LLWW
A Hydrogeomorphic Approach to Wetland Classification

GeoSpatialServices

Saint Mary's University OF MINNESOTA

Association of State Wetland Managers

December, 2020

LLWW

Based on Tiner (2011)

*similar to older hydrogeomorphic classification (Brinson 1993)

Landscape Position - relationship between a wetland and an adjacent waterbody or not

Landform - shape or physical form (island, basin, floodplain, etc.)

Water Flow Path - directional flow of water (outflow, inflow, isolated, etc.)

Water Body Type – lake, pond, river, stream

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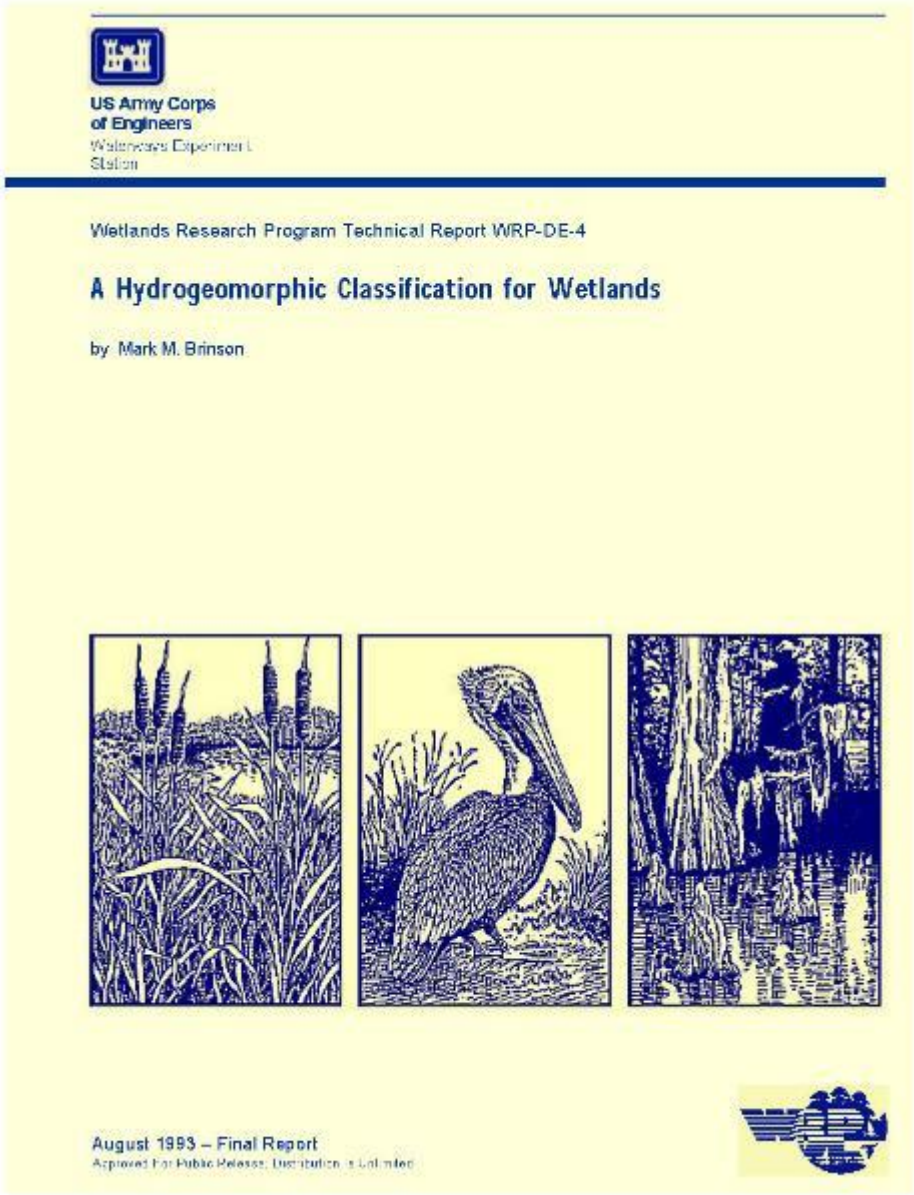

"This report outlines a classification of wetlands based on the wetland hydrogeomorphic properties of geomorphic setting, water source, and hydrodynamics. Indicators of function are discussed as derivatives of the three basic properties, along with the ecological significance of each of the properties."

