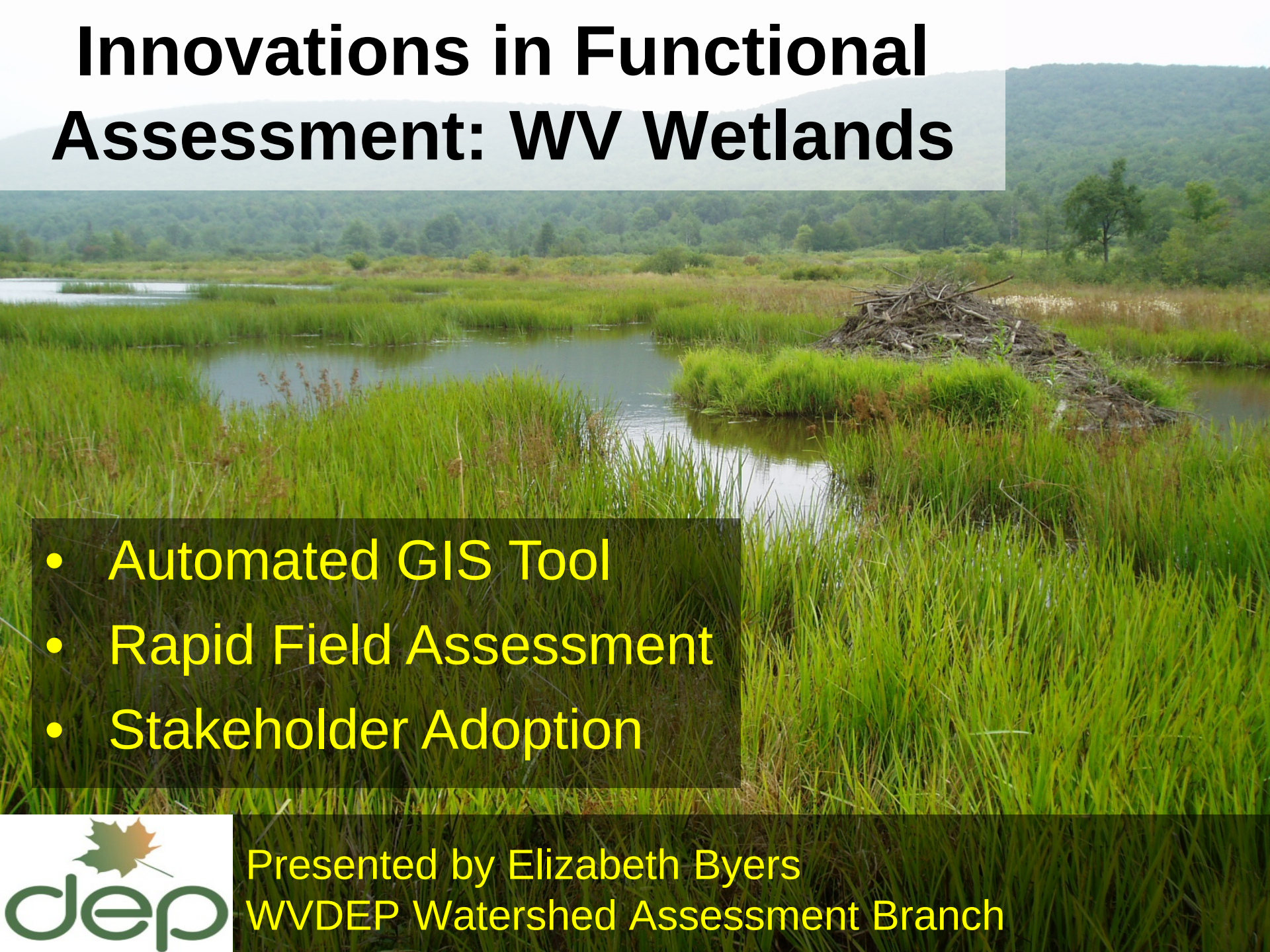
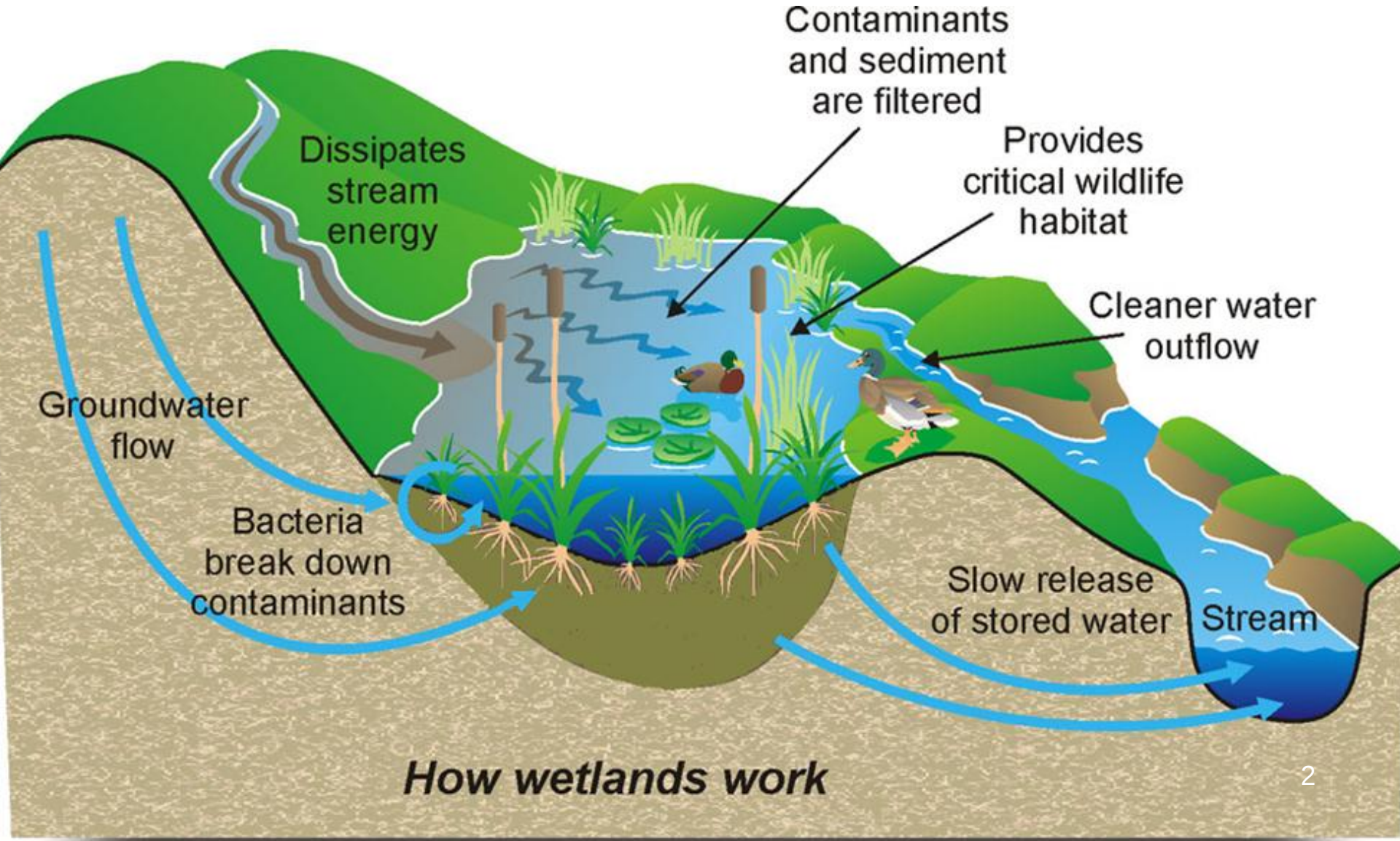
