

ATTACHMENT 6B

RESPONSES TO 2000 DRAFT REPORT  
FWS

YAZOO BACKWATER AREA REFORMULATION  
APPENDIX 5  
COORDINATION

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INTRODUCTION

The following comments were given by the U.S. Fish and Wildlife Service (FWS) after the Yazoo Backwater Reformulation draft report release. This attachment contains the U.S. Army Corps of Engineers, Vicksburg District, official response to the issues raised.

**United States Department of the Interior, Atlanta Regional Office**

Letter, James H. Lee, 3 November 2000. (Exhibit 4B-1).

1. General Comments.

a. Comment. Unsubstantiated justification for the selection of the recommended plan, a lack of explanation regarding analytical methods, use of inaccurate and inappropriate methodology, and inadequate evaluation and unequal treatment of alternatives, cast doubt on the DSEIS conclusions, and make it difficult to determine if every significant factor was considered in formulating the recommended plan. Additionally, the plan conflicts with the laws, regulations, policies and programs of other Federal agencies.

Response. The Vicksburg District notes, but does not agree with, the general comments that the DSEIS did not comply with applicable laws, regulations, policies, and programs of Federal agencies. The Final Report and Final SEIS (FSEIS) contain revisions from the Draft Report and DSEIS designed to address the general and specific comments provided by the U.S. Fish and Wildlife Service (FWS) and others. The Final Report and SEIS fully meet all applicable laws, regulations, executive orders (EO), and U.S. Army Corps of Engineers policy and guidance.

b. Comment. The formulation of NEPA compliance documentation is guided by Implementing Regulations (40 CFR 1500-1508) and additional guidance developed by CEQ (46 Fed. Reg. 18026), other environmental legislation, agency specific NEPA compliance and planning guidance, and input from other agencies and the public. The Service is concerned the

Corps did not adequately follow these various mandates, nor address comments and planning concerns from the Service and the public, in formulating the proposed plan and its associated compliance documentation.

Response. See response 1a.

c. Comment (p 2). The USFWS finds that the documents are inadequate and do not comply with the spirit and intent of NEPA or the Implementing Regulations promulgated by CEQ.

Response. See response 1a.

d. Comment (p 4). The DSEIS also contains several examples of inaccurate and inappropriate evaluation methodologies. For example, the DSEIS discussion of alternative screening, which occurred during the scoping and alternative formulation process, concludes that the Environmental Protection Agency's (EPA) contracted report (Shabman Report) on the economic analysis of nonstructural alternatives was unreasonable and did not meet study objectives. Therefore, the nonstructural approach contained in that report was dropped from further consideration. This approach and other plans were screened from further consideration in a manner that contradicts the CEQ's regulations.

Response. The Vicksburg District gave equal consideration to all structural and nonstructural alternatives. The final array in the DSEIS contained one nonstructural, one structural, four combination alternatives, and one no-action alternative. The final array in the FSEIS included four nonstructural, one structural, four combination alternatives, and one no-action alternative. All of the alternatives, except for the structural and no-action alternatives, included a reforestation component. These alternatives included nonstructural alternatives proposed by EPA and FWS. The Vicksburg District used the same procedures to evaluate all the alternatives. One of the four nonstructural alternatives in the final array (Alternative 2C) incorporated as many features of the Shabman Plan as possible that complied with Principles and Guidelines. The Shabman Plan, as presented by EPA, was not economically feasible without two benefit categories (carbon sequestration and nutrient reduction) not recognized by Principles and Guidelines.

e. Comment (p 4). Given the burgeoning growth of the carbon sequestration reforestation market world-wide, we do not concur with the Corps' rationale that such benefit categories are unquantifiable or invalid, particularly in view of their fundamental potential to address the issue of global climate change.

Response. A memorandum from the Director of Civil Works, June 2001, instructed USACE not to claim any carbon sequestration benefits on projects that promote reforestation. This policy was established because of the scientific, economic, and political uncertainties and complexities that surround this issue. Further investigation is needed to support the development of a sound USACE-wide policy on this subject.

f. Comment (p 4). In light of the increasing national emphasis on restoration of floodplains and natural flood water storage, the Service recommends that serious consideration and analysis be given to nontraditional, nonstructural approaches similar to those presented in the Shabman Report.

Response. See response 1d.

g. Comment (p 5). The DSEIS briefly lists and describes all of the alternatives, but does not adequately evaluate, compare, and present their impacts. Because of the lack of a detailed analysis of all alternatives, the reader has no clear basis for choosing among the plans. The Service recommends that all alternatives in the final array be correctly formulated and treated equally in the final document.

Response. A comprehensive analysis of alternatives was presented in the draft report and SEIS. The analysis adequately evaluated and compared the array of alternatives. Additional alternatives and analyses, along with a more thorough discussion of each, are presented in the Final Report and FSEIS. All alternatives in the final array were formulated to the same level of detail and given equal consideration.

h. Comment (p 6). The DSEIS did not accurately present, nor did it adequately evaluate, the combined structural/non-structural alternative advanced by the Service in a December 15, 1999, letter to the Corps. Specifically, that alternative should have been formulated to include four basic elements recommended by the Service; only two of which were accurately included in plan 7 of the final suite of alternatives.

Response. Alternative 7 evaluated two of the four FWS elements: (1) construction of a pump station to provide flood damage reduction above the 2-year event and restoration of the flood plain below the 2-year event and (2) operate pump station and existing floodgates to provide flood damage reduction above the 2-year event and restoration of the flood plain below the 2-year event. Plan 7 was not economically justified when evaluating these two FWS elements and therefore, could not be recommended. The designation of a spatially explicit nonstructural flood damage reduction zone (NSFDRZ) within the 2-year flood plain (the third FWS element) adds no economic benefit to the alternative. Alternative 2A incorporated floodproofing 100 percent of the structures damaged by the 100-year event and was not economically justified. Adding floodproofing to Alternative 7 (the fourth FWS element) would further reduce the benefit/cost ratio (which is currently not economically justified).

i. Comment (p 7). The Corps' future without-project land use projections are not substantiated and conflict with the current trend of wetland restoration in the project area, the Service continues to maintain that there is a substantial degree of risk and uncertainty that such a projection will result in significant underestimation of project impacts. This is a serious deficiency, because a description of baseline and the most likely future without condition are essential to an accurate evaluation and depiction of the impacts associated with all alternatives.

Response. Projecting future land use involves some uncertainty and requires making assumptions about regional conditions. In both the Draft and Final Reports, the Vicksburg District made the reasoned judgment that existing land uses would not change markedly over the project life, assuming that existing land use conditions would continue over the project life. The FWS comments stated that the agency felt there would be substantial additional reforestation under USDA (or other nonproject) programs during the project life, resulting in land use projects that differed from the Vicksburg District. The 2000 Draft Report utilized 1988 land use while the 2007 Final Report utilizes 2005 land use. Considerable agricultural lands were reforested between 1988 and 2005 due to USDA conservation programs. Reviewing USDA data indicates this reforestation mainly occurred in the period between 1988 and 1999.

Because the USDA programs target frequently flooded agricultural lands, there has been a reduction in the total lands available to the Vicksburg District for the nonstructural flood damage reduction feature. By law, only 25 percent of the agricultural lands within a county can be enrolled in these conservation programs. The Vicksburg District's future without-project projection in the Final Report is based on the 2005 land use which does not include the enrollment of any additional WRP or CRP lands after 2005. While WRP has reached its limit, there are, however, 20,500 acres remaining in Sharkey and Issaquena Counties available for enrollment into CRP. Currently, these two counties account for 73 percent of CRP lands in the Yazoo Backwater Study Area. Predicting future participation in CRP is difficult because CRP programs are based on 10- and 15-year contracts. Unlike the WRP where primarily perpetual easements are used, participants can remove their lands and convert them back to agricultural practices after contract expiration or elect to renew the contract if funding is available. Therefore, the total participation at any point in time can fluctuate.

The Vicksburg District 2005 land use data show a significant increase in reforestation compared to data utilized by FWS. As previously stated, this increase in forest land is primarily due to USDA programs which occurred from 1985 until 1999. While FWS indicated the reforestation would happen, it is the opinion of the Vicksburg District that future reforestation above that which has already occurred will be limited.

In its 2000 comments, FWS primarily based their projection on a 25 percent program cap for WRP. A program cap represents the maximum percentage of agricultural lands in a county that can be enrolled in a USDA program. The correct program cap for WRP is 10 percent of agricultural lands in the county. The 25 percent applies to the combined enrollment of CRP and WRP programs, with no more than 10 percent of the county in WRP.

