

ENVIRONMENTAL ASSESSMENT AND  
FINDING OF NO SIGNIFICANT IMPACT  
FOR THE CARIBBEAN REGIONAL SUPPLEMENT  
TO THE 1987 WETLAND DELINEATION MANUAL

Purpose and Need

The purpose and need for this supplement to the 1987 Manual is to use the best available scientific and technical information for improving precision in delineating upland/wetland boundaries in the Caribbean for purposes of Section 404 of the Clean Water Act and provide a procedure for continual future updates as more data are gathered and analyzed.

Background

The U.S. Army Corps of Engineers (Corps) Wetland Delineation Manual was published in 1987 (Environmental Laboratory, 1987) and identified a three-parameter approach to delineating wetlands – hydric soils, wetland hydrology and hydrophytic plants. Use of this manual for wetland delineation by Corps Districts has been mandatory since 1991.

Since the manual was first published, the Corps proposes updating the 1988 National Plant List and the Natural Resources Conservation Service (NRCS) has published newer versions of the “Hydric Soils of the United States”. In addition, wetland science has advanced the understanding of the processes (e.g., biochemical) in these systems.

In 1993, the U.S. Congress requested that the Environmental Protection Agency (EPA) ask the National Academy of Sciences, National Research Council (NRC) to create a committee to study the scientific basis for the characterization of wetlands. The committee was asked to review and evaluate the consequences of alternative methods for wetland delineation and to summarize the scientific understanding of wetland functions (National Research Council, 1995).

One of the recommendations of this committee was to develop regional supplements to the 1987 Manual and that the regions should be defined on the basis of physiography, climate, vegetation and prevailing land use and should be used by all agencies for wetland characteristics.

The Corps of Engineers Research and Development Center (ERDC) was asked to identify and discuss the technical issues relevant to regionalization of the manual (Wakeley, 2002). The Corps, as the lead Federal agency and author of the 1987 Manual, invited the other three Federal agencies that assess wetlands (EPA, NRCS and FWS) to participate in the development of regional supplements, as recommended by the NRC. A National Advisory Team consisting of representatives of all four Federal agencies was created to oversee the regional supplements to provide quality control, consistency on national issues and decisions regarding the timing and defining of “regions”. This regional supplement was developed by a Regional Working Group consisting of experts from Federal/State/local agencies and academia. The availability of the draft supplement was announced through the Corps public notice process for public comment and field-testing, and underwent an independent peer review as discussed below. When finalized, the interim supplement will be implemented with additional field-testing for one year before a final version of the supplement is published by ERDC.

This document discusses the factors considered by the Corps during the development process for the Caribbean Regional Supplement. This Environmental Assessment/Finding of No

Significant Impact contains: (1) a discussion of the environmental consequences necessary to comply with the National Environmental Policy Act, and (2) creation of an independent peer review, their report and the Corps response to their comments as required by the Office of Management and Budget (2004).

### Alternatives

We considered three alternative methods with respect to the 1987 Manual. The No Action Alternative would result in the continued use of the 1987 Manual without scientific or technical changes. The preferred alternative would be to develop regional supplements that identify a regionally tailored list of indicators appropriate for that ecological region, include more helpful local photographs and descriptions and more detailed guidance on problem areas. The third alternative considered was to update and republish the 1987 Manual.

### Affected Environment

This supplement is applicable to the Caribbean Islands Region, which consists of the Commonwealth of Puerto Rico and the United States Virgin Islands. Puerto Rico and the U.S. Virgin Islands lie at the boundary between the Greater and Lesser Antilles at the northern edge of the Caribbean Sea, approximately 1,280 miles (2,000 km) from the United States mainland. The islands are the exposed tops of a partly submerged mountain range. The Commonwealth of Puerto Rico contains approximately 3,515 square miles (9,100 km<sup>2</sup>) of land area, including the islands of Puerto Rico, Vieques, Culebra, Mona, and associated islands. The U.S. Virgin Islands consist of approximately 135 square miles (350 km<sup>2</sup>) of land, including St. Thomas, St. John, St. Croix, and many smaller islands. The Island of Puerto Rico is the largest in the region and has the greatest topographic relief. The east-west trending Cordillera Central forms the backbone of the island and rises to a maximum elevation of 4,389 ft (1,338 m) (Bailey 1995).

The region has a subtropical climate with average annual temperatures ranging from 70°F (21 °C) in the humid mountains to 79 °F (26 °C) on the semiarid coastal plain (Bailey 1995, USDA Natural Resources Conservation Service 2006). The region is frost-free and the growing season is year-round. Rainfall, however, is seasonal and is affected by altitude and exposure. The wettest months are during the hurricane season from August to November. December through March are the driest months. April and May are wetter again but rainfall declines through the summer. The islands lie in the trade winds, which move across the islands from a direction slightly north of east. Average annual rainfall in the Virgin Islands ranges from 37 to 45 in. (940 to 1,145 mm). In Puerto Rico, the windward northern side of the island receives 45 to 60 in. (1,145 to 1,525 mm) of rain per year on the coastal plain and generally 60 to 90 in. (1,525 to 2,285 mm) in the uplands. However, the rainforest area of the Sierra de Luquillo in northeastern Puerto Rico averages 120 to 200 in. (3,050 to 5,080 mm) of rain per year. On the semi-arid southern side of the island, in the rain shadow of the central mountains, annual rainfall on the coastal plain ranges from 10 to 45 in. (255 to 1,145 mm) (USDA Natural Resources Conservation Service 2006).

### Environmental Consequences

The No Action alternative would not achieve one of the goals of the Corps, which is to use the best scientific/technical information available in the Clean Water Act Section 404 program or the purpose and need of this project. The No Action alternative would result in continued heavy use of the "problem areas" section of the manual without additional science-based guidance.