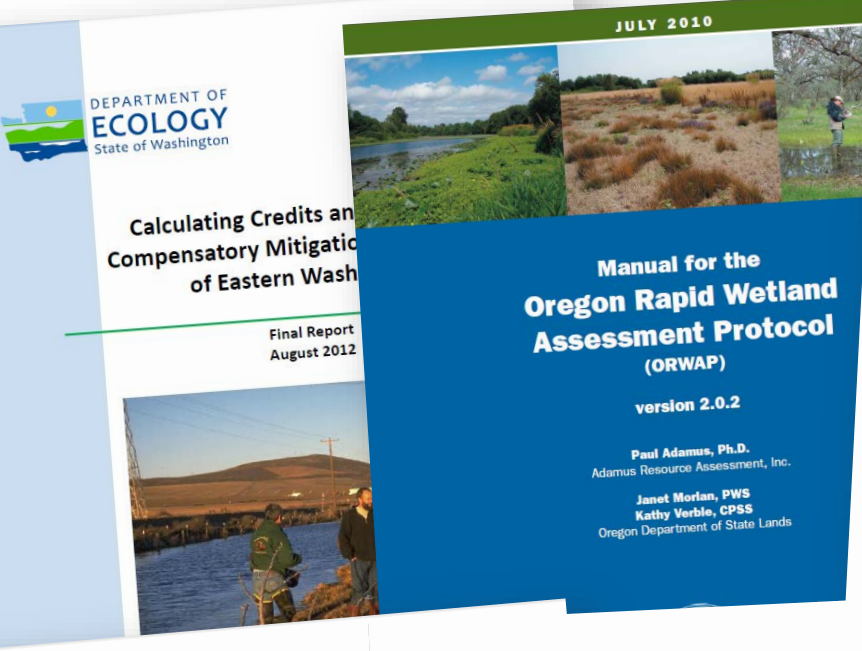
Innovations in Functional Assessment: WV Wetlands