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Watershed-based Wetland Characterization for
Delaware's Nanticoke River Watershed:
A Preliminary Assessment Report

by

R.W. Tiner, H.C. Bergquist, J.Q. Swords, and B.J. McClain

U.S. Fish and Wildlife Service
Northeast Region
National Wetlands Inventory Program
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Hadley, MA 01035

Prepared for the
Delaware Department of Natural Resources and Environmental Control
Division of Soil and Water Conservation
89 Kings Highway
Dover, DE 19901

September 2001

"The first step in the project was updating the NWI maps and digital database, since these data would be used for the analysis of wetland functions… Once a more complete inventory of wetlands was created, the NWI database was further expanded by adding hydrogeomorphic-type information to each mapped wetland."

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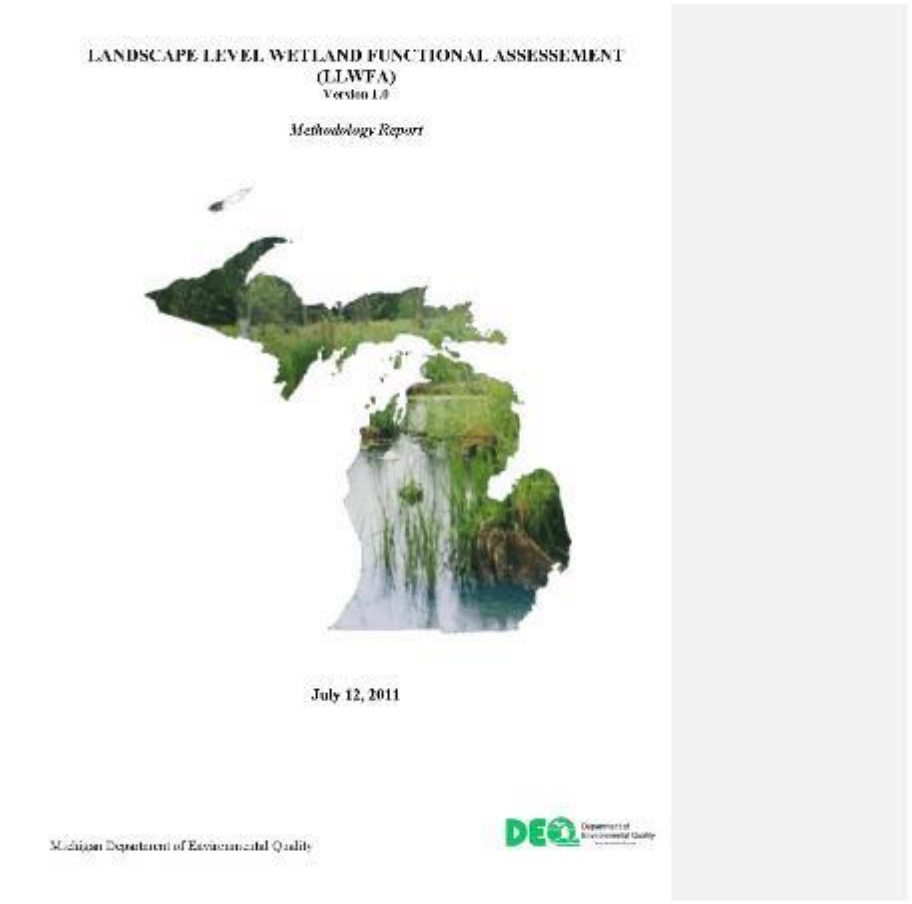

"In the mid-1990s, a set of HGM-type descriptors were developed to describe a wetland's landscape position, landform, and water flow path. These projects were watershed characterizations that included a preliminary assessment of wetland functions as a main component or the prime component of the study.."

