0.61	1676.45	
1	2733	0.64	1759.61	1718.10
10	2613	0.61	1587.16	15053.90
20	2473	0.56	1385.89	14854.27
			AAHUs	**1581.31**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	1581.31
B. Future Without Project Emergent Marsh AAHUs =	1494.16
Net Change (FWP - FWOP) =	**87.15**

AAHU CALCULATION - OPEN WATER

Project: North Bully Camp Hydrologic Restoration
Area A

Future Without Project			Total	Cumulative
TY	Water Acres	x HSI	HUs	HUs
0	2761	0.34	950.68	
1	2776	0.34	955.84	953.26
10	2912	0.33	954.29	8599.00
20	3061	0.31	952.26	9536.89
			AAHUs =	**954.46**

Future With Project			Total	Cumulative
TY	Water Acres	x HSI	HUs	HUs
0	2761	0.34	950.68	
1	2774	0.37	1016.80	983.69
10	2894	0.40	1153.91	9762.39
20	3034	0.37	1125.61	11404.05
			AAHUs	**1107.51**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	1107.51
B. Future Without Project Open Water AAHUs =	954.46
Net Change (FWP - FWOP) =	**153.05**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	87.15
B. Open Water Habitat Net AAHUs =	153.05
Net Benefits= (2.6xEMAAHUs+OWAAHUs)/3.6	**105.46**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area B — Project Area: 2,031

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	27	0.34	27	0.34	19	0.27
V2	% Aquatic	5	0.15	5	0.15	5	0.15
V3	Interspersion	%		%		%	
	Class 1		0.28		0.28		0.26
	Class 2						
	Class 3	40		40		30	
	Class 4	60		60		70	
	Class 5						
V4	%OW <= 1.5ft	35	0.55	35	0.55	25	0.42
V5	Salinity (ppt)	10	1.00	10	1.00	11	0.85
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.48**	**EM HSI =**	**0.48**	**EM HSI =**	**0.41**
	Open Water HSI	**=**	**0.38**	**OW HSI =**	**0.38**	**OW HSI =**	**0.36**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area B — Project Area: 2,031

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	27	0.34	27	0.34	19	0.27
V2	% Aquatic	5	0.15	10	0.19	10	0.19
V3	Interspersion	%		%		%	
	Class 1		0.28		0.28		0.26
	Class 2						
	Class 3	40		40		30	
	Class 4	60		60		70	
	Class 5						
V4	%OW <= 1.5ft	35	0.55	35	0.55	25	0.42
V5	Salinity (ppt)	10	1.00	10	1.00	10	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.48**	**EM HSI =**	**0.48**	**EM HSI =**	**0.42**
	Open Water HSI	**=**	**0.38**	**OW HSI =**	**0.42**	**OW HSI =**	**0.41**

AAHU CALCULATION - EMERGENT MARSH

Project: North Bully Camp Hydrologic Restoration
Area B

Future Without Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	556	0.48	268.95	
1	545	0.48	263.63	266.29
20	381	0.41	155.53	3942.82
			AAHUs =	**210.46**

Future With Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	556	0.48	268.95	
1	546	0.48	264.11	266.53
20	388	0.42	164.86	4045.77
			AAHUs	**215.62**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	215.62
B. Future Without Project Emergent Marsh AAHUs =	210.46
Net Change (FWP - FWOP) =	**5.16**

AAHU CALCULATION - OPEN WATER

Project: North Bully Camp Hydrologic Restoration
Area B

Future Without Project			Total	Cumulative
TY	Water Acres	x HSI	HUs	HUs
0	1475	0.38	560.09	
1	1486	0.38	564.27	562.18
20	1650	0.36	590.05	10977.52
			AAHUs =	**576.98**

Future With Project			Total	Cumulative
TY	Water Acres	x HSI	HUs	HUs
0	1475	0.38	560.09	
1	1485	0.42	627.73	593.84
20	1643	0.41	676.43	12395.01
			AAHUs	**649.44**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	649.44
B. Future Without Project Open Water AAHUs =	576.98
Net Change (FWP - FWOP) =	**72.46**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	5.16
B. Open Water Habitat Net AAHUs =	72.46
Net Benefits= (2.6xEMAAHUs+OWAAHUs)/3.6	**23.85**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area C | Project Area: 3,378

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	59	0.63	59	0.63	57	0.61
V2	% Aquatic	5	0.15	5	0.15	5	0.15
V3	Interspersion	%		%		%	
	Class 1		0.46		0.46		0.46
	Class 2	30		30		30	
	Class 3	70		70		70	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	75	1.00	75	1.00	70	1.00
V5	Salinity (ppt)	12.5	0.63	12.5	0.63	14.5	0.33
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.67**	**EM HSI =**	**0.67**	**EM HSI =**	**0.62**
	Open Water HSI	**=**	**0.40**	**OW HSI =**	**0.40**	**OW HSI =**	**0.38**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area C | Project Area: 3,378

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	59	0.63	59	0.63	57	0.61
V2	% Aquatic	5	0.15	8	0.17	5	0.15
V3	Interspersion	%		%		%	
	Class 1		0.46		0.46		0.46
	Class 2	30		30		30	
	Class 3	70		70		70	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	75	1.00	75	1.00	70	1.00
V5	Salinity (ppt)	12.5	0.63	10.5	0.93	12.5	0.63
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI	**=**	**0.67**	**EM HSI =**	**0.70**	**EM HSI =**	**0.65**
	Open Water HSI	**=**	**0.40**	**OW HSI =**	**0.45**	**OW HSI =**	**0.40**

AAHU CALCULATION - EMERGENT MARSH

Project: North Bully Camp Hydrologic Restoration
Area C

Future Without Project			Total	Cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	1981	0.67	1320.05	
1	1978	0.67	1318.05	1319.05
20	1938	0.62	1203.51	23949.01
			AAHUs =	**1263.40**

Future With Project			Total	Cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	1981	0.67	1320.05	
1	1979	0.70	1384.68	1352.37
20	1942	0.65	1270.72	25221.02
			AAHUs	**1328.67**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	1328.67
B. Future Without Project Emergent Marsh AAHUs =	1263.40
Net Change (FWP - FWOP) =	**65.27**

AAHU CALCULATION - OPEN WATER

Project: North Bully Camp Hydrologic Restoration
Area C

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1397	0.40	556.85	
1	1400	0.40	558.05	557.45
20	1440	0.38	541.99	10453.19
			AAHUs =	**550.53**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1397	0.40	556.85	
1	1399	0.45	625.59	591.21
20	1436	0.40	572.40	11386.58
			AAHUs	**598.89**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	598.89
B. Future Without Project Open Water AAHUs =	550.53
Net Change (FWP - FWOP) =	**48.36**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	65.27
B. Open Water Habitat Net AAHUs =	48.36
Net Benefits= (2.6xEMAAHUs+OWAAHUs)/3.6	**60.57**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area D — Project Area: 2,153

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	31	0.38	31	0.38	27	0.34
V2	% Aquatic	5	0.15	5	0.15	5	0.15
V3	Interspersion	%		%		%	
	Class 1		0.25		0.25		0.24
	Class 2						
	Class 3	25		25		20	
	Class 4	75		75		80	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	45	0.68
V5	Salinity (ppt)	12.5	0.63	12.5	0.63	13.5	0.48
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.47**	**EM HSI =**	**0.47**	**EM HSI =**	**0.42**
	Open Water HSI =		**0.36**	**OW HSI =**	**0.36**	**OW HSI =**	**0.35**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project: North Bully Camp Hydrologic Restoration Area D — Project Area: 2,153

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	31	0.38	31	0.38	28	0.35
V2	% Aquatic	5	0.15	10	0.19	10	0.19
V3	Interspersion	%		%		%	
	Class 1		0.25		0.25		0.24
	Class 2						
	Class 3	25		25		20	
	Class 4	75		75		80	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	45	0.68
V5	Salinity (ppt)	12.5	0.63	11.5	0.78	12.5	0.63
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.47**	**EM HSI =**	**0.48**	**EM HSI =**	**0.44**
	Open Water HSI =		**0.36**	**OW HSI =**	**0.42**	**OW HSI =**	**0.40**

AAHU CALCULATION - EMERGENT MARSH

Project: North Bully Camp Hydrologic Restoration
Area D

Future Without Project			Total	Cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	666	0.47	310.34	
1	662	0.47	308.47	309.41
20	592	0.42	249.20	5287.90
			AAHUs =	**279.87**

Future With Project			Total	Cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	666	0.47	310.34	
1	662	0.48	319.51	314.93
20	595	0.44	264.47	5539.66
			AAHUs	**292.73**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	292.73
B. Future Without Project Emergent Marsh AAHUs =	279.87
Net Change (FWP - FWOP) =	**12.86**

AAHU CALCULATION - OPEN WATER

Project: North Bully Camp Hydrologic Restoration
Area D

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1487	0.36	541.29	
1	1491	0.36	542.74	542.02
20	1561	0.35	542.29	10311.48
			AAHUs =	**542.67**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1487	0.36	541.29	
1	1491	0.42	623.41	582.31
20	1558	0.40	625.53	11868.44
			AAHUs	**622.54**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	622.54
B. Future Without Project Open Water AAHUs =	542.67
Net Change (FWP - FWOP) =	**79.86**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	12.86
B. Open Water Habitat Net AAHUs =	79.86
Net Benefits= (2.6xEMAAHUs+OWAAHUs)/3.6	**31.47**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: North Bully Camp Hydrologic Restoration Area E

Project Area: 13,308

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 10 Value	TY 10 SI
V1	% Emergent	36	0.42	36	0.42	33	0.40
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.34		0.34		0.34
	Class 2	10		10		10	
	Class 3	50		50		50	
	Class 4	40		40		40	
	Class 5						
V4	%OW <= 1.5ft	22	0.38	22	0.38	18.5	0.34
V5	Salinity (ppt)	14	1.00	14	1.00	15	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.56**	**EM HSI =**	**0.56**	**EM HSI =**	**0.54**
	Open Water HSI =		**0.68**	**OW HSI =**	**0.68**	**OW HSI =**	**0.68**

Project: North Bully Camp Hydrologic Restoration

FWOP

Variable		TY 20 Value	TY 20 SI	Value	SI	Value	SI
V1	% Emergent	30	0.37				
V2	% Aquatic	0	0.30				
V3	Interspersion	%		%		%	
	Class 1		0.32				
	Class 2	5					
	Class 3	50					
	Class 4	45					
	Class 5						
V4	%OW <= 1.5ft	15	0.29				
V5	Salinity (ppt)	16	1.00				
V6	Access Value	1.00	1.00				
		EM HSI =	**0.52**	**EM HSI =**		**EM HSI =**	
		OW HSI =	**0.67**	**OW HSI =**		**OW HSI =**	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project: North Bully Camp Hydrologic Restoration Area E — Project Area: 13,308

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	36	0.42	36	0.42	30	0.37
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.34		0.34		0.32
	Class 2	10		10		5	
	Class 3	50		50		50	
	Class 4	40		40		45	
	Class 5						
V4	%OW <= 1.5ft	22	0.38	22	0.38	15	0.29
V5	Salinity (ppt)	14	1.00	13	1.00	15	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
	Emergent Marsh HSI =		**0.56**	**EM HSI =**	**0.56**	**EM HSI =**	**0.52**
	Open Water HSI =		**0.68**	**OW HSI =**	**0.68**	**OW HSI =**	**0.67**

AAHU CALCULATION - EMERGENT MARSH

Project: North Bully Camp Hydrologic Restoration Area E

Future Without Project			**Total**	**Cumulative**
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	4836	0.56	2696.39	
1	4789	0.56	2670.18	2683.28
10	4369	0.54	2350.03	22578.56
20	3936	0.52	2029.60	21882.10
			AAHUs =	**2357.20**

Future With Project			**Total**	**Cumulative**
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	4836	0.56	2696.39	
1	4792	0.56	2671.85	2684.12
20	4020	0.52	2072.91	44972.82
			AAHUs	**2382.85**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	2382.85
B. Future Without Project Emergent Marsh AAHUs =	2357.20
Net Change (FWP - FWOP) =	**25.65**

AAHU CALCULATION - OPEN WATER

Project: North Bully Camp Hydrologic Restoration
Area E

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	8472	0.68	5752.63	
1	8519	0.68	5784.55	5768.59
10	8939	0.68	6039.93	53212.25
20	9372	0.67	6287.37	61639.98
			AAHUs =	**6031.04**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	8472	0.68	5752.63	
1	8516	0.68	5782.51	5767.57
20	9288	0.67	6231.02	114148.44
			AAHUs	**5995.80**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	5995.80
B. Future Without Project Open Water AAHUs =	6031.04
Net Change (FWP - FWOP) =	**-35.24**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	25.65
B. Open Water Habitat Net AAHUs =	-35.24
Net Benefits= (3.5xEMAAHUs+OWAAHUs)/4.5	**12.12**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: Avoca Island Diversion and Land Building

The WVA for this project includes 2 subareas. Total benefits for this project are as follows:

Area	AAHUs
Area A	123
Area B	9

TOTAL BENEFITS =	**132**	**AAHUS**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Avoca Island Diversion and Land Building
Area A
Condition: Future Without Project

Project Area:
Fresh............ 5,990
Intermediate..

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	16	0.24	15	0.24	11	0.20
V2	% Aquatic	1	0.11	1	0.11	1	0.11
V3	Interspersion	%		%		%	
	Class 1	15	0.32	15	0.32	10	0.28
	Class 2						
	Class 3						
	Class 4	85		85		90	
	Class 5						
V4	%OW <= 1.5ft	5	0.16	5	0.16	5	0.16
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.39**	**EM HSI =**	**0.38**	**EM HSI =**	**0.34**
	Open Water HSI	**=**	**0.26**	**OW HSI =**	**0.26**	**OW HSI =**	**0.25**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Avoca Island Diversion and Land Building
Area A
Condition: Future With Project

Project Area:
Fresh............. 5,990
Intermediate....

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	16	0.24	15	0.24	13	0.22
V2	% Aquatic	1	0.11	5	0.15	12	0.21
V3	Interspersion	%		%		%	
	Class 1	15	0.32	15	0.32	12	0.30
	Class 2						
	Class 3						
	Class 4	85		85		88	
	Class 5						
V4	%OW <= 1.5ft	5	0.16	6	0.17	11	0.22
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.39**	**EM HSI =**	**0.38**	**EM HSI =**	**0.36**
	Open Water HSI	**=**	**0.26**	**OW HSI =**	**0.29**	**OW HSI =**	**0.35**

AAHU CALCULATION - EMERGENT MARSH

Project: Avoca Island Diversion and Land Building
Area A

Future Without Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	931	0.39	360.06	
1	915	0.38	347.10	353.56
20	662	0.34	228.25	5438.10
			AAHUs =	289.58

Future With Project			Total	Cumulative
TY	Marsh Acres	x HSI	HUs	HUs
0	931	0.39	360.06	
1	923	0.38	350.13	355.08
20	805	0.36	291.19	6085.94
			AAHUs	322.05

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	322.05
B. Future Without Project Emergent Marsh AAHUs =	289.58
Net Change (FWP - FWOP) =	**32.47**

AAHU CALCULATION - OPEN WATER

Project: Avoca Island Diversion and Land Building
Area A

Future Without Project			Total	Cumulative
TY	Water Acres	x HSI	HUs	HUs
0	5059	0.26	1299.64	
1	5075	0.26	1303.75	1301.70
20	5328	0.25	1352.96	25241.16
			AAHUs =	1327.14

Future With Project			Total	Cumulative
TY	Water Acres	x HSI	HUs	HUs
0	5059	0.26	1299.64	
1	5067	0.29	1484.35	1391.95
20	5185	0.35	1825.78	31424.19
			AAHUs	1640.81

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	1640.81
B. Future Without Project Open Water AAHUs =	1327.14
Net Change (FWP - FWOP) =	**313.66**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	32.47
B. Open Water Habitat Net AAHUs =	313.66
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**123.18**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project:	Avoca Island Diversion and Land Building	Project Area:	
	Area B	Fresh............	1,243
Condition:	Future Without Project	Intermediate..	

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	16	0.24	15	0.24	8	0.17
V2	% Aquatic	5	0.15	5	0.15	5	0.15
V3	Interspersion	%		%		%	
	Class 1	10	0.28	10	0.28	5	0.24
	Class 2						
	Class 3						
	Class 4	90		90		95	
	Class 5						
V4	%OW <= 1.5ft	75	0.94	75	0.94	70	0.89
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.38**	**EM HSI =**	**0.37**	**EM HSI =**	**0.32**
	Open Water HSI	**=**	**0.35**	**OW HSI =**	**0.35**	**OW HSI =**	**0.34**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project:	Avoca Island Diversion and Land Building	Project Area:	
	Area B	Fresh.............	1,243
Condition:	Future With Project	Intermediate....	

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	16	0.24	15	0.24	8	0.17
V2	% Aquatic	5	0.15	6	0.15	10	0.19
V3	Interspersion	%		%		%	
	Class 1	10	0.28	10	0.28	5	0.24
	Class 2						
	Class 3						
	Class 4	90		90		95	
	Class 5						
V4	%OW <= 1.5ft	75	0.94	75	0.94	70	0.89
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.38**	**EM HSI =**	**0.37**	**EM HSI =**	**0.32**
	Open Water HSI	**=**	**0.35**	**OW HSI =**	**0.36**	**OW HSI =**	**0.38**

AAHU CALCULATION - EMERGENT MARSH

Project: Avoca Island Diversion and Land Building Area B

Future Without Project			Total	Cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	195	0.38	74.55	
1	188	0.37	70.48	72.51
20	96	0.32	30.45	942.00
			AAHUs =	**50.73**

Future With Project			Total	Cumulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	195	0.38	74.55	
1	188	0.37	70.48	72.51
20	96	0.32	30.45	942.00
			AAHUs	**50.73**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	50.73
B. Future Without Project Emergent Marsh AAHUs =	50.73
Net Change (FWP - FWOP) =	**0.00**

AAHU CALCULATION - OPEN WATER

Project: Avoca Island Diversion and Land Building Area B

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1048	0.35	364.16	
1	1055	0.35	366.59	365.38
20	1147	0.34	390.38	7193.37
			AAHUs =	**377.94**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1048	0.35	364.16	
1	1055	0.36	375.50	369.82
20	1147	0.38	437.49	7716.02
			AAHUs	**404.29**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	404.29
B. Future Without Project Open Water AAHUs =	377.94
Net Change (FWP - FWOP) =	**26.35**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	0.00
B. Open Water Habitat Net AAHUs =	26.35
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**8.50**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: South White Lake Shoreline Protection

The WVA for this project includes 2 subareas. Total benefits for this project are as follows:

Area	AAHUs
Area A	43
Area D	129

TOTAL BENEFITS =	**172**	**AAHUS**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: South White Lake Shoreline Protection
Area A - Kaplan Tract
Condition: Future Without Project

Project Area:
Fresh............ 4,717
Intermediate..

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 11 Value	TY 11 SI
V1	% Emergent	41	0.47	40	0.46	35	0.42
V2	% Aquatic	20	0.28	20	0.28	20	0.28
V3	Interspersion	%		%		%	
	Class 1	10	0.48	10	0.48	5	0.44
	Class 2	40		40		40	
	Class 3	20		20		20	
	Class 4	30		30		35	
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	81	1.00
V5	Salinity (ppt) fresh intermediate	0	1.00	0	1.00	0	1.00
V6	Access Value fresh intermediate	0.0001	0.30	0.0001	0.30	0.0001	0.30
	Emergent Marsh HSI	**=**	**0.50**	**EM HSI =**	**0.50**	**EM HSI =**	**0.47**
	Open Water HSI	**=**	**0.41**	**OW HSI =**	**0.41**	**OW HSI =**	**0.40**

Project: South White Lake Shoreline Protection
FWOP

Variable		TY 12 Value	TY 12 SI	TY 20 Value	TY 20 SI	Value	SI
V1	% Emergent	28	0.35	24	0.32		
V2	% Aquatic	17	0.25	15	0.24		
V3	Interspersion	%		%		%	
	Class 1		0.32		0.30		
	Class 2	15		10			
	Class 3	30		30			
	Class 4	55		60			
	Class 5						
V4	%OW <= 1.5ft	75	0.94	75	0.94		
V5	Salinity (ppt) fresh intermediate	1	1.00	1	1.00		
V6	Access Value fresh intermediate	0.10	0.37	0.10	0.37		
		EM HSI =	**0.42**	**EM HSI =**	**0.40**	**EM HSI =**	
		OW HSI =	**0.38**	**OW HSI =**	**0.37**	**OW HSI =**	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project:	South White Lake Shoreline Protection	Project Area:	
	Area A - Kaplan Tract	Fresh.............	4,717
Condition:	Future With Project	Intermediate....	