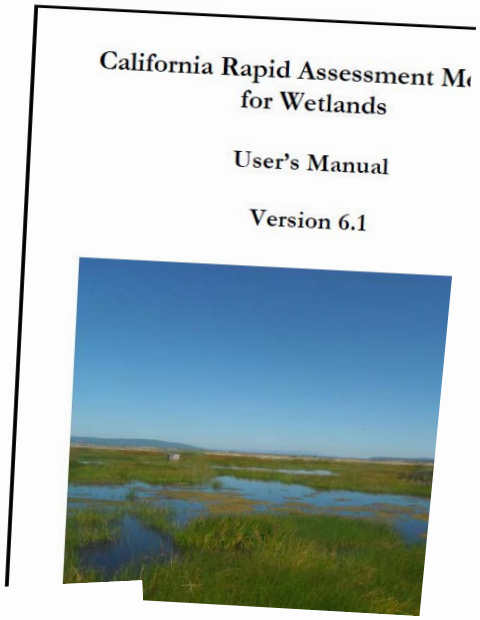
- Automated GIS Tool
- Rapid Field Assessment
- Stakeholder Adoption

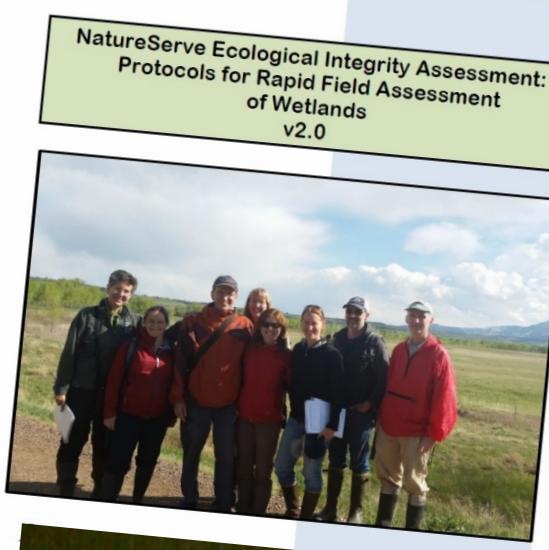
Presented by Elizabeth Byers
WVDEP Watershed Assessment Branch

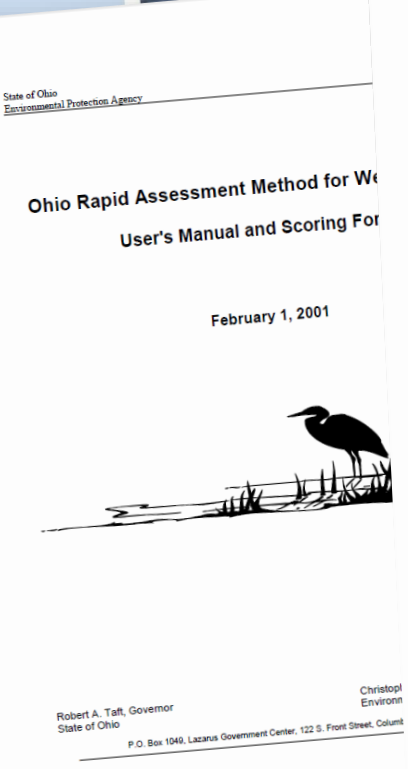

Contaminants and sediment are filtered
Dissipates stream energy
Provides critical wildlife habitat
Cleaner water outflow
Groundwater flow
Bacteria break down contaminants
Slow release of stored water
Stream
How wetlands work


DEPARTMENT OF
ECOLOGY
State of Washington
Calculating Credits an
Compensatory Mitigatio
of Eastern Wash
Final Report
August 2012

JULY 2010
Manual for the
Oregon Rapid Wetland
Assessment Protocol
(ORWAP)
version 2.0.2
Paul Adamus, Ph.D.
Adamus Resource Assessment, Inc.
Janet Morlan, PWS
Kathy Verble, CPSS
Oregon Department of State Lands


California Rapid Assessment M
for Wetlands
User's Manual
Version 6.1

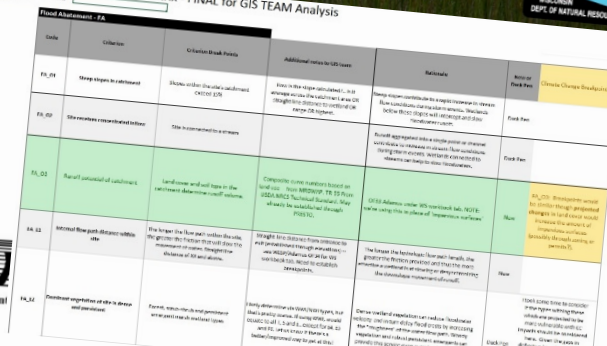

NatureServe Ecological Integrity Assessment:
Protocols for Rapid Field Assessment
of Wetlands
v2.0