Currently, there are more acres of bottom-land hardwoods in the project area than the 1999 FWS projection. Minimal future changes are anticipated without the nonstructural feature of the project. The Vicksburg District current and future with-project conditions show in excess of FWS projected acres of bottom-land hardwoods. Counties within the Yazoo Backwater Study Area have been objecting to the purchase of additional Federal land and the conversion of agricultural land to forested under USDA programs in their counties due to a loss in property taxes.

The FWS projected an additional 43,432 acres of additional reforestation for the without-project future condition based primarily on WRP. Seventy-eight percent (33,794 acres) of that projection was from Sharkey and Issaquena Counties, which no longer enroll lands into WRP.

According to the Farm Services Administration national database, the two Yazoo Backwater Study Area counties with the greatest WRP participation (Sharkey and Issaquena) are capped for any additional enrollment. Based on the Vicksburg District GIS database, these counties account for 83 percent of WRP participation in the Yazoo Backwater Study Area. In other words, the area with the greatest demonstrated WRP participation, and presumably the highest potential future WRP participation, is not available for enrollment in WRP.

j. Comment (p 7). Implementation of the proposed plan will reduce, rather than increase, the economic and environmental sustainability of project-area land uses.

Response. Based upon The Economic and Environmental Principles for Water and Related Land Resources Implementation Studies and The Economic and Environmental Guidelines for Water and Related Land Resources Implementation Studies, Engineer Regulation (ER) 1105-2-100, dated 22 April 2000, regulations that authorize the USACE to complete Civil Works water resources projects, including flood damage reduction, the recommended plan is justified economically with a benefit-cost ratio of 1.4:1. In addition, this balanced project meets the needs of the region and accomplishes environmental sustainability. The recommended plan provides for an 11.2 percent increase in terrestrial resources, a 19.5 percent increase in wetland resources, 52.8 percent increase in waterfowl resources, 30.3 percent increase in aquatic spawning resources, and an 8 percent increase in aquatic rearing resources.

k. Comment (p 8). The recommended plan (Plan 5) is a traditional, structural proposal that contains no non-structural flood damage reduction project features.

Response. The recommended plan is a combined plan, using structural and nonstructural flood damage reduction features. This is an engineeringly feasible, economically justified, and environmentally sustainable combination plan that balances the concerns in this region.

## 2. Specific Comments Section.

a. Comment: Page SEIS-1, Para 2. The first sentence of this paragraph states that the document is analytical, self-supporting, and informs decision makers and the public. The last sentence encourages the reader to reference the appendices for specific methodologies and detailed information which often do not exist, or that inadequately cover the subject matter.

Response. The draft SEIS and FSEIS were prepared in accordance with the policies, regulations, and guidance of the Vicksburg District and all applicable laws. The Final Report and FSEIS fully document methodologies and analyses. The Vicksburg District notes that FWS comments express concern that the DSEIS referred to appendixes. The Vicksburg District believes this is an appropriate approach and has updated both the FSEIS and appendixes to provide information clearly.

b. Comment: Page SEIS-1, Para 3. This paragraph states that the selected plan represents a balanced approach to flood damage reduction and environmental opportunities in the Yazoo Backwater Area. That plan consists of a 14,000 cfs pumping plant and a goal to reforest 62,500 acres of wetlands below 91 feet, NGVD. The Service believes this statement is inaccurate; a balanced plan would restore the ecological functions and values within a designated and dedicated NSFDRZ (i.e., the two-year floodplain), below which, agriculture would remain a high-risk land-use. Under that approach, the proposed pumps could be used to structurally reduce economic impacts of larger floods above the two-year event. A balanced plan would also fully acknowledge and consider economically and environmentally sustainable development in the context of the Project Design Flood.

Response. The Vicksburg District disagrees with the assertion that the recommended plan does not represent a balanced approach to flood damage and environmental opportunities in the Yazoo Backwater Study Area. The recommended plan balances the economic and environmental needs of the area by providing benefits to all resources in the area. The recommended plan will reduce the 100-year flood event by approximately 4 to 4.5 feet, and the 5- to 10-year event by approximately 5 feet. The acquisition of perpetual easements and reforestation on up to 55,600 acres of agricultural land will produce environmental benefits for terrestrial, aquatic, and wetland resources, and water quality. The project is formulated to address Yazoo Backwater flooding, not to protect the area from the Mississippi River Project Design Flood.

c. Comment: Page SEIS-3, Para 7 and 8. These paragraphs state that except for remaining compliance requirements as listed in Table SEIS-1, there are no unresolved issues for this stage of planning. The Service believes significant issues remain unresolved, and recommends that alternatives, which comprehensively consider the economic and environmental, needs of the project area be reformulated and analyzed (e.g., the designation and dedication of a NSFDRZ).

By the time the final EIS is distributed, Corps decision makers are required to ensure that all environmental protection statutes and requirements listed in Table SEIS-1 are met. Of the twenty statutes and requirements listed in the table however, slightly more than half remain to be met. Please review the general comments section for a synopsis of our major concerns and revise the subject table accordingly.

Response. The Vicksburg District has noted in the FSEIS both the status of statutory and regulatory requirements and has revised the text concerning unresolved issues and concerns. Table SEIS-1 has been updated as appropriate.

d. Comment: Page SEIS- 3 through 6, Para 10 and 11. The EO on Flood Plain Management, EO 11988, directs Federal agencies to reduce flood loss risk; minimize impacts on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. While the proposed action would reforest a limited acreage of the floodplain (i.e., a maximum of 9,091 acres of private agricultural land below 87 feet, NGVD), it would also drain wetlands and perpetuate farming of frequently flooded, poorly drained flood plain wetlands above that elevation. Alternatives that would have avoided adverse and incompatible development were prematurely discounted and discarded. Although the proposed plan would reduce adverse floodplain impacts, it would not avoid or minimize those impacts. On that basis, the Service concludes that the recommended plan fails to meet the spirit and intent of EO 11988.

Response. Plan formulation for the proposed project fully meets the intent of EO 11988 on Floodplain Management. The Vicksburg District has considered a range of alternatives to avoid adverse impacts in the flood plain. By raising the pump-on elevation from 80.0 to 87.0 feet, NGVD, the recommended plan avoids adverse effects to terrestrial, wetland, waterfowl, and aquatic resources on approximately 216,000 acres. The nonstructural feature of the recommended plan will acquire perpetual easements on lands up to 55,600 acres for reforestation/conservation measures primarily at or below the 1-year frequency flood plain (87.0 feet, NGVD, at the Steele Bayou structure).

e. Comment: Page SEIS-6, Para 12 and 13. The Executive Order on Wetlands, EO 11990, directs Federal agencies to avoid, to the extent possible, long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands if a practical alternative exists. The proposed action should be reformulated to significantly avoid and reduce adverse impacts to wetlands by dedicating the two-year floodplain as a NSFDRZ, instead of draining those cleared and forested wetlands above 87 feet in order to intensify marginal farming. The statement that impacts from the structural component were avoided by increasing the pumping elevation to 87 feet is inaccurate and misleading, since there are thousands of acres of wetlands above 87 feet that would be adversely impacted by operating the pumps. We agree that wetland impacts may have been reduced somewhat, but they were certainly not avoided. As such, we believe that the

proposed plan also fails to meet the spirit and intent of EO 11990. We recommend that this section be revised to include the actual wetland acreage that would be impacted by implementing the recommended plan.

Response. The Vicksburg District has considered EO 11990 through our planning process. The recommended plan raised the pump-on elevation 7 feet from the recommended plan in the 1982 Yazoo Backwater Area Pump Project Report, thereby avoiding impacts to 160,000 acres below elevation 87.0 feet, NGVD. In addition, the nonstructural reforestation features of the recommended plan will result in a substantial net gain in wetland acres and resource values for the area. The nominal pump on/off elevation is 87.0 feet, NGVD.

f. Comment: Page SEIS-11, Para 29. We concur with the implied goal of no net loss of natural resources. However, the Corps has opted to use conditions as they exist today as the baseline point for measurement of those impacts. This approach fails to consider the well-documented relationship between previous flood control/drainage and agricultural intensification in the Mississippi Alluvial Valley, which has resulted primarily from publicly financed drainage and flood control projects. The Service believes that, at a minimum, the Corps should consider the initial point of reference for measuring project impacts on project area wetlands as the late 1950's. At that time, data were collected regarding environmental resources in the project area, which resulted in the Comprehensive Review of the Mississippi River and Tributaries Project Report, transmitted to Congress on April 6, 1962. That report included a recommendation to acquire 70,000 acres of sump areas to "produce optimum flood control and fish and wildlife benefits," which was subsequently authorized by the Flood Control Act of 1965, but never implemented.