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	41	0.47	40	0.46	30	0.37
V2	% Aquatic	20	0.28	20	0.28	20	0.28
V3	Interspersion	%		%		%	
	Class 1	10	0.48	10	0.48		0.40
	Class 2	40		40		40	
	Class 3	20		20		20	
	Class 4	30		30		40	
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	83	1.00
V5	Salinity (ppt) fresh intermediate	0	1.00	0	1.00	0	1.00
V6	Access Value fresh intermediate	0.0001	0.30	0.0001	0.30	0.0001	0.30
	Emergent Marsh HSI	**=**	**0.50**	**EM HSI =**	**0.50**	**EM HSI =**	**0.43**
	Open Water HSI	**=**	**0.41**	**OW HSI =**	**0.41**	**OW HSI =**	**0.40**

AAHU CALCULATION - EMERGENT MARSH

Project: South White Lake Shoreline Protection
Area A - Kaplan Tract

Future Without Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cumulative HUs**
0	1935	0.50	973.42	
1	1909	0.50	949.98	961.68
11	1663	0.47	774.62	8609.96
12	1330	0.42	562.23	666.03
20	1150	0.40	456.29	4067.83
			AAHUs =	**715.28**

Future With Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cumulative HUs**
0	1935	0.50	973.42	
1	1909	0.50	949.98	961.68
20	1413	0.43	612.48	14742.57
			AAHUs	**785.21**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	785.21
B. Future Without Project Emergent Marsh AAHUs =	715.28
Net Change (FWP - FWOP) =	**69.94**

AAHU CALCULATION - OPEN WATER

Project: South White Lake Shoreline Protection
Area A - Kaplan Tract

Future Without Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	2782	0.41	1127.50	
1	2808	0.41	1138.04	1132.77
11	3054	0.40	1228.69	11834.82
12	3387	0.38	1300.88	1265.79
20	3567	0.37	1323.16	10499.32
			AAHUs =	**1236.64**

Future With Project			Total	Cumulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	2782	0.41	1127.50	
1	2808	0.41	1138.04	1132.77
20	3304	0.40	1319.48	23355.67
			AAHUs	**1224.42**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	1224.42
B. Future Without Project Open Water AAHUs =	1236.64
Net Change (FWP - FWOP) =	**-12.21**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	69.94
B. Open Water Habitat Net AAHUs =	-12.21
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**43.44**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: South White Lake Shoreline Protection
Area D - White Lake shoreline
Condition: Future Without Project

Project Area:
Fresh............ 505
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	**SI**	**Value**	**SI**	**Value**	**SI**
V1	% Emergent	75	0.78	71	0.74	0	0.10
V2	% Aquatic	1	0.11	1	0.11	1	0.11
V3	Interspersion	%		%		%	
	Class 1	70	0.76	66	0.73		0.10
	Class 2						
	Class 3						
	Class 4	30		34			
	Class 5					100	
V4	%OW <= 1.5ft	30	0.44	26	0.39	8	0.19
V5	Salinity (ppt)						
	fresh	1	1.00	1	1.00	1	1.00
	intermediate						
V6	Access Value						
	fresh	0.10	0.37	0.10	0.37	0.10	0.37
	intermediate						
	Emergent Marsh HSI	**=**	**0.73**	**EM HSI =**	**0.70**	**EM HSI =**	**0.22**
	Open Water HSI	**=**	**0.28**	**OW HSI =**	**0.27**	**OW HSI =**	**0.21**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project:	South White Lake Shoreline Protection	Project Area:	
	Area D - White Lake shoreline	Fresh.............	505
Condition:	Future With Project	Intermediate....	

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	75	0.78	76	0.78	87	0.88
V2	% Aquatic	1	0.11	5	0.15	40	0.46
V3	Interspersion	%		%		%	
	Class 1	70	0.76	71	0.77	82	0.86
	Class 2						
	Class 3						
	Class 4	30		29		18	
	Class 5						
V4	%OW <= 1.5ft	30	0.44	31	0.45	58	0.75
V5	Salinity (ppt)						
	fresh	1	1.00	1	1.00	1	1.00
V6	Access Value						
	fresh	0.10	0.37	0.10	0.37	0.10	0.37
	intermediate						
	Emergent Marsh HSI	**=**	**0.73**	**EM HSI =**	**0.73**	**EM HSI =**	**0.80**
	Open Water HSI	**=**	**0.28**	**OW HSI =**	**0.31**	**OW HSI =**	**0.53**

AAHU CALCULATION - EMERGENT MARSH

Project: South White Lake Shoreline Protection
Area D - White Lake shoreline

Future Without Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cumulative HUs**
0	379	0.73	276.08	
1	360	0.70	253.51	264.72
20	0	0.22	0.00	1855.14
			AAHUs =	**105.99**

Future With Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cumulative HUs**
0	379	0.73	276.08	
1	382	0.73	280.58	278.33
20	439	0.80	351.34	5991.31
			AAHUs	**313.48**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	313.48
B. Future Without Project Emergent Marsh AAHUs =	105.99
Net Change (FWP - FWOP) =	**207.49**

AAHU CALCULATION - OPEN WATER

Project: South White Lake Shoreline Protection
Area D - White Lake shoreline

Future Without Project			**Total**	**Cumulative**
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	126	0.28	35.01	
1	145	0.27	39.46	37.25
20	505	0.21	106.37	1455.51
			AAHUs =	**74.64**

Future With Project			**Total**	**Cumulative**
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	126	0.28	35.01	
1	123	0.31	37.73	36.38
20	66	0.53	35.12	732.69
			AAHUs	**38.45**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	38.45
B. Future Without Project Open Water AAHUs =	74.64
Net Change (FWP - FWOP) =	**-36.18**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	207.49
B. Open Water Habitat Net AAHUs =	-36.18
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**128.88**

WETLAND VALUE ASSESSMENT

Benefits Summary Sheet

Project: **Mississippi River Sediment Trap Complex Project**

The WVA for this project includes 8 subareas. Total benefits for this project are as follows:

Area	AAHUs
Area 2	909
Area 3	225
Area 4	113
Area 5	14
Area 6	2238
Area 7	403
Area8	472
Area 9	465

TOTAL BENEFITS = 4,840 AAHUS

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 2

Project Area: Fresh............ 3,192; Intermediate..

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	30	0.44	30	0.44	20	0.33
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.61**	**OW HSI =**	**0.61**	**OW HSI =**	**0.60**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 2

Project Area: Fresh............. 3,192; Intermediate....

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 2 Value	TY 2 SI
V1	% Emergent	0	0.10	8	0.17	21	0.29
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10	13	0.30	20	0.36
	Class 2						
	Class 3						
	Class 4			87		80	
	Class 5	100					
V4	%OW <= 1.5ft	30	0.44	37	0.52	44	0.60
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.32**	**EM HSI =**	**0.43**
	Open Water HSI	**=**	**0.61**	**OW HSI =**	**0.63**	**OW HSI =**	**0.64**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 3 Value	TY 3 SI	TY 4 Value	TY 4 SI	TY 5 Value	TY 5 SI
V1	% Emergent	32	0.39	43	0.49	54	0.59
V2	% Aquatic	50	0.55	50	0.55	75	0.78
V3	Interspersion	%		%		%	
	Class 1	30	0.44	40	0.52	50	0.60
	Class 2						
	Class 3						
	Class 4	70		60		50	
	Class 5						
V4	%OW <= 1.5ft	51	0.67	58	0.75	65	0.83
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.51**	**EM HSI =**	**0.60**	**EM HSI =**	**0.68**
		OW HSI =	**0.65**	**OW HSI =**	**0.67**	**OW HSI =**	**0.82**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 6 Value	TY 6 SI	TY 7 Value	TY 7 SI	TY 8 Value	TY 8 SI
V1	% Emergent	64	0.68	75	0.78	85	0.87
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	60	0.68	70	0.76	100	1.00
	Class 2						
	Class 3						
	Class 4	40		30			
	Class 5						
V4	%OW <= 1.5ft	72	0.91	79	0.99	86	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.75**	**EM HSI =**	**0.82**	**EM HSI =**	**0.91**
		OW HSI =	**0.83**	**OW HSI =**	**0.85**	**OW HSI =**	**0.86**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 9 Value	TY 9 SI	TY 10 Value	TY 10 SI	TY 20 Value	TY 20 SI
V1	% Emergent	95	0.96	94	0.95	84	0.86
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	100	1.00	100	1.00	85.0	0.94
	Class 2					15.0	
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	75	0.94
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.97**	**EM HSI =**	**0.96**	**EM HSI =**	**0.90**
		OW HSI =	**0.86**	**OW HSI =**	**0.86**	**OW HSI =**	**0.86**

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 2

Future Without Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	240	0.32	77.83	35.40
2	644	0.43	275.34	169.63
3	974	0.51	500.01	382.96
4	1301	0.60	775.30	633.15
5	1624	0.68	1097.85	932.26
6	1943	0.75	1453.17	1271.69
7	2258	0.82	1861.70	1653.42
8	2569	0.91	2341.54	2097.11
9	2877	0.97	2792.77	2564.11
10	3011	0.96	2905.13	2849.08
20	2674	0.90	2403.42	26505.68
			AAHUs	**1954.72**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	1954.72
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**1954.72**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 2

Future Without Project			Total	Cummulative
TY	Water Acres	x HSI	HUs	HUs
0	3192	0.61	1949.12	
1	3192	0.61	1949.12	1949.12
20	3192	0.60	1922.52	36780.61
			AAHUs =	**1936.49**

Future With Project			Total	Cummulative
TY	Water Acres	x HSI	HUs	HUs
0	3192	0.61	1949.12	
1	2712	0.63	1712.82	1832.65
2	2379	0.64	1526.25	1620.09
3	2049	0.65	1338.64	1433.09
4	1722	0.67	1145.25	1242.59
5	1399	0.82	1150.72	1156.46
6	1080	0.83	901.03	1026.50
7	765	0.85	647.23	774.75
8	454	0.86	392.56	520.86
9	146	0.86	126.24	259.40
10	181	0.86	156.50	141.37
20	518	0.86	443.43	3004.52
			AAHUs	**650.61**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	650.61
B. Future Without Project Open Water AAHUs =	1936.49
Net Change (FWP - FWOP) =	**-1285.87**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	1954.72
B. Open Water Habitat Net AAHUs =	-1285.87
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**909.37**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 3

Project Area: Fresh............ 1,356
Intermediate..

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	75	0.94	75	0.94	75	0.94
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 3

Project Area: Fresh............. 1,356
Intermediate....

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 9 Value	TY 9 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	75	0.94	75	0.94	75	0.94
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 10 Value	TY 10 SI	TY 11 Value	TY 11 SI	TY 12 Value	TY 12 SI
V1	% Emergent	14	0.23	43	0.49	70	0.73
V2	% Aquatic	50	0.55	50	0.55	75	0.78
V3	Interspersion	%		%		%	
	Class 1	20	0.36	40.0	0.52	70	0.76
	Class 2						
	Class 3						
	Class 4	80		60		30	
	Class 5						
V4	%OW <= 1.5ft	80	1.00	85	1.00	87	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.38**	**EM HSI =**	**0.60**	**EM HSI =**	**0.79**
		OW HSI =	**0.67**	**OW HSI =**	**0.68**	**OW HSI =**	**0.85**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 13 Value	TY 13 SI	TY 14 Value	TY 14 SI	TY 20 Value	TY 20 SI
V1	% Emergent	98	0.98	97	0.97	90	0.91
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	100.0	1.00	100	1.00	100	1.00
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.99**	**EM HSI =**	**0.98**	**EM HSI =**	**0.94**
		OW HSI =	**0.86**	**OW HSI =**	**0.86**	**OW HSI =**	**0.86**

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 3

Future Without Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
9	0	0.24	0.00	0.00
10	170	0.38	63.98	28.02
11	505	0.60	300.94	170.20
12	836	0.79	663.71	471.40
13	1163	0.99	1149.41	895.96
14	1316	0.98	1292.92	1221.31
20	1226	0.94	1153.93	7336.82
			AAHUs	**506.19**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	506.19
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**506.19**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 3

Future Without Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1356	0.65	878.86	
1	1356	0.65	878.86	878.86
20	1356	0.65	878.86	16698.35
			AAHUs =	**878.86**

Future With Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1356	0.65	878.86	
1	1356	0.65	878.86	878.86
9	1356	0.65	878.86	7030.88
10	1017	0.67	682.97	782.24
11	682	0.68	466.08	575.19
12	351	0.85	297.26	390.69
13	24	0.86	20.75	159.97
14	40	0.86	34.59	27.67
20	130	0.86	112.41	440.98
			AAHUs	**514.32**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	514.32
B. Future Without Project Open Water AAHUs =	878.86
Net Change (FWP - FWOP) =	**-364.54**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	506.19
B. Open Water Habitat Net AAHUs =	-364.54
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**225.31**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 4

Project Area:
Fresh............ 1,356
Intermediate..

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	85	1.00	85	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 4

Project Area:
Fresh............. 1,356
Intermediate....

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 13 Value	TY 13 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	85	1.00	85	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 14 Value	TY 14 SI	TY 15 Value	TY 15 SI	TY 16 Value	TY 16 SI
V1	% Emergent	14	0.23	43	0.49	70	0.73
V2	% Aquatic	50	0.55	50	0.55	75	0.78
V3	Interspersion	%		%		%	
	Class 1	20.0	0.36	40.0	0.52	70	0.76
	Class 2						
	Class 3						
	Class 4	80		60		30	
	Class 5						
V4	%OW <= 1.5ft	86	1.00	87	1.00	88	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.38**	**EM HSI =**	**0.60**	**EM HSI =**	**0.79**
		OW HSI =	**0.67**	**OW HSI =**	**0.68**	**OW HSI =**	**0.85**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 17 Value	TY 17 SI	TY 18 Value	TY 18 SI	TY 20 Value	TY 20 SI
V1	% Emergent	98	0.98	97	0.97	95	0.96
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	100.0	1.00	100	1.00	100	1.00
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.99**	**EM HSI =**	**0.98**	**EM HSI =**	**0.97**
		OW HSI =	**0.86**	**OW HSI =**	**0.86**	**OW HSI =**	**0.86**

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 4

Future Without Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
13	0	0.24	0.00	0.00
14	170	0.38	63.98	28.02
15	505	0.60	300.94	170.20
16	836	0.79	663.71	471.40
17	1163	0.99	1149.41	895.96
18	1316	0.98	1292.92	1221.31
20	1285	0.97	1247.38	2540.17
			AAHUs	**266.35**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	266.35
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**266.35**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 4

Future Without Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1356	0.65	884.51	
1	1356	0.65	884.51	884.51
20	1356	0.65	884.51	16805.70
			AAHUs =	**884.51**

Future With Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1356	0.65	884.51	
1	1356	0.65	884.51	884.51
13	1356	0.65	884.51	10614.12
14	1017	0.67	682.97	784.83
15	682	0.68	466.08	575.19
16	351	0.85	297.26	390.69
17	24	0.86	20.75	159.97
18	40	0.86	34.59	27.67
20	71	0.86	61.39	95.98
			AAHUs	**676.65**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	676.65
B. Future Without Project Open Water AAHUs =	884.51
Net Change (FWP - FWOP) =	**-207.86**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	266.35
B. Open Water Habitat Net AAHUs =	-207.86
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**113.38**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 5

Project Area:
Fresh............ 1,017
Intermediate..

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	60	0.78	60	0.78	60	0.78
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.64**	**OW HSI =**	**0.64**	**OW HSI =**	**0.64**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 5

Project Area:
Fresh............. 1,017
Intermediate....

Condition: Future With Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 17 Value	TY 17 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	60	0.78	60	0.78	60	0.78
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.64**	**OW HSI =**	**0.64**	**OW HSI =**	**0.64**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 18 Value	TY 18 SI	TY 19 Value	TY 19 SI	TY 20 Value	TY 20 SI
V1	% Emergent	20	0.28	60	0.64	99	0.99
V2	% Aquatic	50	0.55	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	30	0.44	60.0	0.68	100	1.00
	Class 2						
	Class 3						
	Class 4	70		40			
	Class 5						
V4	%OW <= 1.5ft	70	0.89	80	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.43**	**EM HSI =**	**0.72**	**EM HSI =**	**0.99**
		OW HSI =	**0.67**	**OW HSI =**	**0.84**	**OW HSI =**	**0.86**

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 5

Future Without Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cummulative HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project				
TY	**Marsh Acres**	**x HSI**	**Total HUs**	**Cummulative HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
17	0	0.24	0.00	0.00
18	170	0.43	72.97	31.02
19	505	0.72	365.06	202.62
20	836	0.99	831.12	583.12
			AAHUs	**40.84**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	40.84
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**40.84**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 5

Future Without Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1017	0.64	646.43	
1	1017	0.64	646.43	646.43
20	1017	0.64	646.43	12282.22
			AAHUs =	**646.43**

Future With Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	1017	0.64	646.43	
1	1017	0.64	646.43	646.43
17	1017	0.64	646.43	10342.92
18	678	0.67	453.68	551.95
19	343	0.84	288.45	380.66
20	12	0.86	10.38	150.72
			AAHUs	**603.63**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	603.63
B. Future Without Project Open Water AAHUs =	646.43
Net Change (FWP - FWOP) =	**-42.80**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	40.84
B. Open Water Habitat Net AAHUs =	-42.80
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**13.86**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 6

Project Area:
Fresh............ 7,542
Intermediate..

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	75	0.94	75	0.94	75	0.94
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project:	Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 6	Project Area:	
		Fresh.............	7,542
Condition:	Future With Project	Intermediate....	

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 2 Value	TY 2 SI
V1	% Emergent	0	0.10	11	0.20	27	0.34
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10	15	0.32	25	0.40
	Class 2						
	Class 3						
	Class 4			85		75	
	Class 5	100					
V4	%OW <= 1.5ft	75	0.94	78	0.98	81	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.35**	**EM HSI =**	**0.47**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.67**	**OW HSI =**	**0.67**

Project: Beneficial Use Sediment Trap in the Mississippi River Above

FWP

Variable		TY 3 Value	TY 3 SI	TY 4 Value	TY 4 SI	TY 5 Value	TY 5 SI
V1	% Emergent	42	0.48	55	0.60	69	0.72
V2	% Aquatic	50	0.55	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	40	0.52	50	0.60	65	0.72
	Class 2						
	Class 3						
	Class 4	60		50		35	
	Class 5						
V4	%OW <= 1.5ft	84	1.00	87	1.00	88	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.59**	**EM HSI =**	**0.68**	**EM HSI =**	**0.78**
		OW HSI =	**0.68**	**OW HSI =**	**0.84**	**OW HSI =**	**0.84**

Project: Beneficial Use Sediment Trap in the Mississippi River Above FWP

Variable		TY 6 Value	TY 6 SI	TY 7 Value	TY 7 SI	TY 8 Value	TY 8 SI
V1	% Emergent	83	0.85	96	0.96	95	0.96
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	100	1.00	100	1.00	100	1.00
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.90**	**EM HSI =**	**0.98**	**EM HSI =**	**0.97**
		OW HSI =	**0.86**	**OW HSI =**	**0.86**	**OW HSI =**	**0.86**

Project: Beneficial Use Sediment Trap in the Mississippi River Above FWP

Variable		TY 20 Value	TY 20 SI	Value	SI	Value	SI
V1	% Emergent	83	0.85				
V2	% Aquatic	75	0.78				
V3	Interspersion	%		%		%	
	Class 1	85	0.94				
	Class 2	15					
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	85	1.00				
V5	Salinity (ppt)						
	fresh	0	1.00				
	intermediate						
V6	Access Value						
	fresh	1.00	1.00				
	intermediate						
		EM HSI =	**0.89**	**EM HSI =**		**EM HSI =**	
		OW HSI =	**0.86**	**OW HSI =**		**OW HSI =**	

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 6

Future Without Project			**Total**	**Cummulative**
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project			**Total**	**Cummulative**
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	720	0.35	251.45	112.18
2	1932	0.47	916.57	558.72
3	2920	0.59	1720.86	1299.79
4	3897	0.68	2659.25	2174.91
5	4862	0.78	3808.46	3217.62
6	5816	0.90	5231.42	4501.46
7	6758	0.98	6599.83	5903.52
8	7180	0.97	6969.78	6785.22
20	6227	0.89	5559.59	75027.77
			AAHUs	**4979.06**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	4979.06
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**4979.06**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 6

Future Without Project			**Total**	**Cummulative**
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	7542	0.65	4888.17	
1	7542	0.65	4888.17	4888.17
20	7542	0.65	4888.17	92875.31
			AAHUs =	**4888.17**

Future With Project			**Total**	**Cummulative**
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	7542	0.65	4888.17	
	6102	0.67	4069.57	4483.38
2	5102	0.67	3441.38	3756.74
3	4114	0.68	2811.53	3127.92
4	3137	0.84	2619.49	2740.20
5	2172	0.84	1832.99	2227.67
6	1218	0.86	1053.16	1446.37
7	276	0.86	238.65	645.90
8	362	0.86	313.01	275.83
20	1315	0.86	1131.18	8673.62
			AAHUs	**1368.88**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	1368.88
B. Future Without Project Open Water AAHUs =	4888.17
Net Change (FWP - FWOP) =	**-3519.29**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	4979.06
B. Open Water Habitat Net AAHUs =	-3519.29
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**2237.66**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 7

Condition: Future Without Project

Project Area:
Fresh............ 5,085
Intermediate..