State of Ohio
Environmental Protection Agency
Ohio Rapid Assessment Method for We
User's Manual and Scoring For
February 1, 2001
Robert A. Taft, Governor
State of Ohio
Christopl
Environn
P.O. Box 1049, Lazarus Government Center, 122 S. Front Street, Columt


Rapid Floristic Quality Assessm
Manual
Minnesota Pollution Control Agency


Montana Department of Transportation
Montana Wetland Assessment Method
Prepared for:
Montana Department of Transportation
Environmental Services
2701 Prospect Avenue
P.O. Box 201001
Helena, Montana 59620-1001
Prepared by:
PBSJ
801 N. Last Chance Gulch, Suite 101
Helena, Montana 59601-3360
March 2008
Montana Department


The Watershed Approach
A Statewide Decision Support Tool
for Restoring and Protecting Wetland Services
Tom Bernthal, Nick Miller, Matt Matrise,
Joanne Kline, Max Axler, Chris Smith,
John Wagner, Michele Kille
The Nature Conservancy
WISCONSIN
DEPT. OF NATURAL RESO


WAWFA GIS-RAM Matrix - FINAL for GIS TEAM Analysis


Efficacy of Natural Wetlands to Retain Nutrient, S
Biogeochemical Ho
Moments at the
Terrestrial and Aq
Realizing ecosystem services: w
along a gradient of ec
Final Report - Apri
Association of State Wetland
RECOMMENDA
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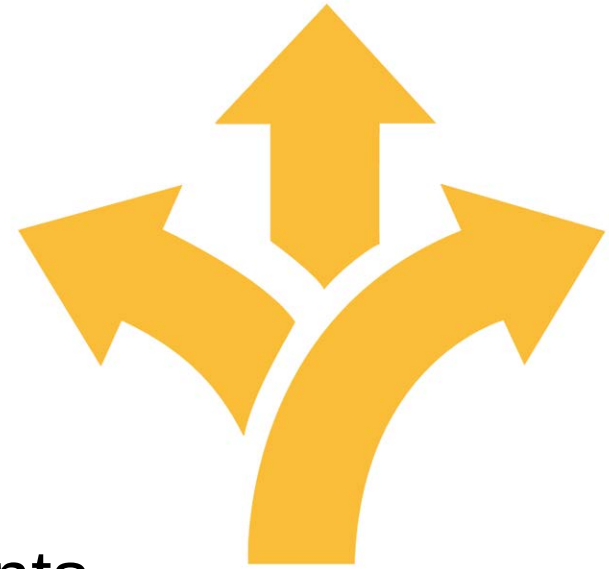
WETLAND ASS
TECHNIC
As previously printed in Wetland News, February 2008, Association of State Wetland Managers, Inc.
Wetland Assessment: Measuring the Quality of the Nation's Wetlands
By Leah Stetson, ASWM
Sediment and Nu
Freshwater Wetl
Water Quality*
Carol A. Johnston, Ph.D.
A unifying approach for
communities a
ERDC/EL TR-10-17
Environmental Laboratory
Wetlands Regulatory As
A Regional G
Hydrogeomo
Assessment
Valleys of E
Hans M. Williams, Ad
and Charles V. Klima
The Use of Wetla
Photograph by Lauren Williams
Compensat
the Clean W
the Feder
State of Ohio
Environmental Protection Agency
Wetland Ecology Group
Division of Surface Water
AN ECOLOGICAL AND FUNCTIONAL ASSESSMENT
OF URBAN WETLANDS IN CENTRAL OHIO
VOLUME 3: A COMPARISON OF THE AMPHIBIAN COMMUNITIES OF URBAN
AND REFERENCE WETLANDS, USING LEVEL 1, 2 AND 3 ASSESMENT TOOLS
Ohio EPA Technical Report WET/2008-1
Ted Strickland, Governor
State of Ohio
Chris Korleski, Director
Environmental Protection Agency
P.O. Box 1049, Lazarus Government Center, 50 West Town Street, Columbus, Ohio 43216-1049

Ecological integrity & wildlife habitat



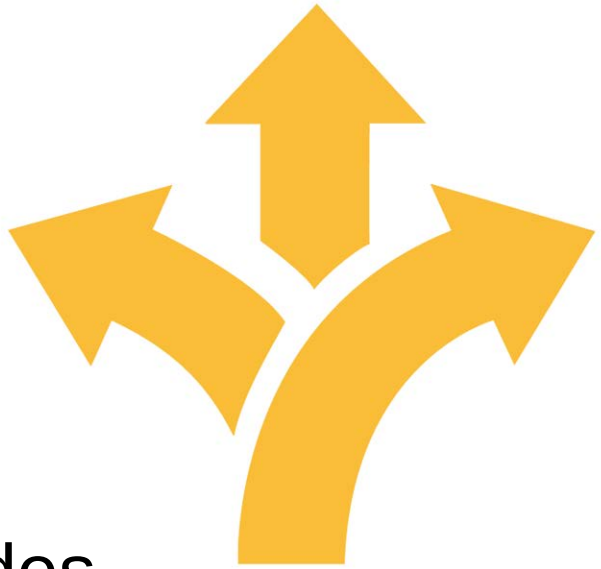
Water quality: sediment, nutrients, pollutants