Response. The Vicksburg District appropriately used the baseline for measuring project impacts as preproject, current conditions. The suggestion that the Vicksburg District looks to the past (e.g., 1950s) is encompassed in discussion of cumulative impacts, not baseline. In addition, the prior projects referenced in this comment (including mitigation) have been addressed in prior reports. The FWS in 1959 recommended that approximately 70,000 acres of ponding area in the Backwater Area be purchased in fee title in three separate areas for fish and wildlife purposes. The recommended acreage was based on the anticipation of fish and wildlife losses that may result by construction of all features of the Yazoo Backwater Project (YBWP) and subsequent land conversion for agricultural purposes. Appendix L of the Mississippi River and Tributaries Comprehensive Review Report lists a number of proposed features of the YBWP. Several of these proposed features have not been constructed, and those that have been constructed were done so only after the completion of a detailed design effort. Mitigation requirements were determined independently for each separate item that was constructed. This independent mitigation is necessary to fully account for impacts to the environment that can be contributed to each item utilizing the best available environmental assessments available at the time. In addition to considering several proposed but never constructed features of the YBWP, FWS

based its 1959 recommendation for acquisition of 70,000 acres on monetary recreational values for fish and wildlife. The environmental impacts of the Yazoo Backwater Reformulation Project were evaluated utilizing current methodologies and the latest policies and regulations of USACE. The economic and environmental analyses for Federal water resource projects are guided by regulations contained in ER 1105-2-100, dated 22 April 2000, Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies.

g. Comment: Page SEIS-11, Para 30. This paragraph lists plan objectives, which do not coincide with those listed on page 43 of the main report. While some of the listed objectives are similar, others are completely different. Most importantly, specific objectives used to provide the basis for plan formulation, impact assessment, and plan selection are not identified. Absent such explanations, it is impossible to validate the analysis or determine if the logic applied was appropriate. The differing objectives raise concerns about the extent to which confusion and misunderstanding of study objectives could have translated into mistakes in plan formulation and analytical errors. The final document should be revised to correspond with the same set of objectives.

Response. The noted inconsistencies have been corrected.

h. Comment: Page SEIS-12, Para 33 and 34. These paragraphs state that traditional nonstructural measures were included in the alternative plan formulation process. Those traditional nonstructural measures included such obviously structural solutions as levees or walls around structures, raising structures in place, structure replacement, and waterproofing walls and openings. While such measures are traditional structural solutions to urban flooding, they are not appropriate to the non-structural reduction of agricultural flooding and drainage. Furthermore, they do not meet the criteria that define nonstructural measures.

Response. The Vicksburg District recognizes the potential for confusion in the term “nonstructural,” which was used to distinguish a category of flood damage reduction features from the pump station (structural control of hydrology) or reforestation. The Final Report and FSEIS seek to clarify this potential for confusion. The features mentioned such as small walls or raising structures in place are considered nonstructural features. Nonstructural features are defined as features, which permanently modify the damage susceptibility of existing structures, features that manage future development in terms of both location and damage susceptibility, and features which are part of a flood preparedness plan. None of these features would affect the hydraulics or hydrology of the area, but would provide flood damage reduction benefits.

i. Comment: Page SEIS-15, Para 36. The last sentence of this paragraph refers the reviewer to Table 4 on page 54 of the main report to review why several “nonstructural” measures were eliminated from further consideration. However, it appears that, although the referenced table is labeled as an economic analysis summary of nonstructural measures, the

measures analyzed appear to be, in fact, structural means and methods to provide flood damage reduction. Furthermore, the details and methodology for that analysis are absent. Page 53 paragraph 134 of the main report discusses the table, but does not discuss how costs, benefits, and benefit ratios were derived. References are made to hydrologic data, computer-based elevation models, and other computer-based models used to determine first costs, annual costs, annual benefits and benefit-cost ratios. Again, no discussion of exactly how these models function and how they were applied to the data is offered. Without such discussion, it is impossible to verify the data; accordingly, we recommend that these shortcomings be rectified in the final document.

Response. See response to 2h regarding confusion over the term “nonstructural.” The 2007 Appendix 7 describes the economic models and evaluations that included these flood damage reduction features. The features mentioned such as small walls or raising structures in place are indeed considered nonstructural features. Nonstructural features are defined as measures, which permanently modify the damage susceptibility of existing structures, features that manage future development in terms of both location and damage susceptibility, and features, which are part of a flood preparedness plan. The Final Report and FSEIS evaluated two nonstructural alternatives that contained floodproofing and removal of all structures within the 100-year flood plain. The details of this analysis are presented in Appendix 7. None of these features would affect the hydraulics or hydrology of the area, but would provide flood damage reduction benefits. Additional information concerning nonstructural features is included in the Final Report.

j. Comment: Page SEIS-16, Para 40. This paragraph should explain the relationship between elevation (e.g., 87 feet, NGVD) and the aerial extent of flooding (e.g., the 1-year floodplain) in a more precise and spatially accurate manner. The Corps’ explanation would consistently and erroneously lead one to believe that flood protection will accrue to all lands in the project area above 87 feet, which is patently false. Because this is the only reference regarding that relationship in the entire document, we believe the average reader will not keep this critically important relationship in mind when reviewing other portions of the text. Accordingly, we suggest that a series of maps that spatially depict this relationship be included and referred to frequently when the text refers to elevation data in reference to both backwater and headwater flooding.

Response. All lands in the study area will receive some flood benefits from the project but will not be flood-free. The 2007 Appendix 4 contains a number of plates that depict the aerial extent of flooding that occurs both with and without the proposed project in place. Additional information is included in the Final Report to provide a better understanding of the project.

k. Comment: Page SEIS-16, Para 42. Again, this paragraph refers to the main report where Tables 5 and 6 are presented. Once again, the pattern of simply presenting numbers without explanation is evident. There is no discussion of how the costs and benefits were derived, nor are the categories defined. Furthermore, there is no reference to where these data or discussions can be found. These shortcomings should be rectified in the final document.

Response. Incorporating by reference is an appropriate means of reducing the length of environmental impact statements. There are 17 revised appendixes to the Final Report and FSEIS to provide detailed supporting documentation. Appendix 7 contains the detailed economic data on the final array of alternatives. Appendix 6 contains cost estimates used in evaluating the final array of alternatives.

l. Comment: Page SEIS-21, Para 53. This paragraph discusses portions of the final array of alternatives and states that three operational features were included as project features, yet the discussion that follows only lists two operational features. The final document should be revised to clarify this discrepancy.

Response. This discrepancy has been corrected in the Final Report and FSEIS.

m. Comment: Page SEIS-23, Para 58. This sentence provides the rationale for the Corps dismissal of the Shabman approach to non-structural flood control from further consideration. The reasons given are partially discussed in paragraph 57; however, the reader is also informed that the alternative “does not meet the overall objectives of the study,” yet the objectives that were unmet and the Corps analytical basis for that conclusion are not provided. Such an analysis should be presented in the final document to support this assertion. Moreover, our general comments above discuss the OCE policy decision on the use of carbon sequestration reforestation and nutrient load reduction to economically justify non-structural measures. That general comment also explains the fundamental reasons for our non-concurrence with the OCE decision.

Response. The Final Report and FSEIS include a clarified statement of project objectives. The Shabman Plan was included in the DSEIS for public review. Alternative 2C of the FSEIS is based upon the Shabman Plan. It was evaluated like all other alternatives, but was not economically justified.

One of the four nonstructural alternatives in the final array (Alternative 2C) incorporated as many features of the Shabman Plan as possible that complied with Principles and Guidelines. The Shabman Plan, as presented by EPA, was not economically feasible without two benefit categories (carbon sequestration and nutrient reduction) not recognized by Principles and Guidelines.

A memorandum from the Director of Civil Works, June 2001, instructed USACE not to claim any carbon sequestration benefits on projects that promote reforestation. This policy was established because of the scientific, economic, and political uncertainties and complexities that surround this issue. Further investigation is needed to support the development of a sound USACE-wide policy on this subject.

n. Comment: Page SEIS-23, Para 59 and Table SEIS-3. The last sentence of this paragraph and the table subjectively evaluate the various plans. As such, they are more justification than evaluation. Given the purpose of the DSEIS, we recommend that these subjective references and the table be deleted from the final document.