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	75	0.94	75	0.94	75	0.94
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 7

Condition: Future With Project

Project Area:
Fresh............. 5,085
Intermediate....

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 9 Value	TY 9 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	75	0.94	75	0.94	75	0.94
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 10 Value	TY 10 SI	TY 11 Value	TY 11 SI	TY 12 Value	TY 12 SI
V1	% Emergent	11	0.20	33	0.40	55	0.60
V2	% Aquatic	50	0.55	50	0.55	75	0.78
V3	Interspersion	%		%		%	
	Class 1	20	0.36	30.0	0.44	55	0.64
	Class 2						
	Class 3						
	Class 4	80		70		45	
	Class 5						
V4	%OW <= 1.5ft	76	0.96	77	0.97	78	0.98
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.35**	**EM HSI =**	**0.52**	**EM HSI =**	**0.69**
		OW HSI =	**0.67**	**OW HSI =**	**0.67**	**OW HSI =**	**0.84**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 13 Value	TY 13 SI	TY 18 Value	TY 18 SI	TY 19 Value	TY 19 SI
V1	% Emergent	59	0.63	55	0.60	72	0.75
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	55.0	0.64	55	0.64	70	0.76
	Class 2						
	Class 3						
	Class 4	45		45		30	
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.71**	**EM HSI =**	**0.69**	**EM HSI =**	**0.81**
		OW HSI =	**0.84**	**OW HSI =**	**0.84**	**OW HSI =**	**0.85**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 20 Value	SI	Value	SI	Value	SI
V1	% Emergent	93	0.94				
V2	% Aquatic	75	0.78				
V3	Interspersion	%		%		%	
	Class 1	100	1.00				
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00				
V5	Salinity (ppt)						
	fresh	0	1.00				
	intermediate						
V6	Access Value						
	fresh	1.00	1.00				
	intermediate						
		EM HSI =	0.96	EM HSI =		EM HSI =	
		OW HSI =	0.86	OW HSI =		OW HSI =	

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 7

Future Without Project			Total	Cummulative
TY	Marsh Acres	x HSI	HUs	HUs
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	0.00

Future With Project			Total	Cummulative
TY	Marsh Acres	x HSI	HUs	HUs
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
9	0	0.24	0.00	0.00
10	509	0.35	180.02	80.06
11	1514	0.52	787.55	455.90
12	2508	0.69	1722.57	1227.45
13	2980	0.71	2122.19	1920.39
18	2809	0.69	1929.30	10125.14
19	3285	0.81	2648.30	2279.33
20	4257	0.96	4082.24	3340.52
			AAHUs	971.44

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	971.44
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**971.44**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 7

Future Without Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	5085	0.65	3295.73	
1	5085	0.65	3295.73	3295.73
20	5085	0.65	3295.73	62618.80
			AAHUs =	**3295.73**

Future With Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	5085	0.65	3295.73	
1	5085	0.65	3295.73	3295.73
9	5085	0.65	3295.73	26365.81
10	4068	0.67	2718.32	3010.43
11	3063	0.67	2067.46	2394.02
12	2069	0.84	1730.36	1925.64
13	2105	0.84	1763.98	1747.16
18	2276	0.84	1907.28	9178.13
19	1292	0.85	1094.17	1502.18
20	320	0.86	276.69	688.31
			AAHUs	**2505.37**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	2505.37
B. Future Without Project Open Water AAHUs =	3295.73
Net Change (FWP - FWOP) =	**-790.36**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	971.44
B. Open Water Habitat Net AAHUs =	-790.36
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**403.12**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 8

Project Area:
Fresh............ 6,102
Intermediate..

Condition: Future Without Project

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	85	1.00	85	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI =		**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI =		**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 8

Condition: Future With Project

Project Area:
Fresh............. 6,102
Intermediate....

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 12 Value	TY 12 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	85	1.00	85	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 13 Value	TY 13 SI	TY 14 Value	TY 14 SI	TY 15 Value	TY 15 SI
V1	% Emergent	9	0.18	27	0.34	45	0.51
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1	15.0	0.32	25.0	0.40	45	0.56
	Class 2						
	Class 3						
	Class 4	85		75		55	
	Class 5						
V4	%OW <= 1.5ft	86	1.00	87	1.00	88	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.33**	**EM HSI =**	**0.47**	**EM HSI =**	**0.61**
		OW HSI =	**0.67**	**OW HSI =**	**0.67**	**OW HSI =**	**0.69**

Project: Beneficial Use Sediment Trap in the Mississippi River Above

FWP

Variable		TY 16 Value	TY 16 SI	TY 17 Value	TY 17 SI	TY 18 Value	TY 18 SI
V1	% Emergent	62	0.66	80	0.82	97	0.97
V2	% Aquatic	75	0.78	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	60.0	0.68	100	1.00	100	1.00
	Class 2						
	Class 3						
	Class 4	40					
	Class 5						
V4	%OW <= 1.5ft	89	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.74**	**EM HSI =**	**0.88**	**EM HSI =**	**0.98**
		OW HSI =	**0.84**	**OW HSI =**	**0.86**	**OW HSI =**	**0.86**

Project: Beneficial Use Sediment Trap in the Mississippi River Above

FWP

Variable		TY 19		TY 20			SI
V1	% Emergent	96	0.96	95	0.96		
V2	% Aquatic	75	0.78	75	0.78		
V3	Interspersion	%		%		%	
	Class 1	100	1.00	100	1.00		
	Class 2						
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00		
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00		
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00		
	intermediate						
		EM HSI =	**0.98**	**EM HSI =**	**0.97**	**EM HSI =**	
		OW HSI =	**0.86**	**OW HSI =**	**0.86**	**OW HSI =**	

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 8

Future Without Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
12	0	0.24	0.00	0.00
13	509	0.33	169.93	76.70
14	1514	0.47	718.27	420.55
15	2508	0.61	1538.61	1105.40
16	3489	0.74	2565.88	2032.31
17	4459	0.88	3930.37	3224.52
18	5417	0.98	5321.99	4610.05
19	5855	0.98	5717.97	5520.41
20	5786	0.97	5616.60	5667.22
			AAHUs	**1132.86**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	1132.86
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**1132.86**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 8

Future Without Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	6102	0.65	3980.30	
1	6102	0.65	3980.30	3980.30
20	6102	0.65	3980.30	75625.63
			AAHUs =	**3980.30**

Future With Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	6102	0.65	3980.30	
1	6102	0.65	3980.30	3980.30
12	6102	0.65	3980.30	43783.26
13	5085	0.67	3399.78	3692.80
14	4080	0.67	2752.03	3076.90
15	3086	0.69	2118.13	2437.04
16	2105	0.84	1770.22	1969.45
17	1135	0.86	981.39	1379.63
18	177	0.86	153.05	567.22
19	247	0.86	213.57	183.31
20	316	0.86	273.23	243.40
			AAHUs	**3065.67**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	3065.67
B. Future Without Project Open Water AAHUs =	3980.30
Net Change (FWP - FWOP) =	**-914.63**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	1132.86
B. Open Water Habitat Net AAHUs =	-914.63
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**472.38**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 9
Condition: Future Without Project

Project Area:
Fresh............ 2,034
Intermediate..

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 20 Value	TY 20 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	85	1.00	85	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 9
Condition: Future With Project

Project Area:
Fresh............. 2,034
Intermediate....

Variable		TY 0 Value	TY 0 SI	TY 1 Value	TY 1 SI	TY 7 Value	TY 7 SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	50	0.55	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1		0.10		0.10		0.10
	Class 2						
	Class 3						
	Class 4						
	Class 5	100		100		100	
V4	%OW <= 1.5ft	85	1.00	85	1.00	85	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
	Emergent Marsh HSI	**=**	**0.24**	**EM HSI =**	**0.24**	**EM HSI =**	**0.24**
	Open Water HSI	**=**	**0.65**	**OW HSI =**	**0.65**	**OW HSI =**	**0.65**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 8 Value	TY 8 SI	TY 9 Value	TY 9 SI	TY 10 Value	TY 10 SI
V1	% Emergent	33	0.40	99	0.99	98	0.98
V2	% Aquatic	50	0.55	75	0.78	75	0.78
V3	Interspersion	%		%		%	
	Class 1	45	0.56	100.0	1.00	100	1.00
	Class 2						
	Class 3						
	Class 4	55					
	Class 5						
V4	%OW <= 1.5ft	88	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value						
	fresh	1.00	1.00	1.00	1.00	1.00	1.00
	intermediate						
		EM HSI =	**0.53**	**EM HSI =**	**0.99**	**EM HSI =**	**0.99**
		OW HSI =	**0.69**	**OW HSI =**	**0.86**	**OW HSI =**	**0.86**

Project: Beneficial Use Sediment Trap in the Mississippi River Above
FWP

Variable		TY 20 Value	TY 20 SI	Value	SI	Value	SI
V1	% Emergent	87	0.88				
V2	% Aquatic	75	0.78				
V3	Interspersion	%		%		%	
	Class 1	90	0.96				
	Class 2	10					
	Class 3						
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	85	1.00				
V5	Salinity (ppt)						
	fresh	0	1.00				
	intermediate						
V6	Access Value						
	fresh	1.00	1.00				
	intermediate						
		EM HSI =	**0.92**	**EM HSI =**		**EM HSI =**	
		OW HSI =	**0.86**	**OW HSI =**		**OW HSI =**	

AAHU CALCULATION - EMERGENT MARSH

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 9

Future Without Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
20	0	0.24	0.00	0.00
			AAHUs =	**0.00**

Future With Project			Total	Cummulative
TY	**Marsh Acres**	**x HSI**	**HUs**	**HUs**
0	0	0.24	0.00	
1	0	0.24	0.00	0.00
7	0	0.24	0.00	0.00
8	509	0.53	271.56	110.57
9	1514	0.99	1505.16	811.20
10	1998	0.99	1974.65	1740.38
20	1774	0.92	1630.21	17998.44
			AAHUs	**1033.03**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Emergent Marsh AAHUs =	1033.03
B. Future Without Project Emergent Marsh AAHUs =	0.00
Net Change (FWP - FWOP) =	**1033.03**

AAHU CALCULATION - OPEN WATER

Project: Beneficial Use Sediment Trap in the Mississippi River Above Head of Passes Complex Project - Area 9

Future Without Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	2034	0.65	1326.77	
1	2034	0.65	1326.77	1326.77
20	2034	0.65	1326.77	25208.54
			AAHUs =	**1326.77**

Future With Project			Total	Cummulative
TY	**Water Acres**	**x HSI**	**HUs**	**HUs**
0	2034	0.65	1326.77	
1	2034	0.65	1326.77	1326.77
7	2034	0.65	1326.77	7960.59
8	1017	0.69	698.04	1018.18
9	12	0.86	10.38	384.07
10	36	0.86	31.13	20.75
20	260	0.86	224.04	1276.95
			AAHUs	**599.37**

NET CHANGE IN AAHUs DUE TO PROJECT	
A. Future With Project Open Water AAHUs =	599.37
B. Future Without Project Open Water AAHUs =	1326.77
Net Change (FWP - FWOP) =	**-727.40**

TOTAL BENEFITS IN AAHUs DUE TO PROJECT	
A. Emergent Marsh Habitat Net AAHUs =	1033.03
B. Open Water Habitat Net AAHUs =	-727.40
Net Benefits=(2.1xEMAAHUs+OWAAHUs)/3.1	**465.15**

Coastal Wetlands Planning, Protection, and Restoration Act

12h Priority Project List Report

Appendix F

Public Support For Candidate Projects

Public Support for Candidate Projects
for the
12th Priority Project List

Hydrologic Restoration in the Swamps West of Lake Maurepas
- Ken Babcock, Ducks Unlimited, Inc. (22 May 02)

Lake Borgne and MRGO Shoreline Protection
- Representative Kenneth L. Odinet, Sr., LA House of Representatives (10 May 02)
- Sheriff Jack A. Stephens, St. Bernard Parish Sheriff's Department (20 May 02)
- Representative Nita Rusich Hutter, Louisiana House of Representatives (20 May 02)
- Congressman Billy Tauzin, U. S. House of Representatives (22 May 02)
- Representative Nita Rusich Hutter, Louisiana House of Representatives (3 Dec 02)
- Julio Mayorga, St. Bernard Parish (10 Dec 02)
- Dan Arceneaux, Coastal Advisory Committee for St. Bernard Parish (16 Jan 03)
- Henry Rodriguez, St Bernard Parish Councilman (16 Jan 03)

Bayou Dupont Sediment Delivery System
- O'Neil Marlbrough, representing Jefferson Parish (10 Dec 02)
- Marnie Winter, Jefferson Parish (10 Dec 02)
- Woody Crews, Jefferson Parish Fisheries Advisory Board (16 Jan 03)
- Kerry St. Pé, Director of Barataria Terrebonne Estuary Program (16 Jan 03)

Shell Island Barrier Headland Restoration or Increment Only
- Representative Ernest D. Wooton, Louisiana House of Representatives (23 May 02)
- Brian R. Bubrig, Agent, State Farm Insurance Companies (May 02)

North Bully Camp Hydrologic Restoration
- Ken Babcock, Ducks Unlimited, Inc. (22 May 02)
- Jess Curole, CZM Administrator, Lafourche Parish Government (23 May 02)

Avoca Island Diversion and Land Building
- President William A. Cefalu, St. Mary Parish Government (27 Nov 02)
- Hardy B. Fowler, Avoca Duck Club (27 Nov 02)
- Ken Babcock, Ducks Unlimited, Inc. (22 May 02)
- J. Peter Labouisse, III, New Orleans (5 Dec 02)
- Tony Simmons, McIlhenny Company (27 Nov 02)
- Robert C. Baird, Jr., President, Avoca Incorporated (5 Dec 02)
- Paul Hogan, General Manager, Avoca Incorporated (10 Dec 02)
- James Miller, Coastal Zone Administrator from Terrebonne Parish (16 Jan 03)
- Wade Walk, URS, Inc. representing Avoca Inc. (16 Jan 03)
- Carol Vinning, Director of Planning, St. Mary Parish Government (16 Jan 03)

South White Lake Shoreline Protection
- Sherrill J. Segrera, Abbeville, LA (21 Nov 02)
- Michael J. Bertrand, Secretary-Treasurer, Vermilion Parish Police Jury (21 Nov 02)
- W.P. Edwards, III, Chairman, Vermilion Parish Police Jury (21 Nov 02)
- President Edval Simon, Jr., Vermilion Parish Police Jury (21 Nov 02)
- Martin O. Miller III, Rellim Surface Management, LLC (4 Dec 02)
- Gregory O. Currier, Duplass, Zwain, Bourgeois & Morton, PLC (5 Dec 02)
- Diane Miller, Metairie, LA (5 Dec 02)

- Paul C. Perrett, Boulet Family, LLC (5 Dec 02)
- Martin O. Miller, II, Edna K. Miller, LLC and Marie Diane Miller, LLC (5 Dec 02)
- John M. Currier, Attorney (5 Dec 02)
- Randy Moertle, Coastal Environments, Inc. (4 Dec 02)
- Arlene Choate, Citizen (24 Nov 02)
- Additional one hundred forty-two (142) letters from residents in support of project (Dec 02)

<u>Ground Improvement Demonstration Project (MRGO)</u>

<u>Ecological Wave Buffer Demonstration Project (MRGO)</u>

<u>Freshwater Floating Marsh Creation Demonstration Project</u>

Coastal Wetlands Planning, Protection, and Restoration Act

12h Priority Project List Report

Appendix G

Status of Previous Projects from 1st through 11th Priority Project Lists

Appendix G

Status of Previous Projects from 1st through 11th Priority Project Lists

Table of Contents

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

PROJECT STATUS SUMMARY REPORT

15 May 2003

Summary report on the status of CWPPRA projects prepared for the Louisiana Coastal Wetlands Conservation and Restoration Task Force.

Reports enclosed:

- Project Details by Lead Agency
- Project Summary by Basin
- Project Summary by Priority List

Information based on data furnished by the Federal Lead Agencies and collected by the Corps of Engineers

Prepared by:

Planning, Programs and Project Management Division
Coastal Restoration Branch
U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Lead Agency: DEPT. OF THE ARMY, CORPS OF ENGINEERS

Priority List 1

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Barataria Bay Waterway Marsh Creation	BARA	JEFF	445	24-Apr-1995 A	22-Jul-1996 A	15-Oct-1996 A	$1,759,257	$1,173,529	66.7	$1,158,345 $1,158,272

Status: The enlargement of Queen Bess Island was incorporated into the project and the construction of a 9-acre cell was completed in October 1996, at a cost of $945,678. Remaining funds may be used to clear marsh creation sites of oyster leases. If oyster-related conflicts are removed from the remaining marsh creation sites, these areas will be incorporated into the Corp's O&M disposal plan for the next three maintenance cycles. The USACE, LADNR, and LDWF are currently pursuing an administrative process to identify and prioritize beneficial use sites along the BBWW. Additional monitoring of the Queen Bess site was discontinued in 2002 on the recommendation of the local sponsor and monitoring team.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Labranche Marsh Creation	PONT	STCHA	203	17-Apr-1993 A	06-Jan-1994 A	07-Apr-1994 A	$4,461,301	$3,666,941	82.2	$3,587,020 $3,585,060

Status: Contract awarded to T. L. James Co. (Dredge "Tom James") for dredging approximately 2,500,000 cy of Lake Pontchartrain sediments and placing in marsh creation area. Contract final inspection was performed on April 7, 1994. Site visit by Task Force took place on April 13, 1994.

The project is being monitored.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Lake Salvador Shoreline Protection at Jean Lafitte NHP&P	BARA	JEFF	0	29-Oct-1996 A	01-Jun-1995 A	21-Mar-1996 A	$60,000	$58,378	97.3	$58,753 $58,753

Status: This project was added to Priority List 1 at the March 1995 Task Force meeting. The Task Force approved the expenditure of up to $45,000 in Federal funds and non-Federal funds of $15,000 (25%) for the design of the project.

A design review meeting was held with Jean Lafitte Park personnel in May 1996 to resolve design comments prior to advertisement for the construction contract. The contract was awarded December 4, 1996 for $610,000 to Bertucci Contracting Corp. The contract was completed in March 1997.

Complete. This project was design only.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Vermilion River Cutoff Bank Protection	TECHE	VERMI	65	17-Apr-1993 A	10-Jan-1996 A	11-Feb-1996 A	$1,526,000	$2,022,961	132.6 !	$1,793,876 $1,790,811

Status: The project was modified by moving the dike from the west to the east bank of the cutoff to better protect the wetlands. The need for the sediment retention fence on the west bank is still undetermined.
The Task Force approved a revised project estimate of $2,500,000; however, current estimate is less.

The Task Force approved a revised project estimate of $2,500,000; however, current estimate is less.

Condemnation of real estate easements was required because of unclear ownership titles and significantly lengthened the project schedule. Construction was completed in February 1996.

Complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
West Bay Sediment Diversion	DELTA	PLAQ	9,831	29-Aug-2002 A	01-Jun-2003	30-Oct-2004	$8,517,066	$22,312,761	262.0 !	$1,404,152 $1,478,453

Status: The CSA was signed August 29, 2002. A 95% design review was held May 17, 2002. A Record of Decision finalizing the EIS was signed on March 18, 2002. The Task Force, by fax vote, approved a revised project description and reauthorized the project to comply with CWPPRA Section 3952 in April 2002. At the January 10, 2001 Task Force meeting, approval was granted to proceed with the project at the current price of $22 million due to the increased costs of maintaining the anchorage area. A VE study on the project was undertaken the week of August 21, 2000.