Flood attenuation

3 composite functions

Wetland has intrinsic potential to provide function

Landscape provides opportunity to perform function



Society has placed value on function

3 lenses

75 metrics in 9 categories

	Intrinsic Potential	Landscape Opportunity	Value to Society
Water Quality	vegetation, soil, hydrology	50 m buffer, contributing watershed	public use, planning
Flood Attenuation	vegetation, soil, hydrology	50 m buffer, contributing watershed	economic risk
Habitat/ Ecological Integrity	vegetation, soil, hydrology	perimeter, 300 m / 1 km buffer, contrib. watershed	investment, public use, access

Roll-up of metrics into stakeholder-requested scores:

- Full function (all metrics)
- Regulatory function
- State lands acquisition
- Condition assessment

62 statewide GIS datasets

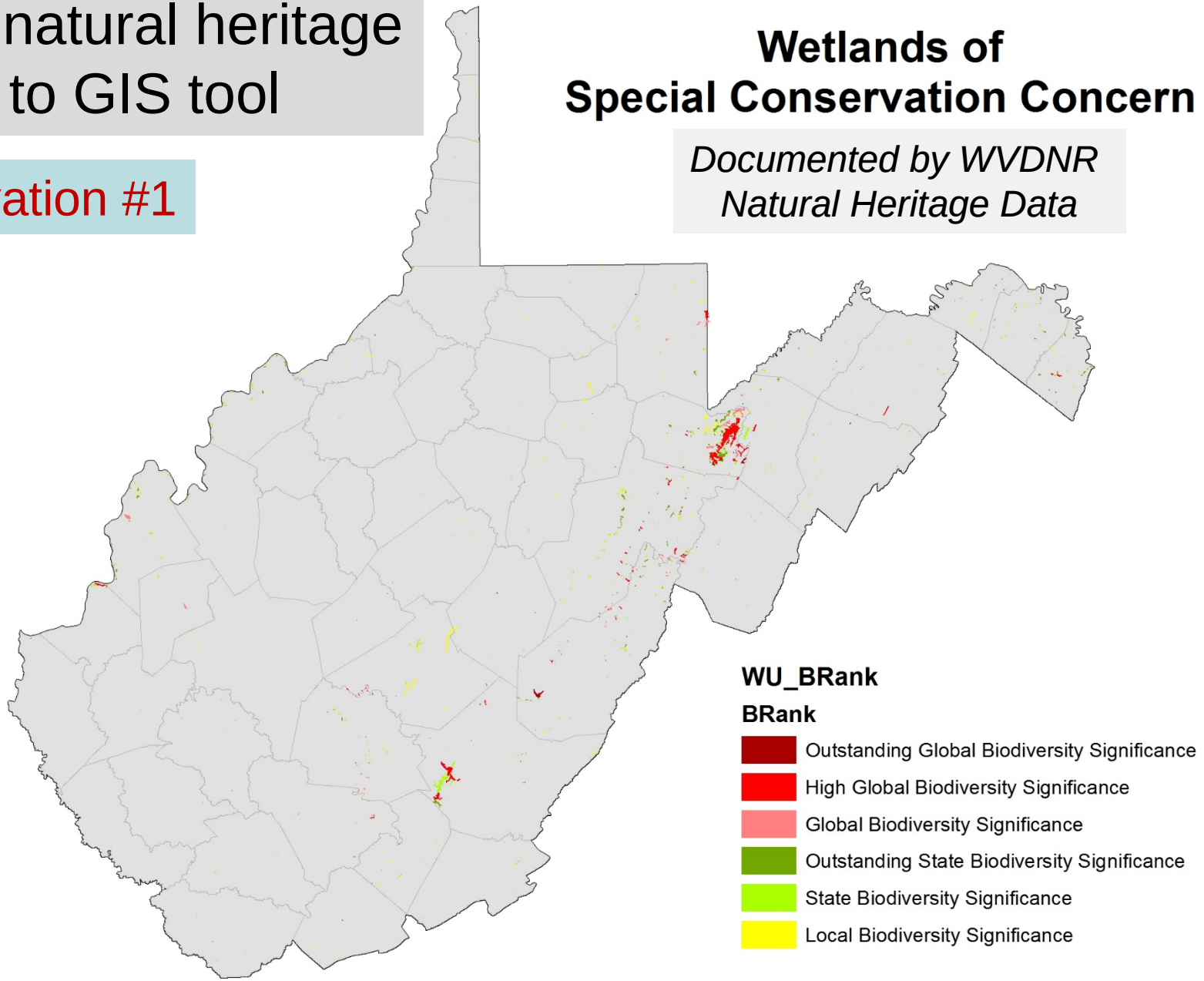
- Biodiversity
- Ecosystems
- Elevation
- Geology
- Hydrology
- Imagery
- Infrastructure
- Jurisdiction
- Landcover
- Landform
- Soils
- Stressors