Response. In the Final Report and FSEIS, the Vicksburg District has tried to present information on the alternatives without subjective references.

o. Comment: Page SEIS-24, Para 60. This paragraph initiates the discussion of the alternatives and is supposed to describe the no action alternative. Unfortunately, very little is said about baseline conditions and the future without condition, or any of the underlying assumptions. The Corps assumes that land-use conditions will continue without a project exactly as they exist today. The Service does not agree with that position. The Corps acknowledges this critically important area of disagreement, and erroneously refers the reader to Appendix 2 for a discussion of our position, which was not included.

Response. See response 1i. The referenced paragraph provides a description of the alternatives and is not a discussion. The Fish and Wildlife Coordination Act (FWCA) Report is included in the Final Report.

p. Comment: Page SEIS-25, Para 62. This section describes Plan 3 inconsistently with the description of plan 3 provided on page 70 of the main report. The time intervals of the pumping operational elevation do not match, and the description in the main report includes the reestablishment of forest on 27,435 acres of open land. These discrepancies need to be rectified in the final report. Corresponding portions of the analyses for plan 3 should be verified and updated as necessary.

Response. The time intervals for Alternative 3 as stated in the 2000 Draft Main Report are correct. This correction was included in the Final Report and FSEIS. The compensatory mitigation has been recalculated for the Final Report.

q. Comment: Page SEIS-28, Para 68. The reviewer is referred to Table SEIS-4 where a summary comparison of plans is presented. Since no data are presented for plan 1, comparisons with other plans are not possible. The table should be recast to supply relevant data that will facilitate a comparison of all alternatives, including “No Action. “

Response. The no-action alternative was included, but the alternative has no features for comparison. Comparative impacts of all alternatives including no action were presented in the 2000 Report Table SEIS-7.

r. Comment: Page SEIS-28, Para 69. The last two sentences of this paragraph refer the reader to Table SEIS-5 and present economic conclusions. The pattern of numerically displaying data without the benefit of discussion or a reference to an appendix that fully describes the methodology is once again evident. Please see our previous comments regarding page SEIS-16, paragraph 42.

Response. This paragraph provided a summary of the economic viability of the alternatives. For a full disclosure on economics, please refer to Appendix 7 of the Final Report.

s. Comment: Pages SEIS-30 through 33, Para 70-72. This section of the DSEIS presents an unsubstantiated justification for the Corps' selection of Plan 5, as the recommended plan. In contrast to CEQs Implementing Regulations, this section appears to justify a decision that has already been made, rather than allowing decision makers to evaluate alternatives and make decisions based on a full understanding of environmental consequences. Sections 1501(c) and 1502.14 of CEQs regulations clearly explain that the purpose of NEPA and the EIS is to present alternatives and their respective impacts in a comparative form that sharply define the issues and provides a clear basis for choice among options. In contrast, this section presents strong evidence of the Corps' attempt to justify their selection of Plan 5. We recommend that the Corps reinitiate the NEPA planning process, follow the spirit and intent of the Act, and objectively reformulate and re-evaluate all reasonable alternatives. Only after all alternatives are formulated correctly and evaluated equally should decision makers determine which alternative is the preferred approach.

Response. The NEPA allows the Vicksburg District to identify its preferred or recommended plan, which is the purpose of this text. All alternatives were evaluated and compared equally even though the Vicksburg District identified its recommended plan. The data are displayed for all alternatives in order for the decision maker to review and draw their own conclusions.

t. Comment: Page SEIS-33, Para f. This sentence states the recommended plan supports efforts to recover the pondberry, a federally listed endangered plant. In an October 16, 2000, letter to the Corps District Engineer, the Service presented a detailed review of Appendix 14, which is the Corps' Biological Assessment of impacts of the project on endangered and threatened species. In that letter, the Service concurred that the recommended plan will not likely adversely affect the Louisiana black bear, and concluded that further consultation for that species was not required. However, the Service did not concur with the Corps' determination that the project is not likely to adversely affect pondberry. The Service concluded that the recommended

plan is likely to adversely affect pondberry and recommended that the Corps initiate formal consultation to ensure it will not jeopardize the continued existence of pondberry, as required by Section 7(a)(2) of the Endangered Species Act. We recommend that this sentence be removed from the document, and that the final document be modified to accurately reflect the status and outcome of the consultation process.

Response. The Vicksburg District has modified the FSEIS to accurately reflect the status and outcome of consultation. The FWS concurred with the Vicksburg District determination that the project is not likely to adversely affect the threatened Louisiana black bear. Section 7 Formal Consultation has been completed for the endangered species pondberry. The FWS's Biological Opinion has also determined that the project will not jeopardize the continued existence of pondberry. The Vicksburg District, in consultation with FWS, will also implement conservation and recovery features, which include establishing two new pondberry populations and additional research in support of the pondberry recovery plan.

u. Comment: Page SEIS-35, Para 75. This paragraph states that the benefits for Plan 5 were updated based on 1999 crop budgets and 1999 current normalized prices, which are presented in Table SEIS-6. Previous discussions in paragraphs 69-71 stated that data presented in Table SEIS-5 were used by the Corps to select their recommended plan. Therefore, data used by the Corps to select a plan were outdated and the plan selection process was flawed. Section 1502.14(b) of CEQs Implementing Regulations clearly indicates that all alternatives should be treated in a similar manner, which was clearly not true in this case. We recommend that data for all plans be updated to the same level, and that evaluations be completely displayed in the final compliance documentation.

Response. This study effort has been underway since 1993. At each point where alternatives have been compared, all costs and benefits for all alternatives in each array were based on the same price levels. Although price levels have changed over time, this provides a consistent basis for comparison of differences between and among plans at any point within the study. Any change in price levels has the same impact on all plans. While this results in different benefits and costs for all plans, it produces a relative change in all plans so that their relationships to each other are not changed. The Final Report reflects the 2005 crop budgets and prices, along with 2005 land use data.

v. Comment: Page SEIS-35, Para 78. This paragraph states that initiation of pumping at 87 feet avoids adverse effects to terrestrial, wetland, waterfowl and aquatic resources below 87 feet, NGVD. That statement is true to some degree for any selected elevation; however, it is not true that those effects will be avoided throughout the 1-year floodplain. The degree, to which this is true for all plans and their pumping elevations, should be clarified and a comparative analysis should be provided in the final documentation.

Response. This paragraph refers only to the recommended plan. By raising the pump-on elevation from 80.0 to 87.0 feet, NGVD, the recommended plan avoids adverse effects to terrestrial, wetland, waterfowl, and aquatic resources on 216,000 acres.

w. Comment: Page SEIS-37, Table SEIS-7. Data displayed in the table are incorrect. For example, the acreage figure presented for aquatic resources is 72,316. The correct figure for the 2-year average seasonal flooded acreage is 129,013. Additionally, it is apparent that here and throughout the evaluation, the Corps characterized aquatic impacts solely on the basis of spawning impacts. The Service believes that aquatic impacts should have been characterized on the basis of both spawning and rearing impacts combined. Terrestrial impacts are characterized by evaluating the combined life requirements of all evaluation species, and aquatic impacts should be characterized in the same manner. We recommend that spawning and rearing impacts be combined for the purpose of treating aquatic impact characterizations. Data in the table and all subsequent evaluations should be corrected, based on an accurate evaluation of aquatic impacts.

Response. Appendix 10 has been revised in the Final Report and FSEIS. Research scientists at the U.S. Army Engineer Research and Development Center (ERDC), who prepared Appendix 10, determined that spawning is the controlling factor for aquatic resources. The decision to evaluate spawning and rearing impacts separately was made by the interagency Habitat Evaluation Procedures (HEP) team, which included FWS.

x. Comment: Page SEIS-39, Para 79. This paragraph states that reforestation of 62,500 acres of agricultural land as proposed in the recommended plan will provide a net gain for environmental resources, a premise with which the Service strongly disagrees. First, that plan does not minimize adverse impacts to fish and wildlife resources. Secondly, because the reforestation plan is so inadequately formulated and presented, its potential for implementation is almost nil. For example, there are only 9,091 acres of cleared, privately owned land below 87 feet. Thus, there is no assurance that the desired acreage figure would be attained. The Service recommends that a risk assessment of the reforestation measure be conducted to substantiate this conclusion. Furthermore, the recommended plan would result in water level reductions that would have the effect of expanding and intensifying agriculture in yet more flood-prone and poorly drained areas. The measure would also serve as a powerful disincentive to possible willing sellers, rather than promoting the reforestation effort. In fact, there is every likelihood that the recommended plan, its reforestation measure notwithstanding, will significantly reduce -- if not summarily end -- the current landowner-driven wetland reforestation trend in the Yazoo Backwater Area.

