



ECOLOGICAL RESEARCH PROGRAM

Research Tests New Approach to Assessing Wetlands

Issue:

Environmental managers require state-of-the-art assessment tools to monitor and protect America's natural areas. A new three-tiered approach for conducting wetlands assessment is being tested by the Ecological Research Program in the U.S. Environmental Protection Agency's Office of Research and Development. The 1-2-3 Approach, as it is known, combines a variety of methods to collect reliable and useful information that can be used to characterize wetland condition, function, and/or services in a cost-effective and timely fashion.

Science Objective:

The 1-2-3 Approach is designed to meet a variety of monitoring requirements. The objectives of the research were to investigate and evaluate various ways to apply the Approach and to generate real-life applications.

Level 1: This type of assessment is conducted at the landscape scale. It uses readily available digital information such as maps and digital, aerial photography to produce a basic assessment of the wetland resource.

Level 2: This type of assessment uses rapid methods that produce more information than Level 1 and requires a modest field effort. These methods are used to evaluate aspects of the ecological features of the wetlands – the soil, water, and biota – and to assess impacts of human activities that stress the local ecology.

Level 3: This type of assessment employs intensive methods that involve collecting data on the biological, physical, chemical, and morphological attributes of a site.

Application and Impact:

The 1-2-3 Approach was used to determine the health of wetlands in two valuable watersheds, the

Nanticoke Watershed in Maryland and Delaware, and the Upper Juniata Watershed in south-central Pennsylvania. These efforts provided EPA with valuable information on the usefulness of the 1-2-3 Approach, and demonstrated how it can support and evaluate watershed management decisions, leading to healthier wetlands and watersheds.

EPA researchers are using the Approach with indicators of condition, function, and services at a variety of scales in collaboration with state, local, tribal, and federal partners. The work is leading to a National Wetland Survey, scheduled by the Agency for 2011.

References:

Special Feature: Monitoring Wetlands at the Watershed Scale. 2007. *Wetlands* 27(3): 410-560.

Kentula, M.E. 2007. Foreword. *Monitoring Wetlands at the Watershed Scale*. *Wetlands* 27(3): 412-413.

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