The major portion of the cost increase is for dredging the anchorage as a result of induced shoaling.

In a letter dated March 1, 1995, the Local Sponsor, LA DNR, requested deauthorization of the project citing cost overruns and its location on the "bird's foot" delta, which the CWPPRA Restoration Plan calls for a phased-abandonment. A letter requesting deauthorization of the project was issued to the Chairman of the Technical Committee on August 25, 1995. However, at the February 28, 1996 Task Force meeting, the State withdrew its request for deauthorization and work on the project proceeded. The CSA was sent to LA DNR for signature in March 1997. The current estimate exceeds the Priority List estimate by 125% and, therefore, necessitated Task Force approval, which was granted at the April 14, 1998 meeting.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	ESTIMATES %	Actual Obligations/ Expenditures
Total Priority List 1			10,544				$16,323,624	$29,234,569	179.1	$8,002,146 $8,071,349

5 Project(s)
5 Cost Sharing Agreements Executed
4 Construction Started
4 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 2

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Clear Marais Bank Protection	CALC	CALCA	1,067	29-Apr-1996 A	29-Aug-1996 A	03-Mar-1997 A	$1,741,310	$3,734,596	214.5 !	$2,875,842 $2,872,988

Status: The original construction estimate was low, based on the proposed plan in that the rock quantity estimate was less than half o the quantity needed (based on the original design), and the estimate did not include a floatation channel needed for construction. This accounts for most of the cost increase shown. The current estimate is based on the original rock dike design and costs about $89/foot.

Complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
West Belle Pass Headland Restoration	TERRE	LAFOU	474	27-Dec-1996 A	10-Feb-1998 A	17-Jul-1998 A	$4,854,102	$6,698,262	138.0 !	$6,158,461 $5,415,629

Status: We received verbal authority from HQ Counsel to acquire oyster leases, for this project only, directly impacted by the construction of the project. Construction cost increase approved at the January 16, 1998 Task Force meeting.

Construction complete. Agreement reached between COE, DNR, and T.L. James Co. on the remediation of the marsh buggy tracks. Planting proposal requested from the Plant Material Research Center.

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	% (ESTIMATES)	Actual Obligations/ Expenditures
Total Priority List 2			1,541				$6,595,412	$10,432,858	158.2	$9,034,304 $8,288,617

2 Project(s)
2 Cost Sharing Agreements Executed
2 Construction Started
2 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 3

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Channel Armor Gap Crevasse	DELTA	PLAQ	936	13-Jan-1997 A	22-Sep-1997 A	02-Nov-1997 A	$808,397	$888,985	110.0	$598,437 $594,852

Status: Cost increase was due to additional project management costs, by both Federal and Local Sponsor.

Surveys identified a pipeline in the crevasse area which would be negatively impacted by the project. US Fish & Wildlife Service reviewed their permit for the pipeline and determined that Shell Pipeline was required to lower it at their own cost. USFWS requested a modification to the alignment on USFWS-owned lands.

Construction complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
MRGO Back Dike Marsh Protection	PONT	STBER	755	17-Jan-1997 A	25-Jan-1999 A	29-Jan-1999 A	$512,198	$318,445	62.2	$318,445 $318,445

Status: Completed scope of work greatly reduced. Work was to be performed via a simplified acquisition contract as estimated construction cost is under $100,000. Bids received were higher than Government estimate by 25%. Subsequently received an in-house labor estimate from Vicksburg District. Vicksburg District completed construction on 29 January 1999.

Cost increase was due to additional project management costs, environmental investigations and local sponsor activities not included in the baseline estimate. Further title research indicates that private ownership titles are unclear, requiring condemnation. This accounts for the long period between CSA execution and project construction.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Pass-a-Loutre Crevasse [DEAUTHORIZED]	DELTA	PLAQ	0				$2,857,790	$119,857	4.2	$119,857 $119,835

Status: Two pipelines and two power poles are in the area of the crevasse, increasing relocation costs by approximately $2.15 million. LA DNR asked that the Corps investigate alternative locations to avoid or minimize impacts to the pipelines, but there are no more suitable locations for the cut. The Corps has also reviewed the design to determine whether relocations cost-savings could be achieved. Reducing the bottom width of the crevasse from 430 feet as originally proposed to 200 feet reduced the relocation cost only marginally.

A draft memorandum dated December 5, 1997 was sent to the CWPPRA Technical Committee Chairman requesting the Task Force to deauthorize the project. COE requested deauthorization at the January 16, 1998 Task Force meeting. Task Force formally deauthorized project July 23, 1998.

Total Priority List 3	1,691	$4,178,385	$1,327,287	31.8	$1,036,738 $1,033,132

3 Project(s)
2 Cost Sharing Agreements Executed
2 Construction Started
2 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 4

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Grand Bay Crevasse [DEAUTHORIZED]	BRET	PLAQ	0				$2,468,908	$64,515	2.6	$64,515 $64,497

Status: The major landowner has indicated non-support of the project and has withheld ROE because of concern about sedimentation negatively impacting oil and gas interests within the deposition area.

A draft memorandum dated December 5, 1997 was sent to the CWPPRA Technical Committee Chairman requesting the Task Force to deauthorize the project. COE requested deauthorization at the January 16, 1998 Task Force meeting. Project deauthorized July 23, 1998.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	ESTIMATES %	Actual Obligations/ Expenditures
Hopper Dredge (DEMO) [DEAUTHORIZED]	DELTA	PLAQ	0	30-Jun-1997 A			$300,000	$58,310	19.4	$58,310 $58,310

Status: Current scheme was found to be non-implementable due to inability of the hopper dredge to get close enough to the disposal area to spray over the bank of the Mississippi River.

Project deauthorized October 4, 2000.

Total Priority List	4	0			$2,768,908	$122,824	4.4	$122,824 $122,807

2 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
2 Project(s) Deferred/Deauthorized

Priority List 5

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Chevee Shoreline Protection	PONT	ORL	75	01-Feb-2001 A	25-Aug-2001 A	17-Dec-2001 A	$2,555,029	$2,585,187	101.2	$2,236,362 $2,238,611

Status: Approval of model CSA for PPL 5, 6, and 8 projects granted on November 13, 2000. Construction began August 2001 and completed December 2001.

Revised project consisted of constructing a 2,870-foot rock dike across the mouth of the north cove and a 2,820-foot rock dike tying into and extending an existing USFWS rock dike, across the south cove. Approximately 75 acres of brackish marsh will be protected by the project.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	%	Actual Obligations/ Expenditures
Total Priority List 5			75				$2,555,029	$2,585,187	101.2	$2,236,362 $2,238,611

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 6

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Flexible Dustpan Demo at Head of Passes (DEMO)	DELTA	PLAQ	0	31-May-2002 A	03-Jun-2002 A	21-Jun-2002 A	$1,600,000	$1,903,303	119.0	$1,856,132 $1,851,033

Status: CSA executed May 31, 2002. Construction completed June 21, 2002.

The Dustpan/Cutterhead Marsh Creation Demonstration project as originally approved, no longer involves the use of a cutterhead dredge. At the October 25, 2001 Task Force meeting, it was approved the motion to use the authorized funds for a "flexible dustpan" demonstration project and approved changing the name of the project to "Flexible Dustpan Demo at Head of Passes".

The project was completed as an operations and maintenance task order through an ERDC research and development IDC contract. The project identified some minor areas of concern with regard to the dredge plants effectiveness as a maintenance tool. The dredge was effective in its performance for the beneficial placement of material. The final surveys and quantities have not yet been reported.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Marsh Creation East of Atchafalaya River- Avoca Island [DEAUTHORIZED]	TERRE	STMRY	0				$6,438,400	$66,869	1.0	$66,869 $66,869

Status: A draft memorandum dated December 5, 1997 was sent to the Technical Committee Chairman requesting the Task Force to deauthorize the project. COE requested deauthorization at the January 16, 1998 Task Force meeting.

Project deauthorized July 23, 1998.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Marsh Island Hydrologic Restoration	TECHE	IBERI	367	01-Feb-2001 A	25-Jul-2001 A	12-Dec-2001 A	$4,094,900	$5,141,493	125.6 !	$3,848,434 $3,816,974

Status: Approval of model CSA for PPL 5, 6 and 8 projects granted on November 13, 2000. CSA executed on February 1, 2001. Advertised as 100% small business set-aside. Construction began July 2001 and completed December 2001.

Revised design of closures from earthen to rock because soil borings indicate highly organic material in borrow area.

Total Priority List	6	367	$12,133,300	$7,111,664	58.6	$5,771,435 $5,734,875

3 Project(s)
2 Cost Sharing Agreements Executed
2 Construction Started
2 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 8

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Sabine Refuge Marsh Creation	CALC	CAMER	993	09-Mar-2001 A	15-Aug-2001 A	30-Sep-2006	$5,920,248	$7,400,310	125.0	$3,298,541 $3,384,218

Status: Total project cost estimate is $10,154,300; Priority List 8 funded $5,313,000 to complete construction of a permanent pipeline and one cycle of marsh creation. The COE will request funding for dredging cycle 2 which is anticipated for FY2004

Total project cost for dredging cycle is $4,211,434. Initial project design forecasted a permanent pipeline constructed to facilitate dredging cycles 1-5. However, the permanent pipeline proved to be too expensive to construct and maintain and was dropped as a design feature. The project was advertised for bid as a component of the Calcasieu River and Pass Maintenance Dredging contract on February 16, 2001. Construction initiation was advanced in conjunction with an accelerated maintenance dredging schedule for the Calcasieu River. Phase 1 of this contract will place approximately 1,000,000 cubic yards of material into a confined area on the Sabine National Wildlife Refuge. It will build 125 acres of marsh with meandering trennasses and enhance the creation of an approximate 50-acre fringe. Additionally, 200 acres of marsh to the west may benefit from the sediment and nutrient flow.

Phase 1 construction was completed on February 26, 2002. The southern dike degradation will be completed by February 2003, and Cycle 1 planting will be conducted in spring 2003.

Total Priority List	8	993	$5,920,248	$7,400,310	125.0	$3,298,541 $3,384,218

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 9

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Freshwater Bayou Canal HR/SP - Belle Isle to Lock	TECHE	VERMI	529	01-Apr-2003 *			$1,498,967	$1,498,967	100.0	$688,217 $621,514

Status: Site visit held in January 2001 with Local Sponsor and landowner. Right of entry for surveys and borings obtained March 14, 2001. Met with Local Sponsor after survey data processed obtained consensus on cross-section and depth contour. Currently scheduled to ask for construction approval at the July 2004 Task Force meeting. Draft model CSA in review. 30% design review held June 2002. Project revised to include Area A only - shoreline protection work.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Opportunistic Use of Bonnet Carre Spillway	PONT	STCHA	177	01-Jun-2003			$150,706	$150,706	100.0	$26,062 $28,518

Status: A draft operations plan for opportunistic use of the spillway has been developed and is under review. Impacts to the environment, recreation, and economy are being looked at. The team is currently scheduled to ask for construction approval at the July 2003 Task Force meeting. A draft model CSA is in review.

Lake Pontchartrain Basin Foundation has partnered with the LSU Coastal Ecology Institute in the development of a nutrient budget model for Lake Pontchartrain. The nutrient budget report was approved by EPA on June 28, 2001.

This project involves no physical construction.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Periodic Intro of Sediment & Nutrients Along the Miss. River Demo (DEMO)	VARY	VARY		01-May-2003 *	01-Jan-2004		$109,730	$109,730	100.0	$39,402 $22,465

Status: Field site investigations have been completed. Development of sediment capacities at alternative sites is being undertaken.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Weeks Bay/Commercial Canal/GIWW SP	TECHE	IBERI	138	01-Jan-2003 *			$1,229,337	$1,229,337	100.0	$386,848 $390,915

Status: Fully funded Phase 1 cost for this project is $1,229,337. The project area includes approximately 2,900 acres of fresh to brackish marsh habitat.

The project kick-off was in April 2001 with the COE and DNR. Surveys, soils investigations, gage data, and environmental data are presently being gathered for assessment. A hydrologic model is being developed to assist in the understanding of water movement in this part of the basin. Shore protection alternatives are under evaluation.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	%	Actual Obligations/ Expenditures
Total Priority List 9			844				$2,988,740	$2,988,740	100.0	$1,140,529 $1,063,412

4 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 10

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Benney's Bay Sediment Diversion	DELTA	PLAQ	5,828	01-Apr-2003 *	01-Mar-2004		$1,076,328	$1,076,328	100.0	$358,387 $353,027

Status: Phase 1 initiated in spring 2001. Draft CSA under negotiation. 30% design review held September 2002.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Delta-Building Diversion at Myrtle Grove	BARA	JEFF	8,891				$3,002,114	$3,002,114	100.0	$1,292,894 $923,174

Status: The proposed NMFS/UNO fisheries modeling effort, and its relationship to required EIS input, has been discussed by the principal agencies involved with this project. The current view within the management team is that additional fisheries data collection and analysis will be required over and above the proposed modeling. At this time, it has been decided to begin assembling an inter-agency EIS team and allow them to outline major data and analytic requirements for the NEPA document. The required NEPA scoping meetings have been held and the scoping document is being complilied. An initial Value Engineering study is scheduled for the week of July 22, 2002.

WRDA may fund Phase 2.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Delta-Building Diversion North of Fort St. Philip	BRET	PLAQ	2,473	01-Jan-2004	01-Mar-2004	01-Jul-2004	$1,155,200	$1,155,200	100.0	$360,490 $328,351

Status: Phase 1 activities are progressing. A project team has been formed and a site visit has been made. Property owners are being identified and will be contacted to determine their willingness to allow project construction. Elevation surveys, subsurface soil data, and cultural resources surveys are underway. A hydrologic modeling study is being developed to determine the size of the diversion channel and the extent of project effects on salinity levels.

Total Priority List	10		17,192				$5,233,642	$5,233,642	100.0	$2,011,771 $1,604,552

3 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 11

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Grand Lake Shoreline Protection	MERM	CAMER	495	01-Jan-2004	01-Mar-2004	01-Aug-2004	$1,049,029	$1,049,029	100.0	$126,273 $126,273

Status: The Kickoff meeting was held April 2002. A draft CSA is under negotiation. A site visit was conducted in June 2002. The Phase 1 work plan was submitted to the P&E subcommittee in July 2002. Surveys of the project area are underway and should be completed by mid March 2003. Borings in the project area have been requested and should be completed by April 2003. The project is scheduled to seek construction authorization from the Task Force at the winter 2004 meeting.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Mississippi River Sediment Trap	DELTA	PLAQ	24,065		01-Jul-2004		$1,880,376	$1,880,376	100.0	$86,142 $18,665

Status:

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List	11		24,560				$2,929,405	$2,929,405	100.0	$212,415 $144,937

2 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 12

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Avoca Island Diversion & Land Building	TERRE	STMRY	143	15-Mar-2004			$2,229,876	$2,229,876	100.0	$6,049 $6,049

Status:

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Lake Borgne and Mississippi River-Gulf Outlet Shore Protection	PONT	STBER	266				$1,348,345	$1,348,345	100.0	$11,476 $11,476

Status:

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
South White Lake Shore Protection	MERM	VERMI	702				$1,588,085	$1,588,085	100.0	$15,418 $15,418

Status: Task Force approved Phase I funding. Project Delivery Team preparing information for Phase I Work Plan, Real Estate preparing to obtain Right-of-Entry for surveys, Engineering preparing survey request. Kick-off meeting and field trip scheduled for April 9, 2003.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
	Total Priority List	12	1,111				$5,166,306	$5,166,306	100.0	$32,943 $32,943

3 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Total	DEPT. OF THE ARMY, CORPS OF ENGINEERS		58,918				$66,792,999	$74,532,792	111.6	**$32,900,008** $31,719,454

29 Project(s)
14 Cost Sharing Agreements Executed
12 Construction Started
11 Construction Completed
4 Project(s) Deferred/Deauthorized

Notes:
1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	%	Actual Obligations/ Expenditures

Lead Agency: ENVIRONMENTAL PROTECTION AGENCY, REGION 6

Priority List Conservation Plan

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
State of Louisiana Wetlands Conservation Plan	ALL	COAST	0	13-Jun-1995 A	03-Jul-1995 A	21-Nov-1997 A	$238,871	$191,807	80.3	$191,807 $191,807

Status: The date the MIPR was issued to obligate the Federal funds for the development of the plan is used as the construction start date for reporting purposes.

Complete.

Total Priority List	Cons Plan	0	$238,871	$191,807	80.3	$191,807 $191,807

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 1

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Isles Dernieres (Phase 0) (East Island)	TERRE	TERRE	9	17-Apr-1993 A	16-Jan-1998 A	15-Jun-1999 A	$6,345,468	$8,745,210	137.8 !	$7,087,891 $6,991,240

Status: This phase of the Isles Dernieres restoration project was combined with Isles Dernieres, Phase I (Trinity Island), a priority list 2 project. Additional funds to cover the increased construction cost on lowest bid received were approved at the January 16, 1998 Task Force meeting.

Construction start was January 16, 1998. Hydraulic dredging was completed September 1998. Vegetation planting was completed June 1999.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 1			9				$6,345,468	$8,745,210	137.8	$7,087,891 $6,991,240

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 2

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Isles Dernieres (Phase 1) (Trinity Island)	TERRE	TERRE	109	17-Apr-1993 A	27-Jan-1998 A	15-Jun-1999 A	$6,907,897	$10,785,706	156.1 !	$9,360,012 $9,330,196

Status: Costs increased due to construction bids significantly greater than projected in plans and specifications. Additional funds to cover the increased project construction/dredging cost were approved at the January 16, 1998 Task Force meeting.

The 30' hydraulic dredge, the Tom James, mobilized at East Island on about January 27, 1998. Dredging was completed in September 1998. Vegetation plantings was completed June 1999.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 2			109				$6,907,897	$10,785,706	156.1	$9,360,012 $9,330,196

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 3

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Red Mud Demo (DEMO) [DEAUTHORIZED]	PONT	STJON	0	03-Nov-1994 A			$350,000	$470,500	134.4 !	$368,406 $368,406

Status: Facility construction is essentially complete; project was put on hold pending resolution of cell contamination by saltwater before planting occurred and has subsequently been deauthorized. Demonstration cells completed; no vegetation installed.

The Task Force approved the deauthorization of the project on August 7, 2001. Escrowed funds will be returned to Kaiser Aluminum and Chemical Corp.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Whiskey Island Restoration	TERRE	TERRE	1,239	06-Apr-1995 A	13-Feb-1998 A	15-Jun-2000 A	$4,844,274	$7,721,186	159.4 !	$7,299,482 $6,942,611

Status: At the January 16, 1998 meeting, the Task Force approved additional funds to cover the increased construction cost on lowest bid received.

Work was initiated on February 13, 1998. Dredging completed July 1998. Initial vegetation with spartina on bay shore, July 1998. Additional vegetation seeding/planting was carried out in spring 2000.

Total Priority List	3		1,239		$5,194,274	$8,191,686	157.7	$7,667,888 $7,311,016

2 Project(s)
2 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 4

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Compost Demo (DEMO) [DEAUTHORIZED]	CALC	CAMER	0	22-Jul-1996 A			$370,594	$425,333	114.8	$342,513 $210,627

Status: Plans and specifications have been finalized. All permits and construction approvals have been obtained.

The amount of compost vegetation needed has not yet been supplied. A smaller sized demonstration has been designed. Advertisement for construction bids has been made.

The Task Force approved deauthorization on January 16, 2002.

Total Priority List	4	0	$370,594	$425,333	114.8	$342,513 $210,627

1 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 5

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
				*********** SCHEDULES ***********			******** ESTIMATES ********			
Bayou Lafourche Siphon	TERRE	IBERV	988	19-Feb-1997 A			$24,487,337	$1,500,000	6.1	$1,497,881 $1,493,563

Status: Priority List 5 authorized funding in the amount of $1,000,000 for the FY 96 Phase 1 of this project. Priority List 6 authorized $8,000,000 for the FY 97 Phase 2 of this project. In FY 98, Priority List 7 authorized $7,987,000, for a project estimate of $16,987,000. At the January 20, 1999 Task Force meeting for approval of Priority List 8, $7,500,000 completed funding for the project, for a total of $24,487,337. EPA motioned to allow $16,095,883 from project funds be delayed and put to immediate use on PPL 8. The public has been involved in development of the scope of the evaluation phase. EPA proposes an alternative approach for siphoning and pumping 1,000 cfs year-round (versus the 2,000 cfs siphon only at high river times). Addition of pumps increases the estimated cost. Additional engineering is projected to be completed in 2000.