Response. The assertion that only 9,091 acres of cleared, privately owned land is located below 87.0 feet, NGVD, is incorrect because it is based on a flat contour and not on the 1-year frequency flood plain. There are 42,800 acres of cleared, privately owned lands within the 1-year frequency flood plain, which corresponds to elevation 87.0 feet, NGVD, at the Steele Bayou structure.

The reforestation component of the recommended plan will be implemented concurrently with construction. Once an easement is secured, a reforestation plan will be developed that will evaluate the species of trees most suitable for this tract. The evaluation will include a review of the frequency and duration of flooding, soil zones, tree species common to the area, planting dates, and other factors which may affect the mortality of trees. After planting, the tract will be monitored to ensure a sufficient survival rate of trees. If sufficient trees do not survive, the tract will be replanted until sufficient survival rates exist to ensure a satisfactory stand.

The Vicksburg District will acquire easements on 15,029 acres prior to pump station operation. If the Vicksburg District is unsuccessful in obtaining easements to cover the environmental losses associated with the pump station, construction of the Yazoo Area and Satartia Area Backwater Levee Projects, and the past construction work on the inlet and outlet channel, then the Vicksburg District will purchase in fee title lands above those purchased as easements.

As a result of the proposed project, there will be an increase in net returns on lands farmed in the study area. However, the total number of acres dedicated to farming will decrease by up to 55,600 acres with a corresponding increase in forested land. The reforestation trend in the Backwater Area was driven primarily by USDA programs. The WRP program has reached its cap in the two main study area counties, Sharkey and Issaquena. Thus, no additional reforestation is projected without modification of current government programs by each county. In order to facilitate easement acquisition, the Vicksburg District has extended the time by which easements will be secured from one to ten years after pump station completion.

The FSEIS covers and clarifies all of the above points.

y. Comment: Page SEIS-40, Para 83 and 84. This section states that, if a minimum threshold to achieve no-net-loss of environmental values is not achieved from willing sellers, the remaining acreage would be acquired as mitigation in fee title and refers the reader to Table SEIS-8. The DSEIS does not explain how this minimum threshold level was determined. Additionally, 12,980 acres is presented as the amount required to achieve no-net-loss of environmental resources for the recommended plan. No explanation of how this figure was derived is presented. The final document should present that methodology, and clarify whether this is the acreage actually targeted for reforestation under the recommended plan.

Response. This documentation was included in the draft Appendix 1 and is included in the FSEIS and final Appendix 1.

z. Comment: Page SEIS-41, Para 86. This paragraph states that establishment and survival monitoring of seedlings will cease after 3 years, and that land use monitoring will occur every 5 years through the use of remote sensing techniques. This section does not discuss how easement compliance will be assured or how easement violations will be remedied. These easement compliance issues should be fully discussed in the final document.

Response. The Vicksburg District will visually monitor these tracts after the initial reforestation/conservation features are installed, but once reforestation is determined to be successful and the water control structures are installed, only occasional visual on-the-ground monitoring will be conducted. The Vicksburg District will primarily use remote-sensing techniques to monitor the land use of these tracts. Should this monitoring indicate a violation in the terms of the easement, the Vicksburg District will take the necessary action to regain voluntary compliance with the terms of the agreement or use legal actions, if necessary.

aa. Comment: Page SEIS-44, Para 97. Despite the recent restoration trend, the Corps predicts that no changes in land use for future without-project conditions are expected. No increase in reforestation is predicted by the Corps “. . . because the ceilings for enrollment in Sharkey and Issaquena Counties have been reached,” despite the fact that more than 9,000 acres of additional restoration have been quantified since the Service’s September 1999, future without-project projection was provided. Although not explained, the ceilings referred to are associated with Federal conservation programs administered by the U.S. Department of Agriculture. Moreover, we are aware of efforts by the Congress to substantially raise those caps. In contrast to the Corps’ projection, the Service estimates that over the 50-year project life, 43,432 acres of agricultural lands would be reforested in the study area (again, more than 9,000 acres of which have already occurred). This information and the rationale for this Service position, although referred to, was not included in the DSEIS. In fact, careful review of Table SEIS-10 reveals that the Corps has inaccurately incorporated the Service’s data in that table. We believe the data presented in that table for the FWS Future Without Project acreage for soybeans should be 161,855 and the figure presented for Bottom-land Hardwood should be 247,650.

Response. See response 1i.

bb. Comment: Page SEIS-46, Para 98 and Table SEIS-11. Data referred to by this paragraph and contained in Table SEIS-11 are inaccurate. A comparison to those figures presented in Table SEIS-10 reveals discrepancies among the numbers presented. More

importantly, the data displayed in this table should be presented based on the differing opinions of the Corps and the Service regarding most probable land use without the project. This table should be modified to accurately depict both the Service's and Corps alternative without-project futures.

Response. This table reflected current, not future, conditions. The Final Report has been revised utilizing 2005 land use information. The FWS numbers were not included in the FSEIS because of the difference in the databases used by FWS and the Vicksburg District.

cc. Comment: Page SEIS-49, Table SEIS-12. Data presented in the table are in error. The data presented for the Service's projection of future without-project conditions for soybeans in Reach 1 should be 0 not 13, and the correct figure for BLH should be 58, not 54. Similarly, data for soybeans and BLH in Reach 2 should be 21 and 41 respectively, not 26 and 36 as presented. These data should be corrected in the final document.

Response. Appendix 12 (Waterfowl Appendix) was revised to include the Vicksburg District's 2005 land use data. The FSEIS does not present the FWS without-project data.

dd. Comment: Page SEIS-49, Table SEIS-13. Data presented in this table are inexact. Data for DUD/acres and the Corps future without-project projection are correct; however, the data for the Service future without-project were not accurately presented. Data for the Corps projection was derived from Table 7 of Appendix 11. Data for the Service's projection should have been derived from Table 10 of Appendix 11. Therefore the table should appear as follows:

Land Use	DUD /acre	Reach 1		Reach 2		Reach 3		Reach 4	
		Corps	FWS	Corps	FWS	Corps	FWS	Corps	FWS
Fallow	1037	186	186	109	109	51	51	203	203
Rice	580	510	510	370	370	26	26	101	101
Soybean	253	603	0	1,002	457	256	256	633	633
BLH	57	2,088	2,691	349	894	1,815	1,815	836	836
Total	N/A	3,387	3,387	1,830	1,830	2,148	2,148	1,773	1,773

Response. See response 2cc.

ee. Comment: Page SEIS-50, Table SEIS-14. Since data in this table are dependent on the data in Table SEIS-13 (see above comment), the data presented are erroneous. The table should appear as follows:

Reach	Average Seasonal Duck acres	Baseline DUD	Corps Future w/o DUD	FWS Future w/o DUD
1	3,387	760,257	760,257	750,609
2	1,830	601,032	601,032	592,312
3	2,148	236,190	236,190	236,190
4	1,773	476,892	476,892	476,892
Total	9,138	2,074,371	2,074,371	2,056,003

Response. See response 2cc.

ff. Comment: Pages SEIS-50 through 52, Para 107-109 and Table SEIS-16. Data presented in the discussion of terrestrial resources in paragraphs 107 through 109 and corresponding data presented in the referenced table conflict; the data presented in the table do not agree with data previously presented in the DSEIS. Paragraph 107 states “However, 273,398 acres of bottom-land hardwoods (including swamp cover type) provide the highest quality and most stable habitat.” Addition of the acreage figures for those cover types from Table SEIS-10 yields an acreage figure of 233,869, yet table SEIS-16 utilizes an acreage figure of 197,200 for forested lands. There is an obvious discrepancy between the reported acreages of forested habitat types and the acreage utilized for computation of impacts.

