

THE CORPS OF ENGINEERS WETLANDS RESEARCH PROGRAM

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Abstract. The Corps of Engineers Wetlands Research Program is being conducted by the Waterways Experiment Station in Vicksburg, Mississippi. The purpose of this program is to: develop methods for wetlands delineation; establish techniques for determination of wetlands values; and develop techniques for restoration of permafrost, freshwater and coastal wetlands.

INTRODUCTION

The Corps of Engineers has established the Wetlands Research Program (WRP) at the Waterways Experiment Station in Vicksburg, Mississippi, to assist in the Corps missions under Section 404 of the Clean Water Act, and to respond to the mandates of Executive Order 11990. The purpose of the WRP is to expand the Corps knowledge in several key areas; the development of improved and standardized techniques to assist field personnel in the technical identification and delineation of wetlands; the assessment and quantification of wetlands values for use in the evaluation of permit activities and planning process; and the development of techniques for restoration in coastal, freshwater interior, and permafrost wetlands. A variety of wetlands training courses provide a major information outlet. Table 1 summarizes the programs's work units, objectives and priorities. The WRP research team includes scientists from the Corps, the USDA Soil Conservation Service and the USDI Fish and Wildlife Service. Publications are listed on Table 2.

WETLANDS IDENTIFICATION AND DELINEATION

A major objective of the WRP is the development of techniques that will assist Corps personnel in the technical identification and delineation of wetlands potentially subject

to jurisdiction under the Section 404 Regulatory Program. Emphasis is placed on an integrated approach to wetlands delineation involving the field identification and interpretation of soil, vegetation and hydrologic indicators. Products prepared to date include a series of eight regional wetlands guides. Four reports in this series have been published, and four are now in the final stages of the publication process. This phase of the research began in 1978 and will end in 1984 with the completion of the Wetlands Manual. That manual will include technical standards, procedures for implementing the technical standards, a field inspector's workbook, and region specific appendices related to soils, vegetation and hydrology.

WETLANDS VALUES

Wetlands values studies in the WRP are designed to assist the Corps in regulatory, planning, construction and operational activities. This research began in 1980 and will be completed in 1987. Preliminary efforts have concentrated on the location of existing information, identification and categorization of Corps needs and development of qualitative techniques for values determination. Long-term plans include quantification of biological, physical, chemical and cultural values selected on the basis of their significance in Corps activities.

WETLANDS RESTORATION

The development of techniques for wetlands restoration in coastal, freshwater interior, and permafrost environments forms the third element of the WRP. The capacity to restore wetlands damaged by permitted or construction activities substantially enhances the Corps flexibility in the management of these resources. Corps studies on coastal wetlands restoration (and freshwater and permafrost areas to a lesser extent) have been underway for more than a decade. Concentrated studies on freshwater interior and permafrost wetlands are scheduled to begin in 1984 and be completed by 1987.

WETLANDS TRAINING

Corps sponsored training in various aspects of wetlands science provides a major information transfer outlet. The following courses are offered annually and are available to Corps personnel and to individuals from other agencies on a space available basis:

Wetlands Executive - a two-day training course focussing on wetlands policy.

Introduction to Wetlands - a one-day regional overview of wetlands resources.

Wetlands Field Techniques - a one-week course stressing wetlands field data collection and presentation.

Wetlands Specialist - an intensive two-week training course in wetlands ecology.

Wetlands Soils and Hydrology - a one-week advanced training course in wetlands soils and hydrology.

Wetlands Development and Restoration - a four-day course providing field experience in the design and development of wetlands areas.