The Cost Sharing Agreement (CSA) was executed February 19, 1997. Preliminary draft report was distributed to Technical Committee members in October 1998. Additional hydrologic work by the U.S. Geological Survey and the COE. Additional geotechnical analysis has been conducted. Review has been conducted of technical reports and estimated costs is in progress

At the October 25, 2001 meeting, the Task Force agreed to proceed with Phase 1 Engineering and Design, and approved an estimate of $9,700,000, subject to several stipulations. The State of Louisiana will pay 50 percent of the Phase 1 E&D costs of $9.7 million, as agreed to by the State Wetlands Authority. The allocation of CWPPRA funds for Phase 1 E&D does not commit the Task Force to a specific funding level for project construction. A decision to proceed beyond the 30% design review will be made by the Task Force and the State.

Total Priority List 5	988	$24,487,337	$1,500,000	6.1	$1,497,881 $1,493,563

1 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Mississippi River Water Reintroduction into Bayou Lafourche	TERRE	IBERV	0	30-Jun-2002 *			$9,700,000	$9,700,000	100.0	$4,809,800 $104,547

Status: The Task Force, at the October 25, 2001 meeting, agreed to proceed with Phase 1 Engineering and Design (E&D) costs for the project, subject to five stipulations. The State of LA will pay for 50% of the Phase I E&D costs, estimated to total $9.7 million, as agreed to by the State Wetlands Authority (approximately $4.5 million). The allocation of CWPPRA funds for Phase 1 E&D does not commit the Task Force to a specific action. EPA has initiated preliminary activities, including evaluation of certain Value Engineering options and a sediment characterization study. EPA has contracted with CH2MHiLI to perform the sediment characterization study of Bayou Lafourche. The results will be used to determine the soil placement options for the dredged material. CH2MHiLL has also recently been selected to perform the Phase 1 Enginnering and Design for the project, and EPA and LDNR are currently negotiating the E&D contract with CH2MHiLL and hope to have them on-board by early 2003.

Total Priority List 5.1	0	$9,700,000	$9,700,000	100.0	$4,809,800 $104,547

0 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 6

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Boeuf Pump Station [DEAUTHORIZED]	TERRE	STMAR	0				$150,000	$3,452	2.3	$5,707 $5,707

Status: This was a 3-phased project. Priority List 6 authorized funding of $150,000; Priority List 7 was scheduled to fund $250,000; and Priority List 8 was scheduled to fund $100,000. Total project cost was estimated to be $500,000. By letter dated November 18, 1997, EPA notified the Technical Committee that they and LA DNR agree to deauthorize the project.

Deauthorization was approved at the July 23, 1998 Task Force meeting.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 6			0				$150,000	$3,452	2.3	$5,707 $5,707

1 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 9

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Marsh Creation South of Leeville	BARA	LAFOU	146	05-Oct-2000 A			$1,151,484	$1,433,393	124.5	$1,216,784 $187,188

Status: A cooperative agreement/cost share agreement has been executed. A Request for Statements of Interest and Qualifications has been issued and numerous responses received. A feasibility study report was received April 30, 2002, and is being reviewed by EPA and LDNR to assist in determination whether to proceed to engineering and design of Phase 1. Numerous issues have made it unlikely that the project can be completed as originally planned. EPA and LDNR are currently investigating other options at the request of parish officials.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
New Cut Dune/Marsh Restoration	TERRE	TERRE	102	01-Sep-2000 A			$7,393,626	$10,329,068	139.7 !	$9,005,604 $516,479

Status: Phase 2 construction funding was approved at the January 10, 2001 Task Force meeting. A September 6, 2001 Task Force fax vote approved an estimate increase of $1,335,000 for Phase 2 construction contract.

Construction contract was put on hold in May 2002, due to public concerns about the proposed borrow site (Monkey Bar/Borrow area W - located between East and Wine Island) for the project. EPA and LDNR are currently attempting to locate an alternate sand source.

EPA and LDNR are working with Weeks Marine and the Minerals Management Service to determine if sand can be utilized from Ship Shoal. Preliminary estimates from Weeks indicate the project can be completed within budget using Ship Shoal as the borrow source.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	ESTIMATES %	Actual Obligations/ Expenditures
Timbalier Island Dune/Marsh Restoration	TERRE	TERRE	273	05-Oct-2000 A	01-Jun-2003		$16,234,679	$20,092,804	123.8	$17,141,769 $839,575

Status: Project received Phase 2 approval at January 2003 Task Force meeting. Construction is anticipated to begin June 2003.

Total Priority List 9			521				$24,779,789	$31,855,265	128.6	$27,364,157 $1,543,241

3 Project(s)
3 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 10

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Lake Borgne Shoreline Protection	PONT	STBER	229	02-Oct-2001 A	01-Oct-2003		$1,334,360	$1,667,950	125.0	$1,767,490 $104,908

Status: Geotechnical investigation of the project area nearshore is underway.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Small Freshwater Diversion to the Northwestern Barataria Basin	BARA	STJAM	0	08-Oct-2001 A	01-May-2005		$1,899,834	$2,362,687	124.4	$2,003,216 $24,070

Status: Survey scope of work has been completed and will be executed soon. Landrights work for water level gauges is underway.

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	% (ESTIMATES)	Actual Obligations/ Expenditures
Total Priority List	10		229				$3,234,194	$4,030,637	124.6	$3,770,706 $128,978

2 Project(s)
2 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 11

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	% (ESTIMATES)	Actual Obligations/ Expenditures
River Reintroduction into Maurepas Swamp	PONT	STJON	0	04-Apr-2002 A	01-Jan-2005	30-Nov-2008	$5,434,288	$6,780,307	124.8	$5,621,100 $79,044
Status: DNR is having land cost estimates made on several tracts of land. Once all appraisals are received and reviewed, DNR will proceed with contacting the owners with proposals to possibly acquire options on the properties.										
Ship Shoal: Whiskey Island West Flank Restoration	TERRE	TERRE	182		01-Apr-2004		$2,998,960	$3,742,053	124.8	$3,261,288 $244
Status: DNR is in the process of making a final determination of RSIQ selection for Phase 1 efforts. Engineering and design tasks will begin shortly.										
Total Priority List	11		182				$8,433,248	$10,522,360	124.8	$8,882,388 $79,288

2 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	% (ESTIMATES)	Actual Obligations/ Expenditures
Priority List 12										
Bayou Dupont Sediment Delivery System	BARA Status:	JEFF	400				$2,192,735	$2,192,735	100.0	$559,235 $0
Total Priority List 12			400				$2,192,735	$2,192,735	100.0	$559,235 $0

1 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Total ENVIRONMENTAL PROTECTION AGENCY, REGION 6	3,677	$92,034,407	$88,144,191	95.8	**$71,539,985** $27,390,210

16 Project(s)
12 Cost Sharing Agreements Executed
3 Construction Started
3 Construction Completed
3 Project(s) Deferred/Deauthorized

Notes:
1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Lead Agency: DEPT. OF THE INTERIOR, FISH & WILDLIFE SERVICE

Priority List 1

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Sauvage Refuge #1	PONT	ORL	1,550	17-Apr-1993 A	01-Jun-1995 A	30-May-1996 A	$1,657,708	$1,629,403	98.3	$1,144,514 $1,137,662
	Status:	FWS and LDNR are presently developing a project Operation and Maintenance Plan.								
Cameron Creole Watershed Hydrologic Restoration	CALC	CAMER	865	17-Apr-1993 A	01-Oct-1996 A	28-Jan-1997 A	$660,460	$991,295	150.1 !	$655,014 $652,993
	Status:	Complete.								
Cameron Prairie Refuge Erosion Prevention	MERM	CAMER	247	17-Apr-1993 A	19-May-1994 A	09-Aug-1994 A	$1,177,668	$1,227,123	104.2	$1,002,066 $998,712
	Status:	Complete.								
Sabine Refuge Bank Protection	CALC	CAMER	5,542	17-Apr-1993 A	24-Oct-1994 A	01-Mar-1995 A	$4,895,780	$1,602,613	32.7	$1,285,261 $1,283,825
	Status:	Complete.								
Total Priority List 1			8,204				$8,391,616	$5,450,434	65.0	$4,086,855 $4,073,192

4 Project(s)
4 Cost Sharing Agreements Executed
4 Construction Started
4 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Priority List 2

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Sauvage Refuge #2	PONT	ORL	1,280	30-Jun-1994 A	15-Apr-1996 A	28-May-1997 A	$1,452,035	$1,642,552	113.1	$1,135,709 $1,127,242

Status: FWS and LDNR are presently developing a project Operation and Maintenance Plan.

Total Priority List 2	1,280	$1,452,035	$1,642,552	113.1	$1,135,709 $1,127,242

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 3

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Sabine Refuge Structure Replacement (Hog Island)	CALC	CAMER	953	26-Oct-1996 A	01-Nov-1999 A	30-Mar-2003 *	$4,581,454	$4,517,356	98.6	$3,256,072 $3,127,234

Status:

Construction began the week of November 1, 1999, and was originally projected to be completed by June 2001. The Headquarters Canal structure was completed the week of February 9, 2000. The Hog Island Gully replacement structure was completed in August 2000. Work on the final structure, West Cove, was substantially completed by June 2001. The Hog Island Gully and West Cove structures are not fully operational due to an electrical service problem.

The project completion date has been extended to March 2003 because of a continued electrical problem with the structure motors. The three-phase electrical service to the structures is not the proper three-phase. Transformers and filters were added to the Hog Bayou and West Cove structures by December 2001, but operation was not totally satisfactory. On March 12, 2002, the Rotorque representative (manufacturer of the motors and Logic controllers) corrected problems with the Hog Island Gully Structure (motors running in reverse); that company has certified that the motors are now operating properly. On March 13, 2002, representatives of the contractor, F. Miller and Sons, and the NRCS successfully tested structure operation in manual mode. NRCS engineers completed observations of structure operation during the automatic mode in June 2002 and determined that the structures continued to operate incorrectly in that mode. It was determined that the Logic Controllers are so sensitive they can determine that power to the motors is not the correct 3-Phase. The controllers are thus causing motor malfunctions even with filters and transformers in place.

The NRCS has contracted with an electrical engineering consultant to provide recommendations to correct the logic controller motor problems. The consultant is currently investigating structure operation problems at the Hog Island Gully and West Cove structures, and will prepare a report in the near future recommending corrective actions. One possible solution could be to replace the existing logic controllers with less-sensitive controllers able to operate properly with the existing 3-Phase electrical current available.

Total Priority List 3	953	$4,581,454	$4,517,356	98.6	$3,256,072 $3,127,234

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Priority List 5

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Grand Bayou / GIWW Freshwater Diversion	TERRE	LAFOU	199	01-Mar-2003 *	01-Apr-2005	01-Nov-2005	$5,135,468	$8,209,722	159.9 !	$1,056,847 $631,933

Status:

FTN and Associates is preparing recommendations, data needs, and estimated costs for conducting a hydrologic modeling evaluation of the down-sized Grand Bayou Project. Since the Morganza to the Gulf Hurricane Protection Project and the Grand Bayou Project both need to address their project’s respective water level impacts to the same wetland area, it is hoped that model development costs could be shared between the two projects. However, Morganza Project funding has not yet been authorized by Congress, hence, the Morganza Project may be unable to share in modeling expenses at the present time, depending on the magnitude of modeling costs. Corps of Engineers personnel have proposed to hold a meeting to discuss these issues.

Total Priority List 5	199	$5,135,468	$8,209,722	159.9	$1,056,847 $631,933

1 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 6

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	% (ESTIMATES)	Actual Obligations/ Expenditures
Lake Boudreaux Basin Freshwater Intro & Hydrologic Mgmt	TERRE	TERRE	619	22-Oct-1998 A	01-May-2004	01-Jul-2005	$9,831,306	$10,519,383	107.0	$628,879 $551,454

Status:

A preliminary survey (conducted in January 2003) of landowners potentially affected by the construction of the proposed conveyance channel has indicated that they would generally accept project construction provided there was sufficient compensation for impacts to property usage and values. Consequently, the DNR is initiating a general appraisal of affected properties to better determine property value impacts, to inform landowners of compensation available for project impacts, and to help establish the location of the channel for engineering purposes. If landrights for the preferred conveyance channel route cannot be obtained, the conveyance channel will be re-located to properties where landowners have already voiced approval.

Installation of additional water level monitoring stations and elevation surveys of existing and proposed monitoring stations are underway. The resulting data will enable engineers to more accurately estimate the project's freshwater introduction rates and the project-induced water level rise in the receiving area and in Bayou Grand Caillou. This together with revised construction costs and landrights acquisition, will allow the project to proceed to the 30% engineering and design stage.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
				*********** SCHEDULES ***********			******** ESTIMATES ********			
Nutria Harvest for Wetland Restoration (DEMO)	COAST	COAST	0	27-Oct-1998 A	20-Dec-1998 A	30-Sep-2002 *	$2,140,000	$2,140,000	100.0	$1,290,404 $514,666

Status:

During FY 2001 and 2002, the LDWF performed the following tasks: 1) Produced a 2001 herbivory damage survey report and map on December 31, 2001 ("A Survey of Nutria Herbivory Damage in Coastal Louisiana in 2001," by Edmond Mouton, G. Linscombe and S. Hartley); 2) Coordinated with consultants to develop and implement various nutria meat marketing activities. Marketing activities included LDWF staff activities and contracting with consultants to assist in: a) developing and evaluating local, national, and international nutria meat market potential for human consumption; b) developing a nutria meat marketing plan; c) participating in festivals and chef's competitions; d) distributing nutria meat to the public through sales at grocery stores, restaurants, and other retail outlets; e) determining nutria meat processing costs, product price structure, and potential meat production volume; and f) planning product and market-specific promotional and advertising activities based on the Nutria Marketing Strategic Report.

During October - December 2001, LDWF purchased nutria meat from processors and used it to make gumbo, sausage and nutria nuggets. LDWF participated in the following events by providing nutria dishes; the New Iberia Golf Classic, GIS Day at the USGS Wetlands Center, the CWPPRA December 14, 2001, dedication at Sabine NWR (160 people), three events by Chef Parola, Louisiana State Archives (200 people), Baton Rouge Catholic High "Food Festival" (300 people), an event at the Louisiana State Capitol (400 people), and the New Orleans City Park's "Celebration in the Oaks Party". LDWF is continuing work with the LA Culinary Arts Institute to develop nutria products for retail and wholesale such as nutria nuggets, nutria spring rolls, nutria sausage, nutria tamales, nutria boudin, and nutria jambalaya.

LDWF issued a contract on February 1, 2002, to the Weill Agency for consultant assistance in the following nutria meat marketing categories: 1) to provide information to the public concerning nutria meat nutrition and nutria's impact on coastal wetlands; 2) to develop new markets, and 3) to create positive publicity for nutria meat by developing partnerships. April to July, 2002, LDWF nutria promotion activities included presentation of nutria products at the following events: 1) Nutria Beignets at the "Wild Beast Fest" in Plaquemine, LA (350 guests); 2) Nutria Beignets at the Old State Capitol (250 guests including State Legislators); 3) assisted the Weill Agency in a grocery store (Two Matherns's stores) promotion presenting smoked sausage prepared by Bellue's in Baton Rouge, and 4) finally, LDWF is developing a Nutria Web site (www.nutria.com). The Weill Agency contract activities for the April-June 2002 quarter included: 1) promoting nutria and serving nutria gumbo, at the "Wild Beast Feast" in Larose, LA; 2) provided nutria meat nutritional information at the "The Around the World/Digestive Health Foundation of LA"; 3) served Nutria Beignets at the "Beast Feast" in Port Allen, LA; 4) served smoked nutria sausage at "Matherns's Supermarket Road Show" in Baton Rouge, LA; 5) served nutria sausage at the "Gonzales Jambalaya Festival" in Gonzales, LA; and 6) finally, served nutria jambalaya at the "Baton Rouge Family Day in the Park".

The LDWF 1999, 2000, and 2001 nutria coastal damage surveys and reports indicated continued nutria-related marsh damages in the Louisiana deltaic plain at a level of approximately 100,000 acres per year impacted. Because of the January

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

16, 2002, Task Force approval of the larger Nutria Control Project, the LDWF will discontinue providing incentive payments to trappers and conducting nutria herbivory surveys under this demonstration project. Those two items will be funded under the larger project. However funding for nutria meat processors enrolled in the program as well as nutria meat marketing activities will continue under this demonstration project. A decision to continue this demonstration project will be made by project sponsors at the end of 2002 after examining the results from the marketing contract. LDWF, with Chef Parola, will participate in the 2002 New Orleans Culinary Classic and the Louisiana Restaurant Food Exposition (August 3 thru August 5 2002).

From July through September 2002 the following activities were completed: A contract chef (Philipe Parola): 1) prepared "Nutria Gumbo" at the Royal Sonesta Hotel in New Orleans for 250 members of the annual meeting of the Council for Development of French in Louisiana; 2) prepared "Nutria Gumbo" at the Renaissance Hotel for the Bastille Day Celebration for 500 guests; 3) trained the kitchen staff of Woods & Waters of Louisiana on the preparation of "Louisiana Nutria Beignets Appetizers;" 4) served "Nutria Gumbo" at the Cancer Society Benefit in Baton Rouge for 800 guests; 5) attended and served 200 guests at the Wild Game Festival in the Lafayette CajunDome; and 6) participated in the 2002 New Orleans Culinary Classic and the Louisiana Restaurant Food Exposition August 3 to 5, 2002. LDWF sponsored a "Nutria Meat Category" at the Exposition. The Louisiana Culinary Institute, under contract, traveled to China via an invitation from Jin Hong Food Trade Co., LTD and demonstrated different cooking methods and recipes for nutria to a team of Chinese chefs and marketing staff. The LDWF staff worked with the Weill Agency to participate in The Louisiana Restaurant Association Expo in New Orleans and the Alternative Fuel Vehicles and Food Expo in Gonzales at the Lamar Dixon Expo Center. The Weill Agency updated the web site (www.nutria.com) with new upcoming events, news releases and new nutria products and worked with product developers on packaging, labeling and marketing nutria products. Chef Parola and the Weill Agency developed nutria meat products for the wholesale and retail food service industry, such as nutria sausage, nutria spring rolls and nutria nuggets. Pete Giovinco from Deer Depot is making "Nutria Snack Sticks" and "Nutria Jerky" for potential marketing.

Total Priority List	6	619	$11,971,306	$12,659,383	105.7	$1,919,282 $1,066,120

2 Project(s)
2 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 9

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Freshwater Introduction South of Highway 82	MERM	CAMER	296	12-Sep-2000 A	01-Feb-2004	01-Oct-2004	$607,138	$726,223	119.6	$113,028 $112,907

Status:

The project was approved for Phase I engineering and design on January 11, 2000. An initial implementation meeting was held in April 2000 and field trips were held in May and June 2000. A surveying meeting was held July 5, 2000. The final Cost Share Agreement was signed by FWS and DNR on September 12, 2000. Elevational surveys of marsh levels and existing water monitoring stations and control points were completed by Lonnie Harper and Associates October 26, 2000. Three more continuous recorders were established in May and June 2001 at the Unit 14 Boathouse, South Lake 14 and in Cop Cop Bayou.

A meeting to discuss hydrodynamic modeling was held October 9, 2001, and a modeling field trip held on November 30, 2001. Modeling and surveying cost estimates were discussed on December 11, 2001. The Notice to Proceed for the modeling and surveying was issued on January 28, 2002 by DNR. Additional continuous water level and salinity recorders were installed in March 2002 at Grand Volle Lake and Rollover Bayou to support the modeling study. Modeling field elevation and cross-sectional surveying was completed in March 2002, model calibration was to be completed by July 2002, initial modeling results were to be presented in August 2002, and the final modeling report was to be completed by October 2002; however, data corrections caused a delay in this schedule. An interagency meeting was held May 24, 2002, to review the Fenstermaker model setup and the status of the modeling work plan. The one-dimensional "Mike 11" model will be used for the analysis. Landrights have been obtained to allow pre-construction modeling data collection and surveying on Miami Corporation property.