Assuming that the Corps acreage figure reported in Table SEIS-16 is correct, the data presented in the table are in error. Based on the 197,200-forested acreage figure reported in the table and our verification of the computations, we believe the table should read as follows:

Evaluation Species	Corps Forested Acres	FWS Forested Acres	Baseline HU	Corps Future Without-Project AAHU	FWS Future Without-Project AAHU
Non-water Dependent	197,200	233,104	577,796	577,796	688,186
Wood Duck	66,851	79,022	32,088	32,088	32,088
Mink	60,540	71,563	7,265	7,265	13,333
Total			617,149	617,149	733,607

Response. Appendix 13 (Terrestrial Appendix) was revised to include the Vicksburg District’s 2005 land use data. The FWS future without-project projection is not included in the analysis.

gg. Comment: Page SEIS-53, Table SEIS-17. Acreage figures presented in the table are not supported by a discussion of the methodology utilized to derive them. We recommend that a discussion of the methodology utilized to arrive at those acreages be presented in the final document.

Response. Appendix 10 (Wetland Appendix) was revised in the Final Report and utilizes a different methodology to determine wetland impacts and the Vicksburg District’s 2005 land use data. Data from Appendix 10 were utilized in preparation of the FSEIS.

hh. Comment: Pages SEIS-54 through 56 and Tables SEIS-20, 21, and 22. Data discussed in paragraphs 114, 115, and 116 (which are displayed in Tables SEIS 20, 21 and 22) do not match the data presented in technical Appendix 13. Additionally, the data presented in those tables are incorrect and present an inaccurate projection of the Service’s future without-project analysis. We recommend that the acreage figures presented in Tables SEIS-20 and 21 be the product of the average flooded acres currently displayed, and the relative distribution by reach presented in Table SEIS-19. This approach would allow for a rapid validation of the acreage

presented for the baseline and Corps future without-project projections by reference to Appendix 13. The Corps has also inaccurately interpreted the Service’s projections of future without-project conditions. In so doing, they inaccurately and inappropriately added 30,293 acres, divided equally, to the acreage for reaches 1 and 2. The correct acreage figure should have been 35,904, and that acreage should have been distributed exactly in accordance with Tables 3a and 3b of the Service’s September 1999 planning aid report. In an effort to validate the data presented in Tables SEIS-20 through 22, we multiplied the average daily flooded acres by reach times the relative wetland distribution displayed in Table SEIS-19, and multiplied the result by the Wetland Functional Capacity Index (FCI) values for forested and farmed conditions to determine the Functional Capacity Units (FCU) displayed in the tables. Our validation revealed that computational errors were made, and that the data presented in Table SEIS-20 should be:

Reach	Average Daily Flooded Wetland Acres	Baseline FCU	Corps Future Without Project FCU	FWS Future Without Project FCU
1	15,658	83,615	83,615	139,225
2	2,160	11,534	11,534	66,553
3	14,106	75,324	75,324	75,324
4	3,210	17,144	17,144	17,144
Total	35,134	187,616	187,616	298,246

Similar treatment of the data in Table SEIS-21 would yield the following data:

Reach	Average Daily Flooded Wetland Acres	Baseline FCU	Vicksburg District Future Without-Project FCU	FWS Future Without-Project FCU
1	5,592	13,142	13,142	4,600
2	5,684	13,357	13,357	5,076
3	1,587	3,729	3,729	3,729
4	535	1,257	1,257	1,257
5	13,398	31,486	31,486	14,662

Because Table SEIS-22 is a summation of data in Tables SEIS-20 and 21, it should read:

Reach	Baseline FCU	Corps Future Without Project FCU	FWS Future Without Project FCU
1	96,756	96,756	143,825
2	24,891	24,891	71,629
3	79,053	79,053	79,053
4	18,401	18,401	18,401
Total	219,102	219,102	312,908

Response. Appendix 10 was revised to use a different methodology to determine wetland impacts and the Vicksburg District's 2005 land use. The FSEIS does not present the FWS without-project data.

ii. Comment: Pages SEIS-58 and 59, Para 120 and 121, and Table SEIS-26. The data in this table should be displayed by reach and broken down into two tables, one for spawning habitat and the other for rearing habitat. Table SEIS-26 for spawning habitat should read:

Reach	Average Daily Flooded Acres	Baseline HU	Corps Future Without Project HU	FWS Future Without Project HU
1	24,270	72,958	72,958	80,664
2	13,851	22,914	22,914	31,446
3	20,278	70,269	70,269	70,269
4	13,917	33,966	33,966	33,966
Total	72,316	200,107	200,107	216,345

Similarly Table SEIS-26 for rearing habitat should read:

Reach	Average Daily Flooded Acres	Baseline HU	Corps Future Without Project HU	FWS Future Without Project HU
1	47,426	62,304	62,304	67,269
2	22,867	12,026	12,026	16,704
3	34,075	43,694	43,694	43,694
4	24,645	22,858	22,858	22,858
Total	129,013	140,882	140,882	150,526

These data should be combined and evaluated as the actual project impact on aquatic resources.

Response. Appendix 11 (Aquatic Appendix) was revised in the Final Report, and it uses the Vicksburg District's 2005 land use data. The FSEIS does not present the FWS without-project data. The decision to evaluate spawning and rearing impacts separately was made by the interagency HEP team, which included FWS.

jj. Comment: Page SEIS-67, Table SEIS-28. The data displayed in the table cannot be verified or validated because there is no explanation of the methodology by which they were derived. The methodology utilized to produce the data in the table should be clearly and succinctly discussed in the final document. The data in the table SEIS-28 and in the text discussion would be clarified by the use of figures (maps) and actual acreage tables for each projection, as well as the percentage change expected to occur with each projection. We recommend that two figures (maps) presenting the data differences be produced, and that a table be displayed that depicts the acreage at baseline and at the project life (50 year) end-point for both the Corps' projections and the Service's projections.

Response. Detailed information on development of land use information utilized in the Final Report is provided in the Appendix 6 (Engineering Appendix).

kk. Comment: Page SEIS-68, Para 143 and 144 and Table SEIS-29. The data in the table and therefore the summary statements found in these paragraphs are incorrect. Again, there is no discussion regarding the methodology used to produce the data. Based on the discussion found in Appendix 11 and the inadequate explanation of the data found in paragraphs 143 and 144, we believe the data presented in the table are inaccurate and should be presented as follows:

Alternative	Seasonal Daily Acres Impacted	Seasonal Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
		Corps	FWS	DUD <sup>a/</sup>	Change	DUD <sup>a/</sup>	Change
2	0	4,050	4,050	-824,505	-39.7	-534,061	-14.1
3	-836	0	0	-190,790	-9.2	99,654	4.8
4	-814	3,697	4,050	-936,609	-45.2	-646,165	-31.4
5	-353	3,902	4,050	-873,432	-42.1	-582,988	-28.4
6	1,302	4,708	4,050	-634,017	-30.6	-343,573	-16.7
7	1,451	4,778	4,050	-612,924	-29.5	-322,480	-15.7

a/ Includes the loss of 2,166 DUD from the clearing of 38 acres at the pump site on Plans 3 through 7.

Response. Appendix 12 (Waterfowl Appendix) in the Final Report has been revised and includes the Vicksburg District's 2005 land use data. The FSEIS does not present the FWS without-project data.

ii. Comment: Pages SEIS-69 and 70, Para 145-148, and Table SEIS-30. The discussion refers the reader to Appendix 12 and presents data directly from Table SEIS-30. We believe the data presented in the table are incorrect. Of the several methods utilized in this compliance documentation and its appendices to determine impacts, all typically quantify impacts by comparing future without-project conditions to future with-project conditions. In other words, a baseline level or index is determined and a specific value calculated. Projections of with-project conditions are made and a measure of that same index is calculated for the projected end of project condition. The net effect of the project is the difference between the two indices. If baseline-starting conditions are different but impact effects are identical, applying a correction factor to one or the other of the end points should yield similar impacts. By starting with the data initially presented in the table and the logic discussed in the table's footnotes, we were able to determine that the data presented for the Corps' net effect is displayed properly. However, the data presented for the FWS net effect is not correct, and we recommend that the table be revised as follows:

Alternative	Acres Reforested		Corps Net Effect		FWS Net Effect	
	Corps	FWS	AAHU	Change %	AAHU	Change %
2	107,000	71,096	170,413	-27.6	286,871	39.1
3	0	0	(6,680)	-1.1	109,778	15.0
4	40,600	4,696	74,532	12.1	190,990	26.0
5	62,500	26,596	107,674	17.4	224,132	30.1
6	77,300	41,396	134,987	21.9	251,445	34.3
7	107,000	71,096	181,328	29.4	297,786	40.6

Response. Appendix 13 (Terrestrial Appendix) in the Final Report has been revised. The FSEIS does not present the FWS net-effect data.

mm. Comment: Page SEIS-70 through 72, Para 149 through 155, and Tables SEIS-31 and 32. The discussion presents background information regarding wetland impacts and makes observations regarding the data displayed in the tables. Some of the data in the tables are in error. In Table SEIS-31, the FCU figure for the FWS Net Effect presented for reach 6 is inaccurate. Rather than the 91,751 figure presented, our verification of the calculation revealed

that figure to be 100,209. Additionally, it appears that the percentage change figures were erroneously calculated by using the Corps' baseline FCU rather than the FWS baseline FCU as the divisor in the computation. Therefore, all the percentage figures for the FWS Net Effect presented in the table are inaccurate.