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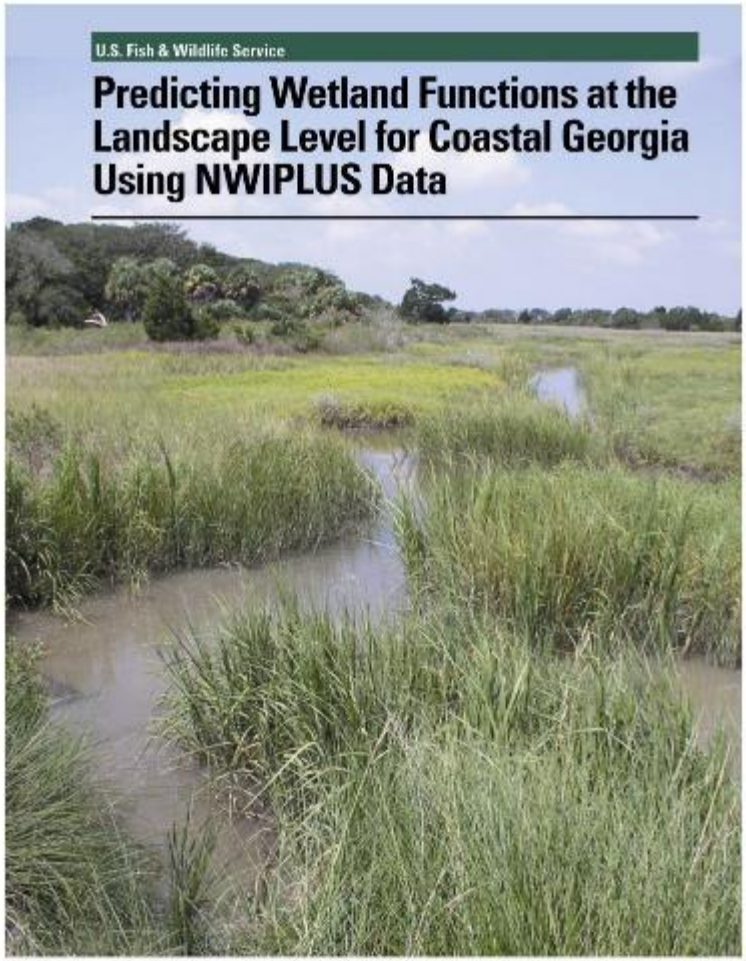

"The expanded NWI database is called NWIPlus because it significantly increases the amount of information collected for mapped wetlands (Tiner 2010). These data allow for improved characterization of wetlands across the landscape and make it possible to predict wetland functions at the landscape, watershed, or regional

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New Mexico Environment Department
Surface Water Quality Bureau
Wetlands Program

Mapping and Classification of Wetlands in the Jemez Mountains, New Mexico.

"Wetlands were concurrently mapped using the Federal Geographic Data Committee (FGDC) Wetlands Mapping Standard and the Landscape Position, Landform , Water Flow Path, and Waterbody Type (LLWW) classification. In order to add value to the habitat data created through this project, wetlands were also characterized by hydrogeomorphic (HGM) descriptors (Brinson, 1993) and correlated to a variety of wetland functions.."