In October 2001, Erick Swenson of the LSU Coastal Ecology Institute completed a hydrologic study of the LA Hwy 82 area that concluded that a water level difference existed north and south of LA Hwy 82 sufficient to flow water north to south. The project hydrology is currently being modeled as described above.

The modeling schedule has been delayed due to the difficulty in applying the barometric pressure correction to two unvented LDWF continuous data recorders. Model calibration was completed November 21, 2002, with the project-sponsor acceptance of the calibration results. Model verification will be completed November 21 to December 11, 2002. A model verification meeting will be held December 12, 2002.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Mandalay Bank Protection (DEMO)	TERRE	TERRE		06-Dec-2000 A	25-Apr-2003 *	01-Sep-2003	$1,194,495	$1,869,659	156.5 !	$1,064,466 $84,797

Status: New bids were opened on December 18, 2002. The low bid was within the project budget and construction is scheduled to begin by April 1, 2003.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	ESTIMATES %	Actual Obligations/ Expenditures
Total Priority List 9			296				$1,801,633	$2,595,882	144.1	$1,177,494 $197,704

2 Project(s)
2 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 10

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Delta Management at Fort St. Philip	BRET	PLAQ	267	16-May-2001 A	01-Jun-2003	01-Aug-2003	$3,183,938	$2,053,216	64.5	$1,380,130 $28,439

Status: Due to difficulty in obtaining landrights for one of the crevasses, the project sponsors have applied for a modification to the Section 404 permit. Construction is anticipated to begin in June 2003.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
East Sabine Lake Hydrologic Restoration	CA/SB	CAMER	393	17-Jul-2001 A	01-Mar-2004		$1,425,447	$1,781,809	125.0 !	$880,068 $339,071

Status:

Phase I funding was approved by the CWPPRA Task Force on January 10, 2001. A design orientation interagency meeting was held February 14, 2001, and an orientation field trip was completed on March 27, 2001. FWS, DNR and the NRCS completed a joint cost-share agreement on July 17, 2001. NRCS contracted with FTN for hydrodynamic modeling services. Initial modeling meetings with FTN were held in August and November 2001. Phase I hydrodynamic modeling consists of reconnaissance, gathering of existing data, model selection and model geometry establishment. Phase II modeling will include initial model calibration (without-project and with-project scenario) model runs. DNR contracted to establish survey monument control points in December 2001. NRCS completed most cross sectional surveys by July 2002. DNR installed three continuous water level and salinity recorders in September 2001, and contracted the installation and maintenance of five more in January 2002 for modeling purposes. FTN installed an additional continuous recorder near Johnsons Bayou in spring 2002. The continuous recorder salinity and water level data will be collected for 1 year, primarily for model use. The modeling is be completed by Spring 2003. Benchmark and cross sectional surveys were completed in March 2002; marsh elevation surveys were completed by May 2002.

The sponsors have decided to separate project components into two construction units. Construction Unit 1 will include the earthen terraces, shoreline stablization, and minor hydrologic structures; Construction Unit 2 will include the larger hydrologic restoration structures now being modeled. Landrights work was initiated in February 2002. Few landrights problems are anticipated because most of project is located on the Sabine NWR.

A field inspection of the Pines Ridge weir component and surrounding marshes was completed in June 2002. A Construction Unit 1 meeting was held September 4, 2002, to focus on the design and placement of the earthen terraces and other CU 1 components, as well as the status of the modeling study for Construction Unit 2 components. A field trip among project sponsors is planned for December 2002 to inspect existing Sabine NWR terraces and to determine the east Sabine Lake shoreline's suitability for vegetative plantings. Revised draft permit drawings for CU 1 components were prepared by NRCS in November 2002. A 30% Design Conference for Unit 1 components could be held in early 2003.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Grand-White Lake Landbridge Restoration	MERM	CAMER	213	24-Jul-2001 A	01-Jun-2003	30-Dec-2003	$9,635,124	$5,762,252	59.8	$328,306 $119,355

Status:

The Task Force approved Phase 1 engineering and design funding on January 10, 2001. The Cost Share Agreement between LDNR and the USFWS was executed on July 24, 2001 and executed by the state Office of Contractual Review on August 10 2001. On December 12, 2001, LDNR certified that landrights have been completed with Miami Corp., Long-Mallard Bay LLC, and the Cameron Parish School Board.

Project sponsors received conditional Phase II construction funding approval by the CWPPRA Task Force on August 7, 2002. The Corps (Section 404) permit public notice was issued September 17, 2002. A coastal zone consistency determination was received from DNR on September 19, 2002. Notice of Availability of the draft Environmental Assessment was published in the Federal Register on October 19, 2002 and completed on November 19, 2002. The LA Department of Environmental Quality Water Quality Certification was received October 28, 2002. The Corps Section 303(e) determination requested on July 13, 2002, but has not been received. The NRCS Overgrazing Determination was received August 30, 2002. NRCS engineers completed final engineering designs. A favorable 95% Design Review was held September 12, 2002. The NRCS has completed revised final designs and specifications; the project is ready for construction contracting pending receipt of the Corps Section 404 permit and Section 303(e) determination, and transfer of funding from the Corps.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
North Lake Mechant Landbridge Restoration	TERRE	TERRE	604	16-May-2001 A	30-May-2003	31-Jul-2005	$2,383,052	$2,383,052	100.0	$442,762 $40,864

Status: Shoreline plantings are still on schedule to be completed in the spring/summer of 2003. The preliminary design (30%) of the rest of the project features has been moved back to early summer of 2003. Oyster surveys of borrow areas will occur in the summer of 2003. Request for Phase 2 construction funds is anticipated in August, 2003.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Terrebonne Bay Shore Protection Demonstration (DEMO)	ALL	TERRE	0	24-Jul-2001 A	30-Jul-2003	31-Oct-2003	$2,006,373	$2,507,966	125.0	$36,679 $36,349

Status: The 95% design review was held on March 13, 2003. Permits have been applied for and oyster surveys will be completed within the next 2 months. Construction approval will be requested at the April 2003 Task Force Meeting. Actual construction start is dependent on resolution of any anticipated oyster lease impacts.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List	10		1,477				$18,633,934	$14,488,295	77.8	$3,067,945 $564,078

5 Project(s)
5 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 11

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Dedicated Dredging on the Barataria Basin Landbridge	BARA	JEFF	564	03-Apr-2002 A	01-Jul-2004	01-Jul-2005	$2,294,410	$2,868,013	125.0 !	$27,418 $2,004

Status: A Scope of Work for bathymetric surveys and geotechnical investigations has been reviewed and should be conducted during summer 2003. A Phase 2 request for construction approval is anticipated at the January 2004 Task Force meeting.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
South Grand Cheniere Hydrologic Restoration	MERM	CAMER	440		01-Jul-2004		$2,358,420	$2,948,025	125.0	$837,271 $4,432

Status: The project implementation meeting and field trip was held on March 13, 2002, at Rockefeller Refuge, attended by FWS, LDNR, LDWF, NRCS, landowner representatives, and consulting engineers. A hydrodynamic modeling meeting was held on May 6, 2002, to discuss cost and time estimates and the benefits of modeling this project along with the Little Pecan Bayou HR project. The Notice to Proceed for the project surveying, continuous water level and salinity recorder deployment, and modeling contract was issued to Fenstermaker and Associates on June 14, 2002 by LDNR. Surveys and the installation of continuous water level and salinity recorders necessary for hydrodynamic modeling have been completed. The modeling work plan was submitted in July 2002, and surveying was completed by August 2002. Data collection and model initialization for model calibration is continuing. Model calibration should be completed by Spring 2003.

A landrights meeting was held October 17, 2002, between project sponsors and the M. O. Miller Estate (the major landowners). NRCS personnel described the Little Pecan Bayou Freshwater Introduction Project goals and components at this landowner meeting due to some project area overlap between the two projects.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
				*********** SCHEDULES ***********			******** ESTIMATES ********			
West Lake Boudreaux Shoreline Protection & Marsh Creation	TERRE	TERRE	145	03-Apr-2002 A	01-May-2004		$1,322,354	$1,652,943	125.0 !	$617,505 $10,888

Status: A contract was issued to Burns, Cooley, and Dennis on 2/27/03 for the geotechnical investigation, with the understanding tha the contractor has 90 days to complete their work and deliver the report to NRCS. The survey work should be completed within the week and DNR is already working on the landrights aggreement so that contacting landowners can begin soon.

Total Priority List 11	1,149		$5,975,184	$7,468,981	125.0	$1,482,194 $17,324

3 Project(s)
2 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Total DEPT. OF THE INTERIOR, FISH & WILDLIFE SERVICE	14,177		$57,942,630	$57,032,604	98.4	**$17,182,399** $10,804,827

19 Project(s)
17 Cost Sharing Agreements Executed
7 Construction Started
5 Construction Completed
0 Project(s) Deferred/Deauthorized

Notes:

1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Lead Agency: DEPT. OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE

Priority List 1

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Fourchon Hydrologic Restoration [DEAUTHORIZED]	TERRE	LAFOU	0				$252,036	$7,703	3.1	$7,703 $7,703

Status: In a meeting on October 7, 1993, Port Fourchon conveyed to NMFS personnel that any additional work in the project area could be conducted by the Port and they did not wish to see the project pursued because they question its benefits and are concerned that undesired Government / general public involvement would result after implementation.

Deauthorized.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Lower Bayou LaCache Hydrologic Restoration [DEAUTHORIZED]	TERRE	TERRE	0	17-Apr-1993 A			$1,694,739	$99,625	5.9	$129,909 $129,909

Status: In a public hearing on September 22, 1993, with landowners in the project area, users strenuously objected to the proposed closure of the two east-west connections between Bayou Petit Caillou and Bayou Terrebonne. NMFS received a letter from LA DNR, dated February 6, 1995, recommending deauthorization of the project. NMFS forwarded the letter to COE for Task Force approval.

Deauthorized.

Total Priority List 1			0				$1,946,775	$107,328	5.5	$137,612 $137,612

2 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
2 Project(s) Deferred/Deauthorized

Priority List 2

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Atchafalaya Sediment Delivery	ATCH	STMRY	2,232	01-Aug-1994 A	25-Jan-1998 A	21-Mar-1998 A	$907,810	$2,559,023	281.9 !	$2,463,258 $1,964,256

Status: Project cost increase was approved by the Task Force at the January 16, 1998 meeting.

Construction project complete. First costs accounting underway.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Big Island Mining	ATCH	STMRY	1,560	01-Aug-1994 A	25-Jan-1998 A	08-Oct-1998 A	$4,136,057	$7,550,903	182.6 !	$7,280,793 $6,634,031

Status: Project cost increase was approved by the Task Force at the January 16, 1998 meeting.

Construction project complete. First costs accounting underway.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Point Au Fer Canal Plugs	TERRE	TERRE	375	01-Jan-1994 A	01-Oct-1995 A	08-May-1997 A	$1,069,589	$2,919,782	273.0 !	$2,783,892 $2,399,709

Status: Construction for the project will be accomplished in two phases. Phase I construction on the wooden plugs in the oil and gas canals in Area 1 was completed December 22, 1995. Phase II construction in Area 2 has been delayed until suitable materials can be found to backfill the canal fronting the Gulf of Mexico. Phase II construction completed in May 1997. Task Force approved project design change and project cost increase at December 18, 1996 meeting. Phase III was authorized and a cooperative agreement awarded on August 27, 1999. Phase III was completed in spring 2000.

Closing out cooperative agreement between NOAA and LADNR.

Total Priority List	2	4,167	$6,113,456	$13,029,708	213.1	$12,527,943 $10,997,996

3 Project(s)
3 Cost Sharing Agreements Executed
3 Construction Started
3 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Priority List 3

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Perot/Bayou Rigolettes Marsh Restoration [DEAUTHORIZED]	BARA	JEFF	0	03-Mar-1995 A			$1,835,047	$20,963	1.1	$20,963 $20,963

Status: A feasibility study conducted by LA DNR indicated that possible wetlands benefits from construction of this project are questionable. LA DNR has indicated a willingness to deauthorize the project. In April 1996, LA DNR had asked to reconsider the project with potential of combining this with two other projects in the watershed. Project deauthorized at January 16, 1998 Task Force meeting.

Deauthorized.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
East Timbalier Island Restoration (Phase 1)	TERRE	LAFOU	1,913	01-Feb-1995 A	01-May-1999 A	01-May-2001 A	$2,046,971	$4,040,728	197.4 !	$3,914,132 $3,611,426

Status: Construction completed in December 1999. Aerial seeding of the dune platform was achieved in spring 2000, and the installation of sand fencing was completed September 30, 2000. Vegetative dune plantings were completed May 1, 2001.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Lake Chapeau Marsh Creation & Hydrologic Restoration	TERRE	TERRE	509	01-Mar-1995 A	14-Sep-1998 A	18-May-1999 A	$4,149,182	$5,379,987	129.7 !	$5,192,690 $4,313,866

Status: Construction complete. Vegetative plantings were installed in spring 2000.

Closing out cooperative agreement between NOAA and LADNR.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Lake Salvador Shore Protection (DEMO)	BARA	STCHA	0	01-Mar-1995 A	02-Jul-1997 A	30-Jun-1998 A	$1,444,628	$2,543,098	176.0 !	$2,899,478 $2,422,791

Status: Phase 1 was completed September 1997. Phase 2 is shoreline protection between Bayou desAllemnands and Lake Salvador. Construction began in April 1998 and completed in June 1998. Final first costs have been finalized.

Closed out cooperative agreement between NOAA and LADNR. First costs accounting undersay.

Project has served its demonstration purpose and is being removed by DNR with O&M funds, summer of 2002.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 3			2,422				$9,475,828	$11,984,776	126.5	$12,027,263 $10,369,046

4 Project(s)
4 Cost Sharing Agreements Executed
3 Construction Started
3 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 4

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
East Timbalier Island Restoration (Phase 2)	TERRE	LAFOU	215	08-Jun-1995 A	01-May-1999 A	31-Dec-2003	$5,752,404	$13,765,015	239.3 !	$12,638,717 $7,206,351

Status: NOAA and DNR is currently closing out the cooperative agreements for East Tinbalier Island Phase 1 and 2. Considering the damage invoked on the island as a result of Hurricane Lily and Tropical Storm Isadore, future construction will be reassessed pursuant to engineering feasibility and the Phase 2 prioritization process.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Eden Isles East Marsh Restoration [DEAUTHORIZED]	PONT	STTAM	0				$5,018,968	$39,026	0.8	$39,025 $39,025

Status: NMFS letter of September 8, 1997 requested the CWPPRA Task Force to move forward with deauthorization of this project. Bids were placed twice to acquire the land; both times they were rejected due to higher bids by private developers. Project deauthorized at January 16, 1998 Task Force meeting.

Deauthorized.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List	4		215				$10,771,372	$13,804,041	128.2	$12,677,743 $7,245,377

2 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 5

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Little Vermilion Bay Sediment Trapping	TECHE	VERMI	441	22-May-1997 A	10-May-1999 A	20-Aug-1999 A	$940,065	$886,030	94.3	$833,844 $563,832

Status: Construction completed in August 1999. Cooperative agreement being closed out. First costs accounting underway.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Myrtle Grove Siphon	BARA	PLAQ	1,119	20-Mar-1997 A			$15,525,950	$502,459	3.2	$488,018 $488,018

Status: The 5th Priority List authorized funding in the amount of $4,500,000 for the FY 96 Phase 1 of this project. Priority List 6 authorized funding in the amount of $6,000,000 for FY 97. Priority List 8 is authorized to fund the remaining $5,000,000. Total project cost is estimated to be $15,525,950.

NOAA and LADNR are closing out the cooperative agreement and returning remaining project funds to the CWPPRA program. Project will remain active as authorized.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	%	Actual Obligations/ Expenditures
Total Priority List 5			1,560				$16,466,015	$1,388,489	8.4	$1,321,862 $1,051,850

2 Project(s)
2 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 6

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Black Bayou Hydrologic Restoration	CALC	CAMER	3,594	28-May-1998 A	01-Jul-2001 A		$6,316,800	$6,382,511	101.0	$6,121,096 $3,529,366

Status: Repairing of four (4) failed earthen plugs along GIWW, behind rock dike, will begin in April 2003 and be complete by May 30, 2003.

Second phase of vegetative plantings will begin in June 2003.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Delta-Wide Crevasses	DELTA	PLAQ	2,386	28-May-1998 A	21-Jun-1999 A	31-Dec-2014	$5,473,934	$4,732,653	86.5	$2,324,883 $528,965

Status: Currently permitting for next construction cycle. Construction anticipated for mid-late 2003.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Sediment Trapping at the Jaws	TECHE	STMAR	1,999	28-May-1998 A	01-Feb-2004	31-May-2004	$3,167,400	$3,392,135	107.1	$3,067,571 $284,643

Status: Engineering and design has been completed. The Environmental Assessment is out for review by CWPPRA agencies. Comment period for permit has ended with no adverse comments submitted. Request for construction funding will be made at the April Task Force Meeting.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 6			7,979				$14,958,134	$14,507,299	97.0	$11,513,550 $4,342,973

3 Project(s)
3 Cost Sharing Agreements Executed
2 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 7

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Grand Terre Vegetative Plantings	BARA	JEFF	127	23-Dec-1998 A	01-May-2001 A	01-Jul-2001 A	$928,895	$883,233	95.1	$811,091 $299,776

Status: Planting of 3,100 units each of bitter panicum, gulf cordgrass, and marshhay cordgrass on beach nourishment/dune area, and installation of approximately 35,000 smooth cordgrass and 800 black mangrove was completed in June 2001. Monitoring is underway. Project area is being evaluated for additional plantings in 2003/2004.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Pecan Island Terracing	MERM	VERMI	442	01-Apr-1999 A	15-Dec-2002 A	15-Aug-2003	$2,185,900	$2,862,806	131.0 !	$2,451,740 $368,772

Status: Construction began in late December 2002. Approximately 34% of the terraces have been completed and accepted to date. Construction is scheduled to be completed by the end of May 2003. Planting of the terraces will be initated during May 2003.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 7			569				$3,114,795	$3,746,039	120.3	$3,262,830 $668,547

2 Project(s)
2 Cost Sharing Agreements Executed
2 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Priority List 8

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou Bienvenue Pumping Station/Terracing [DEAUTHORIZED]	PONT	STBER	0	01-Jun-2000 A			$3,295,574	$186,312	5.7	$212,140 $186,436

Status: Cooperative Agreement awarded in June 1, 2000. Preliminary design analyses indicate that terrace construction significantly more costly than originally estimated due to poor geo-technical condition. The project is estimated to cost between $17 and $20 million to build.

At the January 16, 2002 Task Force meeting, DNR and NOAA/NMFS requested initiation of the deauthorization procedure. Deauthorization was approved by the Task Force at the April 16, 2002 meeting.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Hopedale Hydrologic Restoration	PONT	STBER	134	11-Jan-2000 A	01-Apr-2003 *	01-Jul-2003	$2,179,491	$2,423,247	111.2	$2,075,059 $356,568

Status: Cooperative Agreement was awarded January 11, 2000. Engineering and design is complete, with design surveys, geo-technical investigations and hydrologic modeling complete. Landrights for the major project feature are complete. Draft EA scheduled for March 2003, and public notice periods for permits are complete. Both the Monitoring and Operations and Maintenance Plans are in final review.

Total Priority List 8		134	$5,475,065	$2,609,559	47.7	$2,287,199 $543,004

2 Project(s)
2 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 9

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Castille Pass Sediment Delivery	ATCH	STMRY	589	29-Sep-2000 A			$1,484,633	$1,855,792	125.0 !	$1,494,957 $282,029

Status: Hydrodynamic and sediment modeling is underway. Engineering and design has been initiated.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Chandeleur Islands Restoration	PONT	STBER	220	10-Sep-2000 A	01-Jun-2001 A	01-Sep-2003	$1,286,718	$1,596,958	124.1	$1,443,237 $508,168

Status: Cooperative Agreement was awarded September 10, 2000. Vegetative planting is scheduled for spring, 2001, and are phased over two years.