In Table SEIS-32, the data presented for both the Corps Net Effect and the FWS Net Effect impacts are inaccurate. We believe the table should read:

Alternative	Daily Acres Impacted		Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
			Corps	FWS	HU	Change %	HU	Change %
2	0	0	0	0	0	0	0	0
3	(3,495)	(1,637)	0	0	(8,473)	(26.9)	(4,107)	(28.0)
4	(2,610)	(1,220)	0	0	(6,394)	(20.3)	(3,127)	(21.3)
5	(1,277)	(586)	0	0	(3,261)	(10.4)	(1,637)	(11.2)
6	1,000	490	0	0	2,090	6.6	892	6.1
7	1,697	817	0	0	3,728	11.8	1,660	11.3

Response. Appendix 10 (Wetland Appendix) in the Final Report has been revised. The FSEIS does not present the FWS net-effect data.

nn. Comment: Page SEIS-72 and 73, Para 156 and 157. These paragraphs set the stage for the following discussion of aquatic impacts. We believe the aquatic impacts should present a combined index of spawning and rearing requirements, as noted previously.

Response. See response 2ii.

oo. Comment: Page SEIS-73, Para 158-159 and Table SEIS-33. Again the discussion simply presents observations regarding net habitat unit impacts and percentage changes based on data presented in the table. We recommend the table be revised as follows:

Alternative	Daily Acres Impacted	Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
		Corps	FWS	HU	Change %	HU	Change %
2	0	34,218	29,159	80,070	40.0	68,232	34.1
3	(23,539)	0	0	(55,223)	-27.6	(55,223)	-27.6
4	(18,037)	25,538	21,766	17,410	8.7	8,584	4.3
5	(10,998)	28,840	24,478	41,608	20.8	31,401	15.7
6	(4,712)	31,861	27,165	63,387	31.7	52,398	26.2
7	1,022	34,701	29,558	83,450	41.7	71,415	35.7

Response. Appendix 11 (Aquatic Appendix) was revised in the Final Report using 2005 land use data. The FSEIS does not present the FWS net-effect data.

pp. Comment: Page SEIS-74, Para 161-162 and Table SEIS-34. Here again, the discussion is largely comprised of observations regarding the percentage of change based on data presented in the table. We again question the accuracy of that data. We believe the table should be revised as follows, and that the text be revised accordingly:

Alternative	Daily Acres Impacted	Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
		Corps	FWS	HU	Change %	HU	Change %
2	0	60,478	51,094	41,730	29.6	35,255	25.0
3	(40,391)	(40,391)	(40,391)	(27,914)	-19.8	(27,914)	-19.8
4	(29,676)	16,488	16,488	11,333	8.0	11,333	8.0
5	(15,073)	37,906	44,699	26,111	18.5	20,398	14.5
6	(3,043)	55,499	49,349	38,250	27.2	31,907	22.6
7	4,652	67,182	52,741	46,312	32.9	39,557	28.1

Response. See response 2oo.

qq. Comment: Pages SEIS-75 and 76, Para 163 through 166. Our previous specific comment regarding the Corps' assessment of project impacts on the endangered pondberry plant apply here, as well.

Response. See response 2t.

rr. Comment: Pages SEIS-78-80, Para 174 through 177 and Tables SEIS-35, 36, and 37. This section presents general observations regarding project impacts based on summary data presented in Tables SEIS-35, 36, and 37. The data in the tables do not treat all impacts and projections equally. The reported aquatics HU changes presented in Table SEIS-35 are based on spawning impacts only, and the rearing impacts appear to have been omitted. Moreover, a table presenting a summary of effects for all categories based on the Service's future-with-out project projections is missing. Table SEIS-36 is apparently based on a compilation of the data presented in Table SEIS-35. Table SEIS-37 presents data for the Service's position, but a table similar to Table SEIS-35 is not displayed. A table similar to Table SEIS-35 should be constructed to present the Service's baseline comparison in order to verify the data presented in Table SEIS-37. The discussion in this section and Tables SEIS-35, 36, 37, and the proposed new table should also be revised to reflect the detailed comments presented previously.

Response. The Final Report and FSEIS included 2005 land use data. The FSEIS does not present FWS's summary of net-effect data. The Final Report includes both spawning and rearing impacts.

ss. Comment: Page SEIS-82, Para 182, and Table SEIS-39. The text and table fail to discuss the relationship of the recommended plan with the present actions in the study area. We are specifically concerned with the Corps' failure to treat the Big Sunflower Maintenance Project within the context of formulating non-structural approaches to agricultural drainage in the Yazoo Backwater Area. Our concerns emanate from the obvious and inextricable hydrological and physiographic overlap between the two projects. Channel work on the Big Sunflower Project will impact approximately 80 percent of the Service-proposed NSFDRZ for the Yazoo pumps. We are particularly concerned that the proposed work on the Little Sunflower River will drain wetlands restored under the auspices of the Conservation Reserve Program (CRP) and Wetland Reserve Program (WRP), as well as a portion of Delta National Forest. Thus, there are substantial questions associated with the Corps' failure to consider and evaluate both projects, inasmuch as the recommended plans conflict with each other, and could have potential effects on the endangered pondberry. One of the principal issues to be addressed during a comprehensive re-evaluation of both projects would be the extent to which much of the channel work on the Big and Little Sunflower Rivers are actually justified.

Response. Appendix 10 (Wetland Appendix) in the Final Report and FSEIS contains a cumulative impacts assessment which addresses the impacts from the Big Sunflower Maintenance Project and other projects. After formal consultation on the endangered plant pondberry, FWS concluded that the project was not likely to jeopardize the continued existence of pondberry.

tt. Comment: Page SEIS-82, Para 183. This paragraph presents incorrect data for the WRP and CRP. According to our latest information, there are currently 24,132 acres enrolled in the WRP program and 9,223 acres enrolled in the CRP program. We recommend that these figures be revised in the final document, and that all relevant discussions, especially those for the future without-project conditions, be revised accordingly.

Response. See response 1i.

uu. Comment: Page SEIS-84, Para 184. The statement that other Legislative authorities (Clean Water Act, etc) and Executive Orders have addressed wetland protection is incorrect. It is widely acknowledged that these initiatives have been minimally effective in reducing the losses of wetlands both nationally and in the Yazoo Backwater Area. The economics of row crop farming in concert with Federal agriculture programs have resulted in adverse impacts to 80 percent of the nation's wetlands. Implementation of the recommended plan will likewise reduce the extent of wetlands within the Corps, jurisdiction, leaving them open to subsequent unregulated and unmitigated conversion to non-wetland uses.

Response. The DSEIS and FSEIS present information about wetlands protection legislation, as well as information about practices of agricultural conversion of bottom-land hardwoods. The FSEIS identifies the range of wetlands that could cease to be regulated under the Clean Water Act. The recommended plan would compensate for these impacts and with the nonstructural reforestation feature, would increase wetland resource functions by 19.5 percent. The adverse impacts to the Nation's wetlands to which you refer occurred prior to the passage of many of the current laws and regulations that now regulate wetlands.

vv. Comment: Page SEIS-88, Para 192 and Tables SEIS-41 and 42. The discussion refers the reader to the tables to review the compensatory acreage figure calculated and the respective minimum threshold of acreage that would need to be reforested to reportedly achieve a no-net-loss of environmental resource value. The calculations to produce the data reported in the tables were inaccurate, and the data reported are in error. Table SEIS-41 should read:

Alternative	Compensatory Mitigation (acres)	Minimum Threshold (acres)
Plan 1	None	None
Plan 2	None	None
Plan 3	27,832	27,832
Plan 4	None	21,540
Plan 5	None	13,273
Plan 6	None	5,828
Plan 7	None	388

Table SEIS-42 should be revised to read:

Alternative	Compensatory Mitigation (acres)	Minimum Threshold (acres)
Plan 1	None	None
Plan 2	None	None
Plan 3	30,244	30,244
Plan 4	None	23,415
Plan 5	None	14,334
Plan 6	None	6,342
Plan 7	None	1,705

Response. The acreage presented in Tables SEIS-41 and SEIS-42 in the draft report were correct. However, these numbers have been revised in the Final Report and FSEIS due to updates in the environmental appendixes.

ww. Comment: Page SEIS-89, Para 193 and 194. The acreage figures presented in this discussion are inaccurate and should be revised. Those figures are based on the discussion found in Appendix 1. Careful review of that Appendix reveals that the calculations used to generate those figures are also flawed. Therefore, we believe the acreage of reforestation required to offset terrestrial losses from the Yazoo Backwater Levee is 3,696, not the 3,617 figure presented in the text. Additionally, the 481-acre figure presented as required to offset the 296 acres cleared as part of the inlet and outlet channel construction in 1987 was inaccurately rounded off to 481 acres, rather than the correct figure of 482 acres. Therefore, the minimum acreage of reforestation required would be 18,512, rather than the 17,078 figure presented in paragraph 194.