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LLWW Interpretation and Coding

During NWI mapping also consider and add LLWW codes:

Example (next slides, highlighted polygon):

NWI: **PSS5C**

Paulustrine, scrub shrub - dead, seasonally flooded)

LLWW: **LS1BATHhw**

Lotic Stream low gradient, Basin, Through-flow, headwaters

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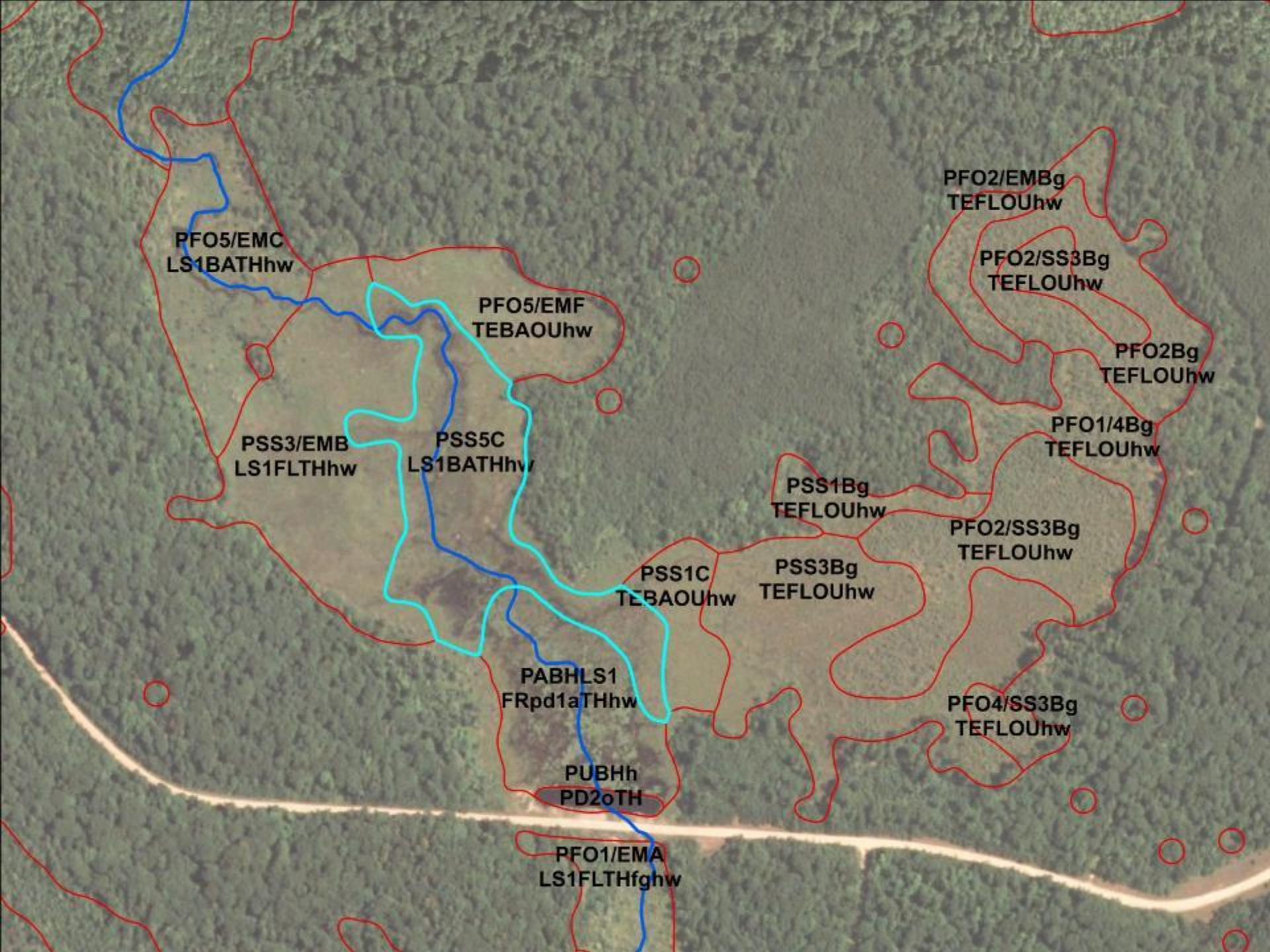
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