Pilot planting project completed in June, 2000. First phase of vegetative plantings completed July 2001 with installation of approximately 80,000 smooth cordgrass plants along 6.6 miles of overwash fan perimeters. Project area is being evaluated for additional plantings in 2003.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
East/West Grand Terre Islands Restoration	BARA	JEFF	472	21-Sep-2000 A	01-Apr-2004	01-Sep-2004	$1,856,203	$2,312,023	124.6	$1,876,010 $500,353

Status: Cooperative Agreement was awarded September 21, 2000. Preliminary geotechnical investigations of potential sand sources is complete. Additional detailed geotechnical investigations are required to accurately identify and delineate sand sources. Data acquisition for modeling complete, and preliminary modeling results for design alternatives is complete; additional modeling required to complete project performance assessments. Landrights in progress. Preliminary assessment of oyster resources is complete. Preliminary design review was delayed due to the need for additional geotechnical information and project performance projections.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Four-Mile Canal Terracing & Sediment Trapping	TECHE	VERMI	327	25-Sep-2000 A	01-May-2003 *	30-Sep-2003	$5,086,511	$3,443,962	67.7	$2,860,122 $297,153

Status: Final engineering and design is complete. Permit has been awarded, and construction should begin by May 2003.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES CSA	SCHEDULES Const Start	SCHEDULES Const End	ESTIMATES Baseline	ESTIMATES Current	ESTIMATES %	Actual Obligations/ Expenditures
LaBranche Wetlands Terracing/Plantings	PONT	STCHA	489	21-Sep-2000 A			$821,752	$1,027,191	125.0 !	$819,460 $277,709

Status: Cooperative Agreement was awarded September 21, 2000. Engineering and design complete. Construction is scheduled for 2002.

Task Force approved Phase 2 funding at January 10, 2001 meeting. In a letter dated September 7, 2001, NMFS returned Phase 2 funding because of waning landowner support. Deauthorization is not requested at this time.

Total Priority List	9	2,097	$10,535,817	$10,235,926	97.2	$8,493,786 $1,865,413

5 Project(s)
5 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 10

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Rockefeller Refuge Gulf Shoreline Stabilization	MERM	CAMER	920	27-Sep-2001 A	01-May-2004	01-Aug-2005	$1,929,888	$2,408,478	124.8	$2,048,407 $61,465

Status: A feasibility study (20% complete design) has been completed by Shiner Moseley and Associates, and is currently under review by NMFS and DNR.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List	10		920				$1,929,888	$2,408,478	124.8	$2,048,407 $61,465

1 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 11

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Barataria Barrier Island	BARA	PLAQ	322	06-Aug-2002 A	01-Apr-2004	30-Oct-2004	$3,083,934	$3,641,059	118.1	$3,114,901 $609,639

Status: Critical Phase 1 issues include identification of sand sources, selection of a preferred construction alignment (i.e., seaward or landward), land rights and oysters.

A Cooperative Agreement was awarded to LDNR, and NMFS has awarded a contract for engineering and design and environmental compliance services.

Geotechnical field investigations and pre-design surveys are complete. Limited post-storm survey data was acquired subsequent to October 2002 storms. Landrights is partially complete. Preliminary design (30%) is scheduled for June 2003. Coordination with operators of existing oil and gas facilities, cultural resource investigations, and detailed design work on-going.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Little Lake Shoreline Protection/Dedicated Dredging near Round Lake	BARA	LAFOU	713	06-Aug-2002 A	01-Apr-2004	30-Oct-2004	$2,639,536	$3,200,092	121.2	$2,720,078 $7,974

Status:

Proceding with engineering and design. Currently reviewing geotech and survey data. Anticipating Phase 2 request in August 2003.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration	BARA	PLAQ	161	06-Aug-2002 A	01-Mar-2005	01-Aug-2005	$1,880,700	$2,344,387	124.7	$1,992,730 $305

Status: A Cooperative Agreement was awarded July 25, 2002. Engineering and design contract has been issued, and kickoff meeting and site visit were conducted in February 2003. Preliminary design is anticipated during November 2003.
Critical Phase 1 issues include identification of sand sources, landrights (numerous undivided heirships and potential reclamation issues) and oysters.

Total Priority List 11	1,196	$7,604,170	$9,185,538	120.8	$7,827,709 $617,918

3 Project(s)
3 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Total DEPT. OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE	21,259	$88,391,315	$83,007,181	93.9	**$74,125,903** $37,901,200

29 Project(s)
27 Cost Sharing Agreements Executed
13 Construction Started
8 Construction Completed
5 Project(s) Deferred/Deauthorized

Notes:
1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Lead Agency: DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

Priority List 1

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
BA-2 GIWW to Clovelly Hydrologic Restoration	BARA	LAFOU	175	17-Apr-1993 A	21-Apr-1997 A	31-Oct-2000 A	$8,141,512	$8,328,603	102.3	$6,869,198 $6,736,133

Status: The project was divided into two contracts in order to expedite implementation. The first contract to install most of the weir structures, began May 1, 1997 and completed November 30, 1997, at a cost of $646,691. The second contract to install bank protection, one weir and one plug, began January 1, 2000 and completed October 31, 2000, at a cost of $3,400,000. All project construction is complete. O&M Plan signed September 16, 2002.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Vegetative Plantings (Demo) - Dewitt-Rollover (DEMO) [DEAUTHORIZED]	MERM	VERMI	0	17-Apr-1993 A	11-Jul-1994 A	26-Aug-1994 A	$191,003	$91,764	48.0	$91,723 $92,012

Status: Sub-project of the Vegetative Plantings project.

Complete and deauthorized.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Vegetative Plantings (Demo) - Falgout Canal (DEMO)	TERRE	TERRE	0	17-Apr-1993 A	30-Aug-1996 A	30-Dec-1996 A	$144,561	$204,979	141.8 !	$195,530 $195,530

Status: Sub-project of the Vegetative Plantings project. Wave-stilling devices are in place. Vegetative plantings are in place.

Complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Vegetative Plantings (Demo) - Timbalier Island (DEMO)	TERRE	TERRE	0	17-Apr-1993 A	15-Mar-1995 A	30-Jul-1996 A	$372,589	$432,858	116.2	$300,320 $298,584

Status: Sub-project of the Vegetative Plantings project.

Complete.

PROJECT	BASIN	PARISH	ACRES	SCHEDULES: CSA	Const Start	Const End	ESTIMATES: Baseline	Current	%	Actual Obligations/ Expenditures
Vegetative Plantings (Demo) - West Hackberry (DEMO)	CALC	CAMER	0	17-Apr-1993 A	15-Apr-1993 A	30-Mar-1994 A	$213,947	$246,241	115.1	$246,189 $244,345

Status: Sub-project of the Vegetative Plantings project.

Complete.

Total Priority List	1	175			$9,063,612	$9,304,445	102.7	$7,702,960 $7,566,604

5 Project(s)
5 Cost Sharing Agreements Executed
5 Construction Started
5 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 2

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Boston Canal/Vermilion Bay Shore Restoration	TECHE	VERMI	378	24-Mar-1994 A	13-Sep-1994 A	30-Nov-1995 A	$1,008,634	$1,012,691	100.4	$826,281 $805,784

Status: Complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Brown's Lake Hydrologic Restoration	CALC	CAMER	282	28-Mar-1994 A	01-Dec-2003	01-Jun-2004	$3,222,800	$3,201,890	99.4	$2,346,536 $554,705

Status: Landowners have changed since project inception. Permit transfer agreement being pursued.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Caernarvon Diversion Outfall Management	BRET	PLAQ	802	13-Oct-1994 A	01-Jun-2001 A	19-Jun-2002 A	$2,522,199	$4,536,000	179.8 !	$3,109,143 $2,696,337
	Status:	This project was proposed for deauthorization in December 1996, but was referred for revisions at the request of the landowners and DNR. The project was modified. The final plan/EA has been prepared. Bids were opened 23 February 2001. The low bid exceeded the funds available. Task Force approved additional funds. Construction complete June 19, 2002.								
Freshwater Bayou	MERM	VERMI	1,593	17-Aug-1994 A	29-Aug-1994 A	15-Aug-1998 A	$2,770,093	$2,949,194	106.5	$2,488,797 $1,782,672
	Status:	The project was expedited in order to allow the use of stone removed from the Wax Lake Outlet Weir at a substantial cost savings. Construction is included as an option in the Corps of Engineers contract for the Wax Lake Outlet Weir removal. Option was exercised on September 2, 1994. Project construction is complete. Maintenance contract underway to repair rock dike.								
Fritchie Marsh	PONT	STTAM	1,040	21-Feb-1995 A	01-Nov-2000 A	01-Mar-2001 A	$3,048,389	$2,933,808	96.2	$1,421,816 $1,309,887
	Status:	O&M plan executed January 29, 2003.								
Hwy 384	CALC	CAMER	150	13-Oct-1994 A	01-Oct-1999 A	07-Jan-2000 A	$700,717	$1,058,554	151.1 !	$666,963 $570,448
	Status:	Construction start slipped from November 1997 to July 1999 because of landright issues. All landright agreements signed. Construction complete January 7, 2000. O&M plan executed. Maintenance contract complete. Minor damage from Hurricane Lili to be repaired. Contract in preparation.								
Jonathan Davis Wetland Restoration	BARA	JEFF	510	05-Jan-1995 A	22-Jun-1998 A	01-Jun-2003	$3,398,867	$12,479,727	367.2 !	$8,159,987 $3,611,830
	Status:	Construction unit 3 is under construction. Costs estimates are being prepared for construction unit 4. A request will be submitted to the Task Force in the near future for funding of CU 4.								

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Mud Lake Marsh Management	CALC	CAMER	1,520	24-Mar-1994 A	01-Oct-1995 A	15-Jun-1996 A	$2,903,635	$3,375,936	116.3	$2,232,225 $2,238,548

Status: Bid opening was August 8, 1995 and contract awarded to Crain Bros. Construction started in early October 1995. Water control structures are installed and the vegetation installed in the summer of 1996.

Construction complete. O&M plan executed. Maintenance needs on a water control structure is being evaluated.

Total Priority List 2	6,275	$19,575,334	$31,547,801	161.2	$21,251,748 $13,570,211

8 Project(s)
8 Cost Sharing Agreements Executed
7 Construction Started
6 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 3

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Brady Canal Hydrologic Restoration	TERRE	TERRE	297	15-May-1998 A	01-May-1999 A	22-May-2000 A	$4,717,928	$5,662,176	120.0	$3,321,689 $3,144,696

Status: Project delayed because of landowner concerns about permit conditions regarding monitoring, and objection from a pipeline company in the area. In addition, CSA revisions were needed to accommodate the landowner's interest in providing non-Federal funding. Permitting and design conditions have resulted in the CSA being modified to also include Fina Oil Co. and LL&E. Both will help cost share the project. The revised CSA is complete.

Construction project is complete. O&M plan signed July 16, 2002.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Cameron-Creole Maintenance	CALC	CAMER	2,602	09-Jan-1997 A	30-Sep-1997 A	15-Jul-1998 A	$3,719,926	$3,736,718	100.5	$865,905 $834,971

Status: The first three contracts for maintenance work are complete. The project provides for maintenance on an as-needed basis.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Cote Blanche Hydrologic Restoration	TECHE	STMRY	2,223	01-Jul-1996 A	25-Mar-1998 A	15-Dec-1998 A	$5,173,062	$6,029,980	116.6	$5,313,213 $4,917,062

Status: Construction start date slipped from November 1997 to March 1998 because of concern about the source of shell to construct the project. Site inspection for bidder was held January 12, 1998. Concern for a source of shell may require budget modifications. Contract awarded February 1998; notice to proceed March 1998. Construction was completed December 1998.

O&M plan executed. Maintenance contract complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
SW Shore White Lake Demo (DEMO) [DEAUTHORIZED]	MERM	VERMI	0	11-Jan-1995 A	30-Apr-1996 A	31-Jul-1996 A	$126,062	$108,803	86.3	$103,468 $103,468

Status: Complete. Project deauthorized.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Violet Freshwater Distribution [DEAUTHORIZED]	PONT	STBER	0	13-Oct-1994 A			$1,821,438	$198,597	10.9	$128,570 $128,627

Status: Rights-of-way to gain access to the site was a problem due to multiple landowner coordination, and additional questions have arisen about rights to operate existing siphon.

Project deauthorized, October 4, 2000.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
West Pointe-a-la-Hache Outfall Management	BARA	PLAQ	1,087	05-Jan-1995 A			$881,148	$4,068,045	461.7 !	$340,453 $221,986

Status: Model results and a decision on proceeding with the project or not is projected by DNR to occur soon.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
White's Ditch Outfall Management [DEAUTHORIZED]	BRET	PLAQ	0	13-Oct-1994 A			$756,134	$32,862	4.3	$32,862 $32,862

Status: LA DNR concurred with NRCS to deauthorize the project. Project deauthorized at the January 16, 1998 Task Force meeting

Deauthorized.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 3			6,209				$17,195,698	$19,837,182	115.4	$10,106,161 $9,383,673

7 Project(s)
7 Cost Sharing Agreements Executed
4 Construction Started
4 Construction Completed
3 Project(s) Deferred/Deauthorized

Priority List 4

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Barataria Bay Waterway Bank Protection (West)	BARA	JEFF	232	23-Jun-1997 A	01-Jun-2000 A	01-Nov-2000 A	$2,192,418	$3,304,787	150.7 !	$2,307,943 $2,210,626

Status: The project is being coordinated with the COE dredging program. Contract advertised December 1999.

Construction complete. Dedication ceremony held October 20, 2000. O&M plan signed July 15, 2002.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Bayou L'Ours Ridge Hydrologic Restoration [DEAUTHORIZED]	BARA	LAFOU	737	23-Jun-1997 A			$2,418,676	$2,758,567	114.1	$458,501 $364,810

Status: The initial step of deauthorization was taken at the January Task Force meeting. The process will be finalized at the April Task Force meeting.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Flotant Marsh Fencing (DEMO) [DEAUTHORIZED]	TERRE	TERRE	0	16-Jul-1999 A			$367,066	$106,839	29.1	$106,960 $106,960

Status: Difficulty in locating an appropriate site for demonstration and difficulty in addressing engineering constraints.

Project deauthorized, October 4, 2000.

PROJECT	BASIN	PARISH	ACRES	CSA (SCHEDULES)	Const Start (SCHEDULES)	Const End (SCHEDULES)	Baseline (ESTIMATES)	Current (ESTIMATES)	%	Actual Obligations/ Expenditures
Perry Ridge Bank Protection	CA/SB	CALCA	1,203	23-Jun-1997 A	15-Dec-1998 A	15-Feb-1999 A	$2,223,518	$2,289,086	102.9	$1,815,359 $1,792,071

Status: Project complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Plowed Terraces Demo (DEMO)	CALC	CAMER	0	22-Oct-1998 A	30-Apr-1999 A	31-Aug-2000 A	$299,690	$321,939	107.4	$309,665 $306,201

Status: Project initially put on hold pending results of an earlier terraces demonstration project being paid for by the Gulf of Mexico program. The first attempt to plow the terraces in the summer of 1999 was not successful. A second contract was advertised in January 2000 to try again. Construction is complete.

Total Priority List 4	2,172	$7,501,368	$8,781,218	117.1	$4,998,428 $4,780,669

5 Project(s)
5 Cost Sharing Agreements Executed
3 Construction Started
3 Construction Completed
2 Project(s) Deferred/Deauthorized

Priority List 5

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Freshwater Bayou Bank Stabilization	MERM	VERMI	511	01-Jul-1997 A	15-Feb-1998 A	15-Jun-1998 A	$3,998,919	$2,543,105	63.6	$1,967,669 $1,965,944

Status: The local cost share is being paid by Acadian Gas Company.

Contract was awarded January 14, 1998. Construction is complete.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Naomi Outfall Management	BARA	JEFF	633	12-May-1999 A	01-Jun-2002 A	15-Jul-2002 A	$1,686,865	$2,102,650	124.6	$1,325,957 $1,147,779

Status: This project was combined with the BBWW "Dupre Cut" East project for planning and design; construction will be separate.

The operation of the siphon is being reviewed by DNR. Hydraulic analysis is complete; results concurred in by both agencies. Construction contract advertised in March 2002. Construction began June 2002 and completed in July 2002.

O&M plan in draft.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Raccoon Island Breakwaters Demo (DEMO)	TERRE	TERRE	0	03-Sep-1996 A	21-Apr-1997 A	31-Jul-1997 A	$1,497,538	$1,788,184	119.4	$1,736,951 $1,729,320

Status: Complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Sweet Lake/Willow Lake Hydrologic Restoration	CALC	CAMER	247	23-Jun-1997 A	01-Nov-1999 A	02-Oct-2002 A	$4,800,000	$3,776,147	78.7	$4,362,054 $3,273,915

Status: The rock bank protection feature of the project is complete.

The second contract has been awarded; terrace construction and vegetative planting will be finished by October 1, 2002. Contractor was unable to complete the construction. Contract terminated; remaining work was advertised December 2001. Contract awarded, and construction completed October 2, 2002.

Total Priority List	5		1,391				$11,983,322	$10,210,086	85.2	$9,392,631 $8,116,958

4 Project(s)
4 Cost Sharing Agreements Executed
4 Construction Started
4 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 6

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
				*********** SCHEDULES ***********			******** ESTIMATES ********			
Barataria Bay Waterway Bank Protection (East)	BARA	JEFF	217	12-May-1999 A	01-Dec-2000 A	31-May-2001 A	$5,019,900	$6,979,159	139.0 !	$5,587,494 $3,920,806

Status: This project was combined with the Naomi Outfall Management project for planning and design; construction was separate.

Project construction complete.

O&M plan signed October 2, 2002.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Cheniere au Tigre Sediment Trapping Device (DEMO)	TECHE	VERMI	0	20-Jul-1999 A	01-Sep-2001 A	02-Nov-2001 A	$500,000	$605,357	121.1	$588,287 $555,645

Status: A request for proposals was advertised in Feb 2000. No valid proposals received. Proceeding with design of a rock structure. Project advertised for bid. Bid came in over estimate. LDNR and NRCS shifted funds from monitoring to construction. Delay in getting new obligation due to internal COE procedures. Government order received July 13, 2001. Construction complete.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Oaks/Avery Canals Hydrologic Restoration (Incr 1)	TECHE	VERMI	160	22-Oct-1998 A	15-Apr-1999 A	11-Oct-2002 A	$2,367,700	$2,828,601	119.5	$2,080,222 $1,567,153

Status: O&M Plan in draft.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Penchant Basin Plan (Incr. 1)	TERRE	TERRE	1,155	23-Apr-2002 A	01-Jan-2005	30-Sep-2005	$14,103,051	$14,103,051	100.0	$1,401,568 $1,045,500

Status: Final model runs being selected.

Total Priority List	6		1,532				$21,990,651	$24,516,168	111.5	$9,657,571 $7,089,104

4 Project(s)
4 Cost Sharing Agreements Executed
3 Construction Started
3 Construction Completed
0 Project(s) Deferred/Deauthorized

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures

Priority List 7

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Barataria Basin Landbridge Shoreline Protection - Ph 1 & Ph 2	BARA	JEFF	1,304	16-Jul-1999 A	01-Dec-2000 A	31-Oct-2004	$17,515,029	$17,589,990	100.4	$5,066,808 $3,747,452
	Status: The Task Force approved construction of the final construction unit at the January 16, 2003 meeting.									
Thin Mat Flotant Marsh Enhancement Demo (DEMO)	TERRE	TERRE	0	16-Oct-1998 A	15-Jun-1999 A	10-May-2000 A	$460,222	$542,570	117.9	$321,341 $232,492
	Status: Construction complete. Monitoring ongoing.									
	Total Priority List 7		1,304				$17,975,251	$18,132,560	100.9	$5,388,149 $3,979,944

2 Project(s)
2 Cost Sharing Agreements Executed
2 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 8

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Humble Canal Hydrologic Restoration	MERM	CAMER	378	21-Mar-2000 A	01-Jul-2002 A	01-Mar-2003 A	$1,526,136	$1,548,429	101.5	$749,419 $99,577
	Status: Construction complete March 2003.									
Lake Portage Land Bridge - Ph 1	TECHE	VERMI	24	07-Apr-2000 A	15-Feb-2003 A	01-May-2003 *	$1,013,820	$1,137,756	112.2	$996,905 $272,132
	Status: Construction began February 15, 2003.									

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Upper Oak River Freshwater Introduction Siphon [DEAUTHORIZED]	BRET	PLAQ	339				$2,500,239	$2,500,239	100.0	$185,966 $50,420

Status: Total project cost estimate is $12,994,800; Priority List 8 funded $2,500,000 for completion of engineering and design and construction of the outflow channel. Funding of the siphon will be requested when engineering and design are completed.