Table 1. Work Units of the Wetlands Research Program

Priority	Performing Laboratory	Work Unit Title	Objectives
1	WES*	Onsite Determination: Transition Zone Analysis	To develop expedient methods for the onsite identification and delineation of wetlands boundaries using vegetation
2	WES*	Onsite Determination: Field Expedient Soil and Hydrologic Techniques	To develop expedient soils and hydrologic techniques for the onsite identification and delineation of wetlands boundaries
3	WES*	Onsite Determination: Nongrowing Season Techniques	To develop techniques for wetlands identification and delineation during the fall and winter seasons
4	WES*	Onsite Determination: Flood Tolerance Indices	To document and evaluate plant tolerance to inundated and/or saturated soil conditions
5	WES*	Functional Values: Preliminary Assessment and Measurement Methodology	To identify and develop qualitative methods for the identification and assessment of wetlands values
6	CREEL	Restoration: Restoration of Wetlands in Permafrost Regions	To develop and field test techniques for the restoration of permafrost wetlands disturbed by permitted or construction activities
7	WES	Restoration: Restoration of Freshwater Wetlands in Interior Regions	To develop and field test techniques for restoration of freshwater wetlands disturbed by permitted or construction activities in interior areas

Table 2. Publications of the Wetlands Research Program

- Batten, A. R. and D. F. Murray. 1981. A Literature Survey on the Wetland Vegetation of Alaska. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Beck, R., M. Lindquist, W. Zuchowski, R. Hooper, R. Lyons, M. H. Sackett, and J. Burk. 1982. Transition Zone Studies in the Connecticut River Basin. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Braswell, J. H., R. Hart, R. J. Cooper, and B. F. Vaughn, Jr. 1981. Delineation of Wetland Boundaries Using Vegetation Within the Altamaha River Basin of Georgia. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Environmental Laboratory. 1981. Preliminary Guide to Wetlands of the Interior United States. Technical Report Y-78-6. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Environmental Laboratory. 1978. Preliminary Guide to Wetlands of the Gulf Coastal Plain. Technical Report Y-78-5. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Environmental Laboratory. 1978. Preliminary Guide to Wetlands of Peninsular Florida. Technical Report Y-78-2. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Environmental Laboratory. 1978. Preliminary Guide to Wetlands of Puerto Rico. Technical Report Y-78-3. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Environmental Laboratory. 1978. Preliminary Guide to Wetlands of the West Coast States. Technical Report Y-78-4. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Fletcher, S. 1982. Evaluation of Methods for Sampling Vegetation and Delineating Wetland Transition Zones in Southern Louisiana. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Hart, R. 1982. Evaluation of Methods for Sampling Vegetation and Delineating Wetland Transition Zones in Coastal West Central Florida. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.

- Huffman, R. T. 1980. The Relation of Flood Timing and Duration to Variation in Bottomland Hardwood Community Structure in the Ouchita River Basin of Southeastern Arkansas. Miscellaneous Paper E-80-4. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Huffman, R. T. 1981a. Multiple-Parameter Approach to the Field Identification and Delineation of Aquatic and Wetland Ecosystems. Report 1 - Technical Standards. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Huffman, R. T. 1981b. Corps Wetlands Research Program. National Wetlands Newsletter 3(3): 4-5.
- Huffman, R. T. and G. E. Tucker. 1981. Preliminary Guide to the Wetlands of Alaska (In Press). Technical Report Y-78-9. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Huffman, R. T., G. E. Tucker, J. W. Wooten, C. V. Klimas, M. W. Freel, S. W. Forsythe, and J. S. Wilson. 1981. Preliminary Guide to the Wetlands of the North Atlantic United States (In Press). Technical Report Y-78-8. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Huffman, R. T., G. E. Tucker, J. W. Wooten, C. V. Klimas, M. W. Freel, S. W. Forsythe, and J. S. Wilson. 1981. Preliminary Guide to the Wetlands of the South Atlantic United States (In Press). Technical Report Y-78-7. US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Johnson, W. C., R. A. Mayes, and T. L. Shank. 1981. Use of Vegetation in Delineating Wetland Borders in the Upper Missouri River Basin of the North-Central United States. Technical Report (In Review). US Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Lonard, R. L., E. J. Clairain, Jr., R. T. Huffman, J. W. Hardy, L. D. Brown, P. E. Ballard, and J. E. Watts. 1981. Analysis of Methodologies Used for the Assessment of Wetlands Values. Technical Report prepared for US Water Resources Council, Washington, D. C.