Response. The mitigation analysis has been updated for the FSEIS, and these comments were considered. The cooperating agencies, including FWS, participated in review of the methodology to calculate mitigation in the revised Appendix 1 in 2005.

xx. Comment: Page SEIS-91, Para 206. The Service strongly disagrees with the conclusion that the recommended plan represents a balanced approach to solving the flood damage-reduction problem, and meeting the environmental opportunities in the study area. We believe that implementation of a non-structural Federal water resource development project under the authority of the Mississippi River & Tributaries (MR&T) Project that will: (1) provide a water and related land resource base sufficient to support economically and ecologically sustainable development; (2) result in a substantial realignment of land use with land capability; and, (3) in terms of policy, purpose, and result, reflect “new direction” in the MR&T approach to floodplain management, wetland conservation, and air and water quality improvement, would provide a truly balanced solution to the long-standing and nationally significant water and related land resource problems in the Yazoo Backwater Area.

Response. This comment is noted. Please see response to comment 2b and the other comment responses.

3. Appendix 1 – Mitigation.

a. Comment: Page 1-11, Table 1-5. Data presented in this table do not match the corresponding data presented in Table SEIS-30 of the DSEIS, nor the data presented in Table 18 of Appendix 12 which are purportedly the basis for this table. It appears from the title, that this table should present the net hydrologic impacts and reforestation benefits. We recommend that the table be revised as follows:

Plan	Net Change in Average Annual Habitat Units						Total
	Barred Owl	Gray Squirrel	Carolina Chickadee	Pileated Woodpecker	Wood Duck	Mink	
1	0	0	0	0	0	0	0
2	31,653	45,403	45,088	24,677	20,415	3,177	170,413
3	0	0	0	0	(5,615)	(957)	(6,572)
4	12,655	18,152	18,026	9,866	13,070	2,871	74,641
5	19,481	27,944	27,750	15,187	14,400	3,019	107,782
6	24,094	34,561	34,321	18,784	14,983	2,625	129,368
7	33,352	47,840	47,508	26,001	24,047	2,689	181,436

This table is also described in paragraph 24 to depict the net result of reforestation. However, the table’s title implies the data displayed are a combination of the data displayed in Table 1-4 and the reforestation impacts; however, the data depict reforestation impacts only. We recommend that the text describing Table 1-5 be corrected in the final compliance documentation to reflect that the table presents total net impacts, and that the table be corrected as outlined above.

Response. Appendix 1 (Mitigation Appendix) in the Final Report and FSEIS has been revised.

b. Comment: Page 1-13, Para 28. This paragraph discusses data presented in Table 1-6 and points out that three plans will cause a reduction of wetland acreage. Objective (f) of the Corps’ planning objectives states. “Provide, at a minimum, no net loss of natural resources.” Based on the data presented in Table 1-6, those three plans would fail to meet the Corps’ stated objective.

Response. The Vicksburg District’s objective of no net loss of significant resources recognizes that the project will have impacts which must be mitigated using functional assessment methodologies. The Appendixes 1 and 10 (Mitigation and Wetland Appendixes) in the Final Report and FSEIS have been revised.

c. Comment: Page 1-14, Table 1-7. Some of the data presented in the table are incorrect. Based on our verification of the data, the last three columns should read:

Alternative	Total FCU Change	Total FCU/ Total FCI	Mitigation Acres Required
1	0	0	0
2	77,919	32,602	0
3	(52,754)	(22,073)	(22,073)
4	23,783	9,951	0
5	51,995	21,755	0
6	105,378	44,091	0
7	123,173	51,537	0

Response. Appendix 10 (Wetland Appendix) was revised to utilize a different methodology to determine wetland impacts. Therefore, Appendix 1 includes a revised wetland mitigation analysis.

d. Comment: Page 1-21, Para 42 and Table 1-13. The discussion implies that Table 1-13 is a summary of impacts for all plans. Our review of those data revealed that the Aquatic AAHU impacts data are based solely on spawning habitat impacts. Discussions in Appendix 10 indicate that the spawning acreage also supports fish rearing. We are concerned that aquatic impacts have been significantly underestimated due to this approach. If those waters provide both spawning and rearing functions, then spawning and rearing impacts are additive. Because determinations of terrestrial impacts were handled in an additive manner, fisheries impacts should be handled similarly.

Response. The revised Appendix 11 provides discussion on why spawning impacts were used to determine minimum threshold of reforestation. See also response 2ii.

e. Comment: Page 1-25, Para 52, 53, and 54. The discussion in these paragraphs reviews the calculations for the reanalysis of mitigation requirements for the Lake George area. Some of those calculations were inaccurate, and the correct additional mitigation requirement is 3,696 acres.

Response. The Lake George compensatory mitigation analysis has been updated to reflect an additional 7 years since the release of the 2000 Draft Report. The correct compensatory mitigation acreage is 3,848.

f. Comment: Pages 1-25 and 1-26, Para 55. Calculations for determining the mitigation requirement for previous clearing at the pump site were improperly rounded down; the correct figure should be 482 acres.

Response. The value in Appendix 1 is 519 acres.

g. Comment: Page 1-27 and 1-28, Para 56 through 59, and Tables 1-15 and 1-16. The discussion and tables should be corrected based on our previous specific comments on the applicable parts of the DSEIS outlined above.

Response. The Terrestrial, Waterfowl, Wetland, and Aquatic Appendixes have all been revised in the Final Report and FSEIS. Therefore, summary tables in the final Mitigation Appendix have been updated.

h. Comment: Page 1-29, Table 1-17. Because of the previously mentioned calculation errors, the data displayed in this table are also incorrect. If the corrections for the pump structure are applied, then the figure will change from 481 to 482, and the figure presented for the Lake George area will change from 3,617 to 3,696; the correct result for total acreage to be acquired will therefore be 17,158 rather than 17,058.

Response. See responses 3e and 3f.

i. Comment: Page 1-45, Para 100. The acreage figure (4,098) presented is incorrect. Based on the preceding comments, the correct figure is 4,178.

Response. The compensatory mitigation acreage in the Final Report and the 2007 Appendix 1 is 4,367.

j. Comment: Page 1-47, Table 1-22. The data presented in the table are inaccurate. The revised table should read as follows:

Alternative	Compensatory Mitigation (acres)	Minimum Threshold (acres)	
		Corps	FWS
1	None	None	None
2	None	None	None
3	27,832	27,832	30,244
4	None	21,540	23,415
5	None	13,273	14,334
6	None	5,828	6,342
7	None	388	1,705

Response. See response 3g.

k. Comment: Pages 1-51 through 1-56. The discussion contained herein recounts the status of mitigation associated with various projects both within and outside the project area and the State of Mississippi. We recommend that all projects not directly related to the Yazoo Backwater Reformulation Study area (at a minimum those detailed in paragraphs 116, 118, 119, 120, and 121) be deleted from the document, as they are not germane to the issue of unmet mitigation for the Yazoo Basin projects. This is especially true inasmuch as non-structural flood damage reduction must occur within the project area to achieve any reduction in flood damages.

Response. This information is relevant since comments have suggested that the Vicksburg District has not attained previous mitigation commitments. The FSEIS contains this information.

4. Summary Comments Section.

Comment (p 27). The US Department of Interior recommends that the planning process be reinitiated. The USFWS plan should be fully addressed and a new draft supplement to the EIS be prepared and circulated for review. Should the Corps not follow guidance from the USFWS they will refer this project to CEQ under Section 1504 of the Council's Regulations for Implementing the Procedural Provisions of NEPA.

Response. Comment noted.