Project feasibility being evaluated. DNR has solicited a cost estimate from one of their engineering firms to perform a feasibility study. Target dates will be established if project is deemed feasible.

Deauthorization procedures initiated.

Total Priority List 8			741				$5,040,195	$5,186,424	102.9	$1,932,290 $422,128

3 Project(s)
2 Cost Sharing Agreements Executed
2 Construction Started
1 Construction Completed
1 Project(s) Deferred/Deauthorized

Priority List 9

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Barataria Basin Landbridge Shoreline Protection - Ph 3	BARA	JEFF	264	25-Jul-2000 A	01-Sep-2003	01-Dec-2005	$4,545,106	$10,795,183	237.5 !	$5,350,539 $377,200

Status: Landrights issues have caused a delay in advertising contract. Issues are near resolution. Advertisment scheduled for May 2003.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Black Bayou Bypass Culverts	CA/SB	CAMER	540	25-Jul-2000 A	01-Feb-2004	01-Feb-2005	$799,823	$999,779	125.0 !	$558,980 $284,469

Status: Favorable 30% design review held September 19, 2002. 95% design review will be held in May 2003. Request for phase 2 funding will be made at the August Task Force meeting.

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Little Pecan Bayou Control Structure	MERM	CAMER	144	25-Jul-2000 A	01-Nov-2004	01-Apr-2005	$1,245,278	$1,556,598	125.0 !	$818,671 $144,815
	Status:	Hydrodynamic Modelling being performed.								
Perry Ridge to Texas (West)	CALC	CAMER	83	25-Jul-2000 A	01-Nov-2001 A	31-Jul-2002 A	$3,742,451	$3,238,446	86.5	$1,996,475 $1,566,697
	Status:	The Perry Ridge project approved on Priority List 4 was the first phase of this project. This is the second and final phase of the project. Task Force approved Phase 2 construction funding January 10, 2001. The rock bank protection is installed. The contract for the terraces and vegetation has been completed.								
South Lake DeCade Freshwater Introduction	TERRE	TERRE	201	25-Jul-2000 A	01-Aug-2004	01-Mar-2005	$396,489	$495,611	125.0	$262,595 $188,858
	Status:	A proposal to construct the shoreline protection component of the project as a stand alone feature will be presented to the Task Force in the near future. Further investigation of the freshwater introduction component is ongoing.								
Total Priority List 9			1,232				$10,729,147	$17,085,617	159.2	$8,987,260 $2,562,040

5 Project(s)
5 Cost Sharing Agreements Executed
1 Construction Started
1 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 10

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
GIWW Bank Restoration of Critical Areas in Terrebonne	TERRE	TERRE	366	16-May-2001 A	01-Jul-2004	01-Oct-2005	$1,735,983	$2,170,000	125.0 !	$1,013,725 $183,360
	Status: 30% Design review scheduled for May 2003.									
Total Priority List 10			366				$1,735,983	$2,170,000	125.0	$1,013,725 $183,360

1 Project(s)
1 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 11

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Barataria Basin Landbridge Shoreline Protection - Ph 4	BARA	JEFF	334	09-May-2002 A	01-Oct-2004	01-Sep-2005	$2,191,807	$2,739,760	125.0 !	$1,778,283 $13,914
	Status: Phase 1 activities on-going.									
Coastwide Nutria Control Program	COAST	COAST	14,963	26-Feb-2002 A	20-Nov-2002 A		$12,945,696	$13,012,998	100.5	$7,446,697 $134,368
	Status: Implementation began with the 2002-2003 trapping season. A report on the first years accomplishments will be given at the August Task Force meeting.									
Raccoon Island Breakwaters - Ph 2	TERRE	TERRE	167	23-Apr-2002 A	01-Aug-2004	01-Dec-2005	$1,016,758	$1,270,948	125.0 !	$832,822 $21,095
	Status: Geotechnical investigation task order issued by DNR. The project will be constructed in 2 units. the first unit will consist of the rock breakwaters. The second unit will consist of dedicated dredging for creation of barrier island habitat from dunes to back barrier marshes and the planting of associated plant communities.									

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 11			15,464				$16,154,261	$17,023,706	105.4	$10,057,801 $169,377

3 Project(s)
3 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 11.1

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Holly Beach Sand Management	CA/SB	CALCA	330	09-May-2002 A	01-Aug-2002 A	31-Mar-2003 *	$19,252,492	$19,252,505	100.0	$12,010,314 $5,162

Status: The placement of the sand material on to the beach was completed on Saturday, March 1, 2003. Required work that is now in progress consist of demobilization of the pipeline segments, dressing the completed beach work,erection of the Sand Fencing and installation of the vegetation.

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 11.1			330				$19,252,492	$19,252,505	100.0	$12,010,314 $5,162

1 Project(s)
1 Cost Sharing Agreements Executed
1 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Priority List 12

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	*********** SCHEDULES *********** CSA	Const Start	Const End	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
Freshwater Foating Marsh Demo (DEMO)	VARY	COAST	0	01-May-2003 *	01-Mar-2004	01-Jul-2004	$1,080,891	$1,080,891	100.0	$1,034 $0

Status: This project was approved as part of the 12th priority list. Project development is underway.

Total Priority List 12			0				$1,080,891	$1,080,891	100.0	$1,034 $0

1 Project(s)
0 Cost Sharing Agreements Executed
0 Construction Started
0 Construction Completed
0 Project(s) Deferred/Deauthorized

Total DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE			37,191				$159,278,205	$184,128,602	115.6	**$102,500,072** $57,829,230

49 Project(s)
47 Cost Sharing Agreements Executed
33 Construction Started
28 Construction Completed
7 Project(s) Deferred/Deauthorized

Notes:
1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Total All Priority Lists

PROJECT		ACRES	******** ESTIMATES ******** Baseline	Current	%	Actual Obligations/ Expenditures
SUMMARY	Total All Projects	135,222	$464,439,556	$486,845,370	104.8	$298,248,368 $165,644,921

142 Project(s)

118 Cost Sharing Agreements Executed

69 Construction Started

56 Construction Completed

19 Project(s) Deferred/Deauthorized

Total Available Funds

Federal Funds	$477,902,048
Non/Federal Funds	$82,265,981
Total Funds	$560,122,143

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: All Basins in State									
Priority List: Cons Plan	1	0	1	1	1	0	$238.871	$191.807	$191.807
Priority List: 10	1	0	1	0	0	0	$2.006.373	$2.507.966	$36.349
Basin Total	2	0	2	1	1	0	$2,245,244	$2,699,773	$228,156
Basin: Atchafalaya									
Priority List: 2	2	3.792	2	2	2	0	$5.043.867	$10.109.926	$8.598.287
Priority List: 9	1	589	1	0	0	0	$1.484.633	$1.855.792	$282.029
Basin Total	3	4,381	3	2	2	0	$6,528,500	$11,965,718	$8,880,316
Basin: Barataria									
Priority List: 1	3	620	3	3	3	0	$9.960.769	$9.560.510	$7.953.158
Priority List: 2	1	510	1	1	0	0	$3.398.867	$12.479.727	$3.611.830
Priority List: 3	3	1.087	3	1	1	1	$4.160.823	$6.632.106	$2.665.740
Priority List: 4	2	969	2	1	1	1	$4.611.094	$6.063.354	$2.575.437
Priority List: 5	2	1.752	2	1	1	0	$17.212.815	$2.605.109	$1.635.797
Priority List: 6	1	217	1	1	1	0	$5.019.900	$6.979.159	$3.920.806
Priority List: 7	2	1.431	2	2	1	0	$18.443.924	$18.473.223	$4.047.228
Priority List: 9	3	882	3	0	0	0	$7.552.793	$14.540.599	$1.064.741
Priority List: 10	2	8.891	1	0	0	0	$4.901.948	$5.364.801	$947.244
Priority List: 11	5	2.094	5	0	0	0	$12.090.387	$14.793.311	$633.836
Priority List: 12	1	400	0	0	0	0	$2.192.735	$2.192.735	$0
Basin Total	25	18,853	23	10	8	2	$89,546,055	$99,684,634	$29,055,815

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Breton Sound										
Priority List:	2	1	802	1	1	1	0	$2.522.199	$4.536.000	$2.696.337
Priority List:	3	1	0	1	0	0	1	$756.134	$32.862	$32.862
Priority List:	4	1	0	0	0	0	1	$2.468.908	$64.515	$64.497
Priority List:	8	1	339	0	0	0	1	$2.500.239	$2.500.239	$50.420
Priority List:	10	2	2.740	1	0	0	0	$4.339.138	$3.208.416	$356.790
Basin Total		6	3,881	3	1	1	3	$12,586,618	$10,342,032	$3,200,906
Basin: Calcasieu/Sabine										
Priority List:	4	1	1.203	1	1	1	0	$2.223.518	$2.289.086	$1.792.071
Priority List:	9	1	540	1	0	0	0	$799.823	$999.779	$284.469
Priority List:	10	1	393	1	0	0	0	$1.425.447	$1.781.809	$339.071
Priority List:	11.1	1	330	1	1	0	0	$19.252.492	$19.252.505	$5.162
Basin Total		4	2,466	4	2	1	0	$23,701,280	$24,323,179	$2,420,773

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Calcasieu									
Priority List: 1	3	6.407	3	3	3	0	$5.770.187	$2.840.148	$2.181.164
Priority List: 2	4	3.019	4	3	3	0	$8.568.462	$11.370.976	$6.236.688
Priority List: 3	2	3.555	2	2	1	0	$8.301.380	$8.254.074	$3.962.205
Priority List: 4	2	0	2	1	1	1	$670.284	$747.272	$516.828
Priority List: 5	1	247	1	1	1	0	$4.800.000	$3.776.147	$3.273.915
Priority List: 6	1	3.594	1	1	0	0	$6.316.800	$6.382.511	$3.529.366
Priority List: 8	1	993	1	1	0	0	$5.920.248	$7.400.310	$3.384.218
Priority List: 9	1	83	1	1	1	0	$3.742.451	$3.238.446	$1.566.697
Basin Total	15	17,898	15	13	10	1	$44,089,812	$44,009,884	$24,651,082
Basin: Coastal Basins									
Priority List: 6	1	0	1	1	0	0	$2.140.000	$2.140.000	$514.666
Priority List: 11	1	14.963	1	1	0	0	$12.945.696	$13.012.998	$134.368
Basin Total	2	14,963	2	2	0	0	$15,085,696	$15,152,998	$649,034

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Miss. River Delta										
Priority List:	1	1	9.831	1	0	0	0	$8.517.066	$22.312.761	$1.478.453
Priority List:	3	2	936	1	1	1	1	$3.666.187	$1.008.841	$714.687
Priority List:	4	1	0	1	0	0	1	$300.000	$58.310	$58.310
Priority List:	6	2	2.386	2	2	1	0	$7.073.934	$6.635.956	$2.379.998
Priority List:	10	1	5.828	0	0	0	0	$1.076.328	$1.076.328	$353.027
Priority List:	11	1	24.065	0	0	0	0	$1.880.376	$1.880.376	$18.665
Basin Total		8	43,046	5	3	2	2	$22,513,891	$32,972,572	$5,003,139
Basin: Mermentau										
Priority List:	1	2	247	2	2	2	1	$1.368.671	$1.318.888	$1.090.724
Priority List:	2	1	1.593	1	1	1	0	$2.770.093	$2.949.194	$1.782.672
Priority List:	3	1	0	1	1	1	1	$126.062	$108.803	$103.468
Priority List:	5	1	511	1	1	1	0	$3.998.919	$2.543.105	$1.965.944
Priority List:	7	1	442	1	1	0	0	$2.185.900	$2.862.806	$368.772
Priority List:	8	1	378	1	1	1	0	$1.526.136	$1.548.429	$99.577
Priority List:	9	2	440	2	0	0	0	$1.852.416	$2.282.821	$257.722
Priority List:	10	2	1.133	2	0	0	0	$11.565.012	$8.170.730	$180.820
Priority List:	11	2	935	0	0	0	0	$3.407.449	$3.997.054	$130.704
Priority List:	12	1	702	0	0	0	0	$1.588.085	$1.588.085	$15.418
Basin Total		14	6,381	11	7	6	2	$30,388,743	$27,369,915	$5,995,821

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

Basin: Pontchartrain

		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	1	2	1.753	2	2	2	0	$6.119.009	$5.296.343	$4.722.722
Priority List:	2	2	2.320	2	2	2	0	$4.500.424	$4.576.360	$2.437.129
Priority List:	3	3	755	3	1	1	2	$2.683.636	$987.543	$815.478
Priority List:	4	1	0	0	0	0	1	$5.018.968	$39.026	$39.025
Priority List:	5	1	75	1	1	1	0	$2.555.029	$2.585.187	$2.238.611
Priority List:	8	2	134	2	0	0	1	$5.475.065	$2.609.559	$543.004
Priority List:	9	3	886	2	1	0	0	$2.259.176	$2.774.855	$814.395
Priority List:	10	1	229	1	0	0	0	$1.334.360	$1.667.950	$104.908
Priority List:	11	1	0	1	0	0	0	$5.434.288	$6.780.307	$79.044
Priority List:	12	1	266	0	0	0	0	$1.348.345	$1.348.345	$11.476
Basin Total		17	6,418	14	7	6	4	$36,728,300	$28,665,474	$11,805,792

Basin: Teche / Vermilion

		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	1	1	65	1	1	1	0	$1.526.000	$2.022.961	$1.790.811
Priority List:	2	1	378	1	1	1	0	$1.008.634	$1.012.691	$805.784
Priority List:	3	1	2.223	1	1	1	0	$5.173.062	$6.029.980	$4.917.062
Priority List:	5	1	441	1	1	1	0	$940.065	$886.030	$563.832
Priority List:	6	4	2.526	4	3	3	0	$10.130.000	$11.967.586	$6.224.414
Priority List:	8	1	24	1	1	0	0	$1.013.820	$1.137.756	$272.132
Priority List:	9	3	994	1	0	0	0	$7.814.815	$6.172.266	$1.309.582
Basin Total		12	6,651	10	8	7	0	$27,606,396	$29,229,269	$15,883,617

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Terrebonne										
Priority List:	1	5	9	4	3	3	2	$8.809.393	$9.490.376	$7.622.966
Priority List:	2	3	958	3	3	3	0	$12.831.588	$20.403.750	$17.145.534
Priority List:	3	4	3.958	4	4	4	0	$15.758.355	$22.804.077	$18.012.599
Priority List:	4	2	215	2	1	0	1	$6.119.470	$13.871.854	$7.313.311
Priority List:	5	3	1.187	2	1	1	0	$31.120.343	$11.497.906	$3.854.816
Priority List:	5.1	0	0	0	0	0	0	$9.700.000	$9.700.000	$104.547
Priority List:	6	4	1.774	2	0	0	2	$30.522.757	$24.692.755	$1.669.530
Priority List:	7	1	0	1	1	1	0	$460.222	$542.570	$232.492
Priority List:	9	4	576	4	0	0	0	$25.219.289	$32.787.142	$1.629.709
Priority List:	10	2	970	2	0	0	0	$4.119.035	$4.553.052	$224.223
Priority List:	11	3	494	2	0	0	0	$5.338.072	$6.665.944	$32.227
Priority List:	12	1	143	0	0	0	0	$2.229.876	$2.229.876	$6.049
Basin Total		33	10,284	26	13	12	5	$152,228,400	$159,239,301	$57,848,003
Basin: Various Basins										
Priority List:	9	1		0	0	0	0	$109.730	$109.730	$22.465
Priority List:	12	1	0	0	0	0	0	$1.080.891	$1.080.891	$0
Basin Total		2	0	0	0	0	0	$1,190,621	$1,190,621	$22,465
Total All Basins		142	135,222	118	69	56	19	$464,439,556	$486,845,370	$165,644,921

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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

15-May-2003

Project Summary Report by Priority List

P/L	No. of Projects	Acres	CSA Executed	Under Const.	Const. Completed	Federal Const. Funds Available	Non/Fed Const. Funds Matching Share	Baseline Estimate	Current Estimate	Obligations To Date	Expenditures To Date
1	14	18,932	14	0	13	$28,084,900	$9,229,530	$39,933,317	$52,642,894	$26,788,128	$26,610,373
2	15	13,372	15	1	13	$28,173,110	$11,345,364	$40,644,134	$67,438,624	$53,309,716	$43,314,262
3	11	12,514	11	1	9	$29,939,100	$7,412,577	$32,879,168	$44,906,703	$33,319,995	$30,449,940
4	4	1,650	4	1	3	$29,957,533	$3,511,319	$10,468,030	$19,680,827	$17,071,683	$11,515,249
5	9	4,213	8	0	6	$33,371,625	$2,397,042	$60,627,171	$23,893,484	$15,505,584	$13,532,915
5.1	0	0	0	0	0	$0	$4,850,000	$9,700,000	$9,700,000	$4,809,800	$104,547
6	11	10,497	11	3	5	$39,134,000	$5,879,797	$54,614,991	$58,727,646	$28,794,970	$18,166,204
7	4	1,873	4	2	2	$42,540,715	$3,281,790	$21,090,046	$21,878,599	$8,650,979	$4,648,491
8	4	1,529	4	2	1	$41,864,079	$2,279,444	$10,639,695	$12,509,742	$7,119,924	$4,112,494
9	19	4,990	15	1	1	$47,907,300	$9,717,891	$50,835,126	$64,761,430	$47,163,226	$7,231,809
10	12	20,184	9	0	0	$47,659,220	$4,353,600	$30,767,641	$28,331,052	$11,912,555	$2,542,433
11	13	42,551	9	1	0	$57,332,369	$7,069,499	$41,096,268	$47,129,990	$28,462,507	$1,028,844
11.1	1	330	1	1	0	$0	$9,626,252	$19,252,492	$19,252,505	$12,010,314	$5,162
12	5	1,511	0	0	0	$51,938,097	$1,265,990	$8,439,932	$8,439,932	$593,212	$32,943
Active Projects	122	134,146	105	13	53	$477,902,048	$82,220,095	$430,988,011	$479,293,427	$295,512,594	$163,295,667
Deauthorized Projects	19	1,076	12	0	2			$33,212,674	$7,360,136	$2,543,968	$2,157,447
Total Projects	141	135,222	117	13	55	$477,902,048	$82,265,981	$464,200,685	$486,653,563	$298,056,561	$165,453,114
Conservation Plan	1	0	1	0	1		$45,886	$238,871	$191,807	$191,807	$191,807
Total Construction Program	142	135,222	118	13	56	$477,902,048	$82,265,981	$464,439,556	$486,845,370	$298,248,368	$165,644,921

$560,168,029

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Summary Report by Priority List

NOTES:
1. Total of 142 projects includes 122 active construction projects, 19 deauthorized projects, and the State of Louisiana's Wetlands Conservation Plan.
2. Federal funding of $51,938,097 for FY 03 has been received.
3. Total construction program funds available is $560,168,029 .
4. The current estimate for reconciled, closed-out deauthorized projects is equal to expenditures to date.
5. Current Estimate for the 5th priority list includes authorized funds for FY 96, FY 97 FY 98 and FY 99 for phased projects with multi-year funding.
6. Current Estimate for the 6th priority list includes authorized funds for FY 97, FY 98 and FY 99 for phased projects with multi-year funding.
7. The Task Force approved 8 unfunded projects, totalling $77,492,000 on Priority List 7 (not included in totals).
8. Obligations include expenditures and remaining obligations to date.
9. Non-Federal Construction Funds Available are estimated using cost share percentages as authorized for before and after approval of Conservation Plan.
10. Baseline and current estimates for PPL 9 (and future project priority lists) reflect funding utilizing cash flow management principles.
11. The amount shown for the non-federal construction funds available is comprised of 5% minimum cash of current estimate, and the remainder may be WIK and/or cash. The percentage of WIK would influence the total construction funds (cash) available.
12. PPL 11, Maurepas Diversion project, benefits 36,121 acres of swamp. This number is not included in the acre number in this table, beause this acreage is classified differently than acres protected by marsh projects.
13. PPL 5.1 is used to record the Bayou Lafourche project as approved by a motion passed by the Task Force on October 25, 2001, to proceed with Phase 1 ED, estimated cost of $9,700,000, at a cost share of 50% Federal and 50% non-Federal.
14. Priority Lists 9 through 11 are funded utilizing cash flow management. Baseline and current esimates for these priority lists reflect only approved, funded estimates. Both baseline and current estimates are revised as funding is approved.