Link natural heritage data to GIS tool

Innovation #1

Wetlands of Special Conservation Concern

Documented by WVDNR Natural Heritage Data



West Virginia GIS Technical Center

Python-based automation

Innovation #2

Rapid Field Assessment

Level of effort: 2 technicians x half-day

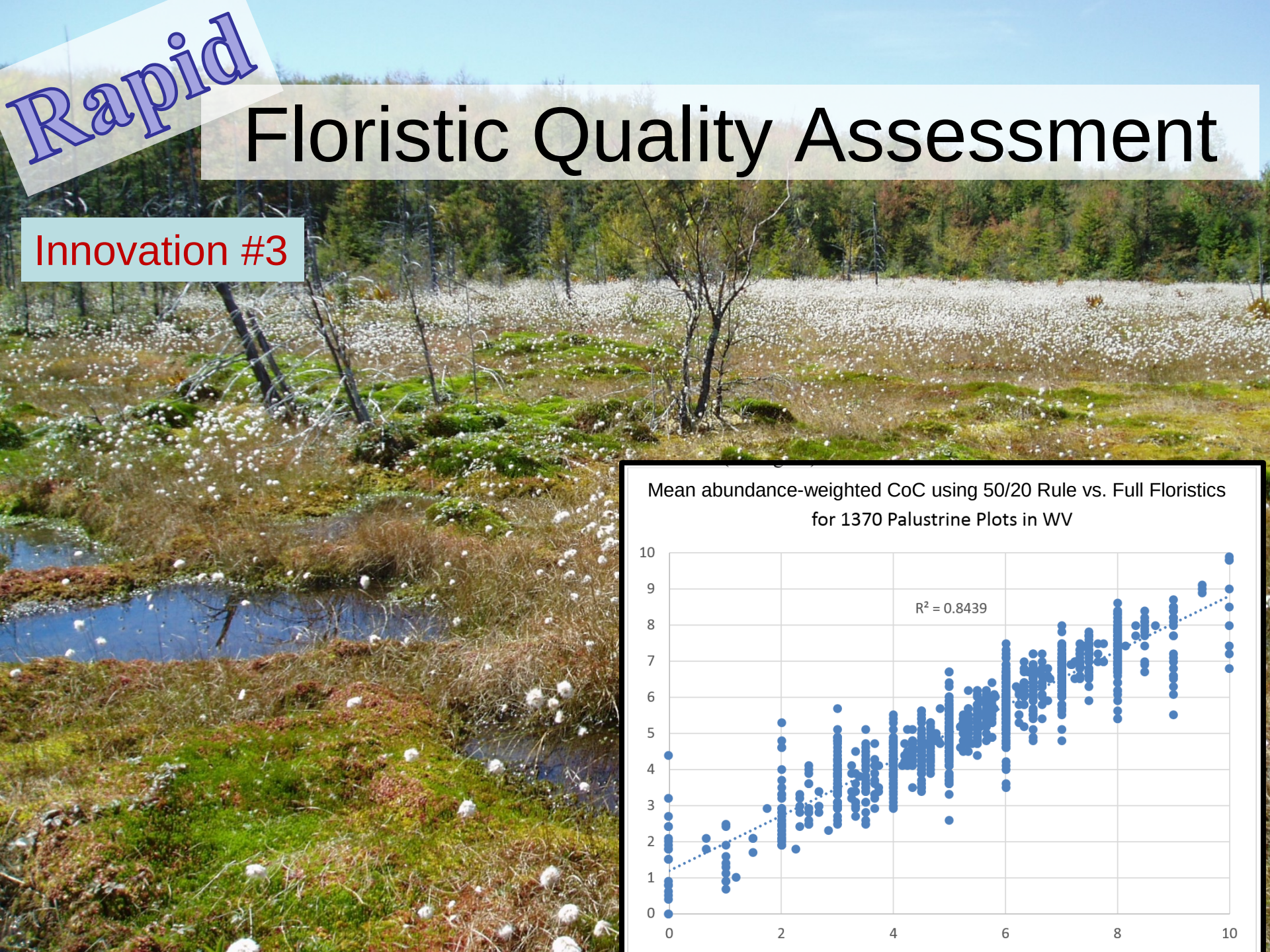
Skill level: wetland delineation

plus 2-day training

- Vegetation, Soils, Hydrology, Buffer, Stressors
- GIS metrics improved

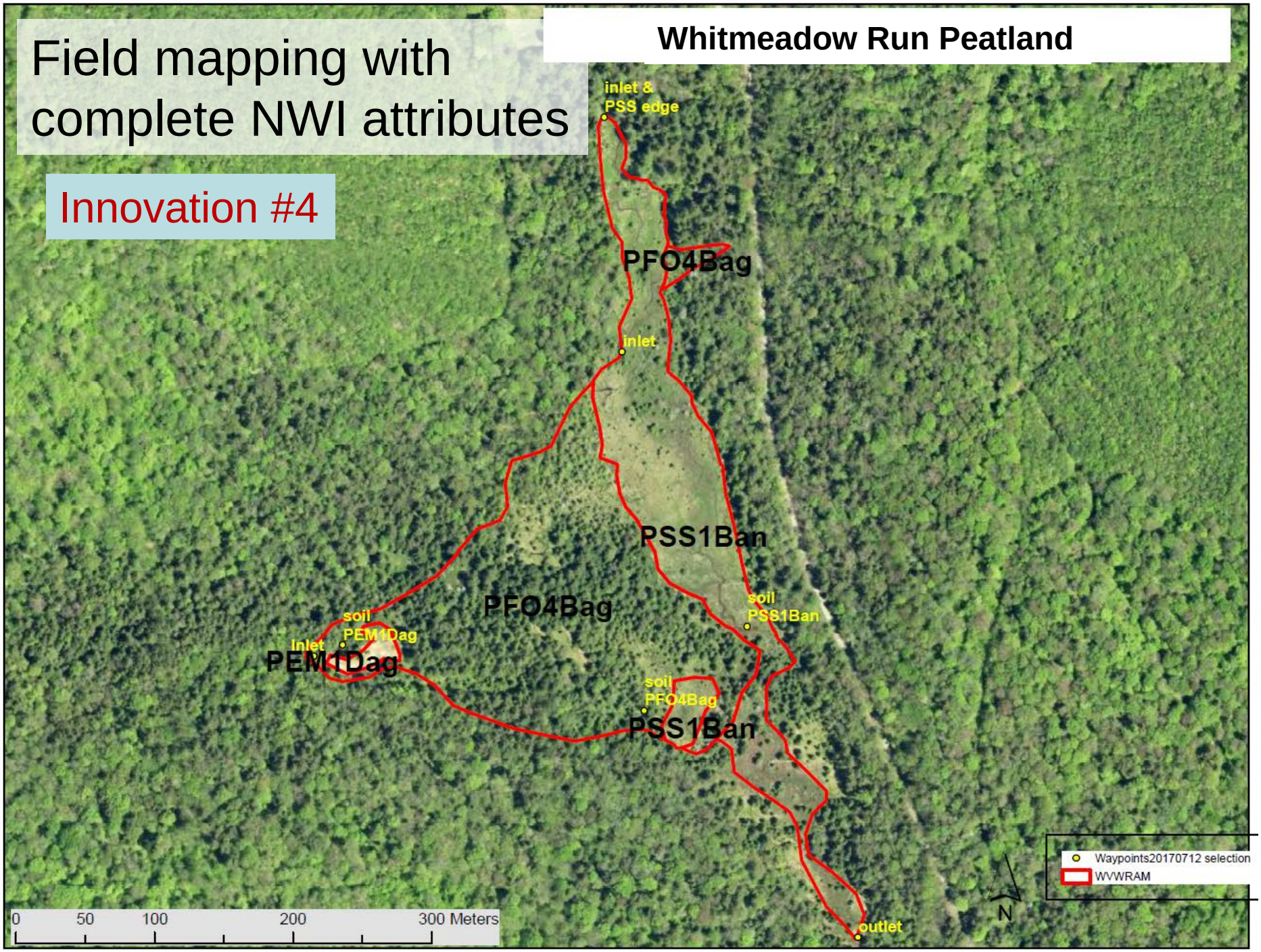
Rapid Floristic Quality Assessment

Innovation #3

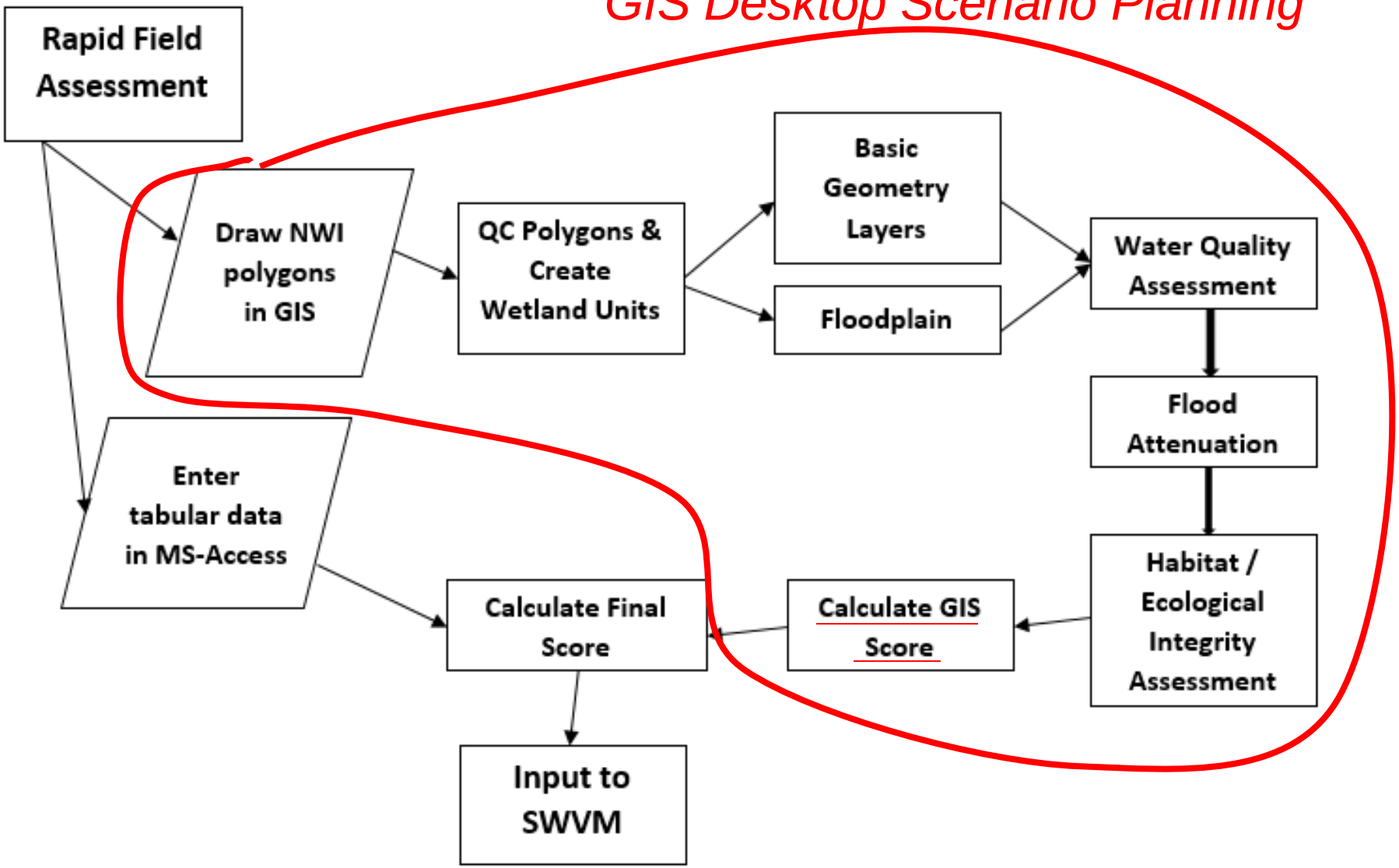