Although the 1987 Manual is updated to incorporate some other technical information such as use of updated National Plant Lists and the Natural Resources Conservation Service Field Indicators of Hydric Soils, newer information such as alternative procedures for calculating plant dominance may not be used consistently. Use of the 1987 Manual with no changes would result in continued confusion and lack of clarity, predictability, precision and consistency in the region. No changes to wetland delineation methods or boundary lines would occur with this alternative.

The preferred alternative, to develop regional supplements to the 1987 Manual using the best available scientific data, is expected to result in more consistent, science-based upland/wetland boundary determinations by Federal, tribal, State and local government delineators as well as private parties. Region-specific issues such as new hydric soils indicators, if they were developed for specific technical problems, would be included in the appropriate regional supplement. Also, region-specific technical problems such as plant cover of halophytes or morphological adaptations of certain plant species can be described and photographs and guidance will be included in each regional supplement. This results in a more user friendly and region-specific document. Also, if changes in a particular region of the country need to be made, then the entire country does not need to change versions.

Changes to this supplement would be much easier than continuous changes to a national manual. There will be some training requirements for both agency personnel and private companies as this supplement is finalized. A transition period of one year will occur when the interim document is published and additional data will be collected on perceived changes to upland/wetland boundaries based on the new supplement. Additional needed changes will be made prior to publishing a final document. It is not expected that the regional supplement will have the net effect of increasing or decreasing the total amount of wetlands in the Caribbean Region, although site-specific boundary changes may occur. These changes may occur due to more refined plant indicators or the use of new soils or hydrology indicators. The testing period using the interim document will allow for further identification of the types and reasons that changes to wetland boundaries occur, prior to finalization of the document. If significant changes to wetland boundaries of specific types or in specific geographic locations occur, an analysis would be completed to determine the acreage of wetland affected and the indicator(s) responsible for the change. However, all areas must continue to have all three parameters – wetland hydrology, hydric soils and hydrophytic vegetation – in order to be determined to be a wetland that may be regulated under Section 404 of the Clean Water Act.

The third alternative would be to update and republish the 1987 Manual. Some overlap in supplements is expected as they are developed from west to east and common themes may eventually develop, resulting in changes and republication of the 1987 Manual for national issues such as changes to procedures for plant dominance calculations that may be identified. However, without identifying specific technical problems by developing regional supplements, it is difficult to articulate national issues. There would be a difficulty in answering problem area questions across the country without a systematic approach to identifying technical problems and solutions. This alternative would likely take an additional five to six years to identify all of the national technical problems and result in continued difficulty updating a single document.

#### Coordination with Others

A 60-day comment period was announced by public notice by the Jacksonville District of the Corps on July 8, 2008. No public comments were received.

### Independent Peer Review:

The purpose of the Office of Management and Budget Information Quality Guidelines (2004) is to enhance the quality and credibility of the government's scientific information, recognizing that different types of peer review are appropriate for different types of information. A copy may be obtained at [http://www.whitehouse.gov/omb/inforeg/peer2004/peer\\_bulletin.pdf](http://www.whitehouse.gov/omb/inforeg/peer2004/peer_bulletin.pdf). The Federal agencies were granted broad discretion to weigh the benefits and costs of using a particular peer review mechanism; however, agencies strive to ensure that their peer review practices are characterized by both scientific and process integrity. Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community and involves the review of a draft product for quality by specialists in the field who were not involved in producing the draft. The peer review report is an evaluation or critique that is used by the authors of draft information that contains important scientific determinations to improve the product. The selection of participants in a peer review is based on expertise, with due consideration of independence and conflict of interest. In some cases, reviewers might recommend major changes to the draft, such as refinement of hypotheses, modifications of data collection or analysis methods, or alternative conclusions. However, the peer review does not always lead to specific modifications in the draft product. In some cases, the authors do not concur with changes suggested by one or more reviewers.

A peer review is considered completed once the agency considers and addresses the reviewers' comments and incorporates them where relevant and valid. In cases where there is a public panel, the agency publishes the peer review report(s) and the agency's response to the peer review comments. Agencies prepare a written response to the peer review report explaining: the agency's agreement or disagreement, the actions the agency has undertaken or will undertake in response to the report, and (if applicable) the reasons the agency believes those actions satisfy any key concerns or recommendations in the report. A copy of the peer review report is available for review on the Regulatory HQ website at [http://www.usace.army.mil/CECW/Documents/cecwo/reg/caribbean\\_peerrev\\_resp.pdf](http://www.usace.army.mil/CECW/Documents/cecwo/reg/caribbean_peerrev_resp.pdf).

### Finding of No Significant Impact:

In compliance with the National Environmental Policy Act (NEPA) and its implementing regulations at 40 CFR Parts 1500 – 1508, an Environmental Assessment has been prepared for this rule. The Corps prepares appropriate NEPA documentation, including Environmental Impact Statements when required, for all permit decisions. The environmental review process undertaken for this rule has led me to conclude that the publication of this supplement will not have a significant effect on the quality of the human environment, and therefore an Environmental Impact Statement is not required by §102(2)(C) of NEPA or its implementing regulations. A copy of this Environmental Assessment with attachments is available from the U.S. Army Corps of Engineers, HQUSACE, Operations and Regulatory Community of Practice, 441 G Street, NW, Washington, DC 20314-1000 and on the Regulatory Homepage at [http://www.usace.army.mil/CECW/Pages/cecwo\\_reg.aspx](http://www.usace.army.mil/CECW/Pages/cecwo_reg.aspx).

  
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