

**Wetland Function Assessment Project
Update No. 2
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Introduction

The Washington State Wetland Function Assessment Project is a statewide effort to develop relatively rapid, scientifically valid methods of assessing how well wetlands perform functions such as improving water quality, reducing floods, and providing wildlife habitat. The methods will be developed for different wetland types in Washington State. The project fills a need for function assessment methods that numerically describe how well a function is performed and that are specifically designed for the wetlands types of the Pacific Northwest. The project is funded by the Environmental Protection Agency and coordinated by the Washington Department of Ecology.

Public involvement and technical peer review of methods is critical to the success of this project. Printed updates and World Wide Web documents are published periodically to keep interested parties informed of our progress. Please share this information with others that may be interested. The Washington State Wetland Function Assessment Project has completed a public review of its master plan and is getting underway!

In June, Ecology sent interested parties (including technical experts from around the country) a draft plan for developing methods. We also held workshops in Olympia and Everett (workshops in Ellensburg and Spokane were canceled due to low registration). In addition to workshop participation, we received comments from 36 people out of the 400 who received the draft plan. Comments covered a wide range of technical, policy and process issues. Overall, the comments were supportive, and the majority of concerns dealt with technical issues.

This update summarizes the basic approach described in the master plan. The plan will evolve as it is implemented and tested in the field.

Project Guidance

The project is guided by two technical committees and a policy board. One technical committee oversees the scientific aspects of the project as a whole; another addresses technical issues specific to eastern Washington. Committee members are wetlands assessment experts from local, state, and federal agencies, and the private sector. The Interagency Wetlands Review Board addresses policy issues. Interdisciplinary teams of regional experts (called Assessment Teams) will craft the methods, which technical experts and the general public will review.

Hydrogeomorphic Approach

Washington State has decided to base the project on the national Hydrogeomorphic (HGM) approach, which is designed to produce regional methods for different wetland types.

This approach has many benefits: it is flexible enough to meet Washington's needs, it allows us to take advantage of useful elements of existing methods, and federal agencies are supporting its development.

The HGM approach has three major components:

- 1) a classification system based on landscape position and water regime,
- 2) technical assumptions on which assessments of performance of functions are based, and
- 3) procedural steps used to develop methods.

Classification under HGM

The "hydrogeomorphic" part of the HGM approach is about classifying wetlands based on characteristics such as topographic position in the landscape, source of water, and direction of water movement within the wetland.

Wetlands within these classes are expected to perform similar functions.

The major classes are:

- Riverine
- Depressional
- Slope
- Flats
- Estuarine fringe
- Lacustrine (lake) fringe

Subclasses for each of these classes are defined regionally. Washington has decided to focus first on developing methods for subclasses of riverine and depressional wetlands in the lowland areas West of the Cascades.

Key Assumptions

Like all assessment methods, HGM is based on scientific assumptions. Key assumptions in Washington's plan are:

A) Using indicators instead of direct measurements of functions. Indicators are environmental characteristics that are strongly correlated to a specific function. For example, one indicator of habitat for birds may be nesting areas expressed as a percent of cover of reeds. A direct measure would be the actual number of nests present. Indicators will be represented by scaled numbers between 0 and 1 (e.g., 0, 0.1, 0.5, etc.) instead of direct field measurements.

B) Using mechanistic models. "Models" are the specific ways to take the raw data on indicators and turn them into a final score. The Technical Committee has agreed that simple mathematical

expressions can be used to define the relationship between the indicators and the level at which a function is being performed.

C) Using reference wetlands. "Reference wetlands" are a set of wetlands (at least 20 sites for each subclass) that encompass the known variations in performance of functions within a subclass. They include those that don't perform the function at all (would receive a score of zero), as well as the "cream of the crop" wetlands (would receive a score of 1). These wetlands will be used to "calibrate" the models and develop the appropriate scaling and weighting of the indicators.

Process for Developing Methods

Washington's approach to developing methods depends on interdisciplinary Assessment Teams and review by other technical experts and the public. Assessment Teams are groups of regional experts that craft methods specific to each regional subclass. Using professional knowledge from the region is key to the success of the project.

Assessment teams will decide which functions to assess for a particular subclass, drawing from a "master list" of functions (see Table 1, page 5) developed by the Technical Committee.

The process for developing methods is summarized below:

1. Assessment Teams develop rough drafts of methods for:
 - riverine wetlands, and
 - depressional wetlands.
2. Technical experts review draft methods, through written comments and workshops.
3. Volunteers and assessment teams collect field data at reference wetlands.
4. Assessment Teams calibrate methods to reference wetlands. This is the step where numbers are added to each indicator - numbers that reflect the scaling and weighting of the indicators. Methods revised in response to field application.
5. Broad public review of calibrated draft methods.
6. Wetland professionals test methods in the field.
7. Final draft methods completed and published.
8. Ecology sponsors training for practitioners.

With additional funds, entire process will be repeated for

- slope wetlands
 - estuarine wetlands
 - lake wetlands
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Products and Timeline

We plan to create methods for 4-6 wetland types (subclasses) with computer programs for each that process data and calculate results, along with a report that documents their development. Technical Assessment Teams in Western Washington are now working on developing draft models for Riverine and Depressional wetlands subclasses, and will continue through December 1997.

The methods for Eastern Washington will be offset by about six months, running from March 1997 to April 1998. These draft methods will be reviewed by technical experts and critiqued in technical workshops planned for Spring 1997.

Next Major Public Review

Following revisions, the draft methods will be "calibrated" in the field and distributed for public review and comment. We expect this public review to occur in late summer 1997.

The draft methods will be revised and then tested by professional wetland experts, including wetland consultants, and the wetland staff of local governments, agencies, and interest groups who want to participate. We are targeting early fall 1997 for the testing phase.

Please let us know if you would like to review draft methods or want to participate in testing.

For More Information

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Table 1

Master list of wetland functions for riverine and depressional wetlands

Functions associated with *water quality improvement*

- Removal of nutrient
- Removal of metals and toxic organics
- Removal of sediment

Functions associated with *habitat*

- Habitat for plant communities
- Invertebrate species habitat
- Fish habitat
- Mammal habitat
- Bird habitat
- Reptile and amphibian habitat
- General habitat
- Primary production

Functions associated with *water quantity (hydrology)*

- Reduction in peak flows
- Decrease in downstream erosion
- Maintenance of low flows to streams during dry season
- Ground water and aquifer recharge