Field mapping with complete NWI attributes

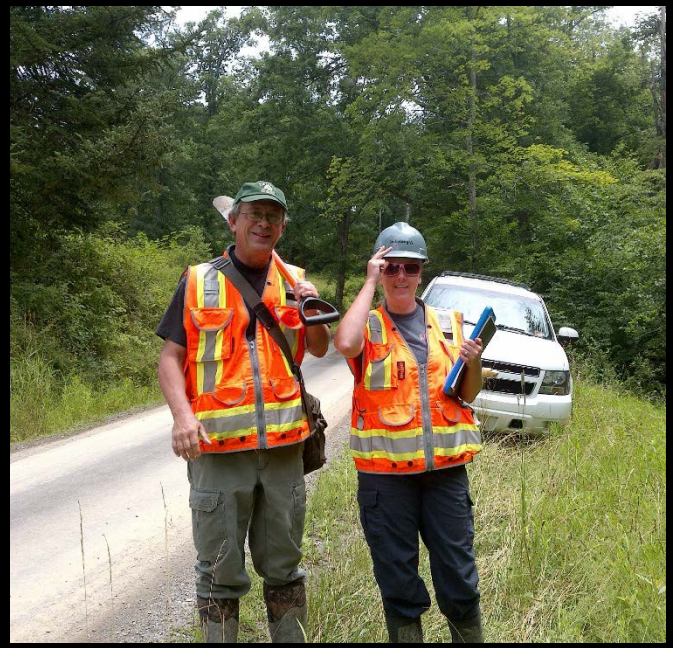
Innovation #4



GIS Desktop Scenario Planning



2017 Field-testing: Experts



2018 Field-testing: Stakeholders

2019 Field Season: Training

September 2019 Regulatory Rollout


Thank you!
Elizabeth.A.Byers@wv.gov