



# Overview of Wetland Mitigation in Ohio

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# Overview of Morning Talks

- Four presentations
  - ◆ Overview Ohio EPA's wetland assessment program development, Ohio's existing wetland rules, and the recommendations of 2001 NAS study
  - ◆ Results of Studies of Natural and Mitigation Wetlands in Ohio 1995-2006
  - ◆ Standardized Mitigation Monitoring and Performance Standards for Ohio: Key Rule Changes and the "Part 6" Approach
  - ◆ Practical Components of the Process: Wetland Fees, Updates of 401 Certification Rules (Chapter -32)

# Ohio Program Chronology

- 1990 – U.S. EPA mandated states include water quality standards for wetlands
- 1990 to 1998 - Used existing rules and laws to develop detailed 401 permitting program
- 1996-1998 – Wetland Water Quality Standards rule development
- May 1998 – Adopted initial wetland water quality standards/antidegradation rule
- 1995-1998: Began exploring and using biological assessment methods
- 1996-1999: Developed and began using draft wetland rapid assessment method in permitting decisions

# Chronology cont.

- 2000-2002: Developed plant and amphibian IBIs
- 2001: Finalized Ohio Rapid Assessment for Wetlands
- 2001: Post-SWANCC isolated wetland statute
- 2001-2002: Mitigation wetland study to develop standardized monitoring/performance requirements
- 2002-2003: Wetland IBIs used as part of mitigation performance in 401 permit conditions
- 2002-2004: Inventory of past mitigation projects

# Chronology cont.

- 2003-2004 - Ecological assessment of Ohio Wetland Mitigation Banks
- 2005 - Pilot watershed-level wetland condition assessment project
- 2005 - Part 6 Report: Standardized Mitigation Monitoring Protocols and Performance Standards
- 2006-2007 - Revisions to Wetland Water Quality Standards rules
- 2006 - Urban wetland study
- 2007 and beyond - Probabilistic assessment of past mitigation projects and expansion of ambient wetland monitoring

# 1998 Wetland Water Quality Standards and Wetland Antidegradation Rule

- 3745-1-50 Definitions
- 3745-1-51 Narrative Water Quality Criteria
- 3745-1-52 Wetland Designated Use
- 3745-1-53 Wetland Chemical Criteria
- 3745-1-54 Wetland Antidegradation
  - ◆ 3 protection categories: Category 1, 2, 3
  - ◆ alternatives analysis
  - ◆ mitigation monitoring, performance, ratios

# Existing Rule Requirements for sampling

- OAC 3745-1-54(B)(2)(a)(ii): “In assigning a wetland category, the director will consider the results of an appropriate wetland evaluation method(s) acceptable to the director, and other information necessary in order to fully assess the wetland’s functions and values”
- OAC 3745-32-05: “The director may impose such terms and conditions as part of a section 401 certification as are appropriate and necessary to ensure compliance with the applicable laws and to ensure adequate protection of water quality.”

# Existing Rule Requirements for Mitigation Monitoring

- Mitigation Monitoring and Performance
  - ◆ OAC 3745-1-54(E)(1)(e): “The director shall require...ecological monitoring...for a period of at least 5 years...[which] may include, but is not limited to, collection of data on hydrologic characteristics, vegetation communities, and soils...and an assessment of the compensatory mitigation using an appropriate wetland evaluation method acceptable to the director.”

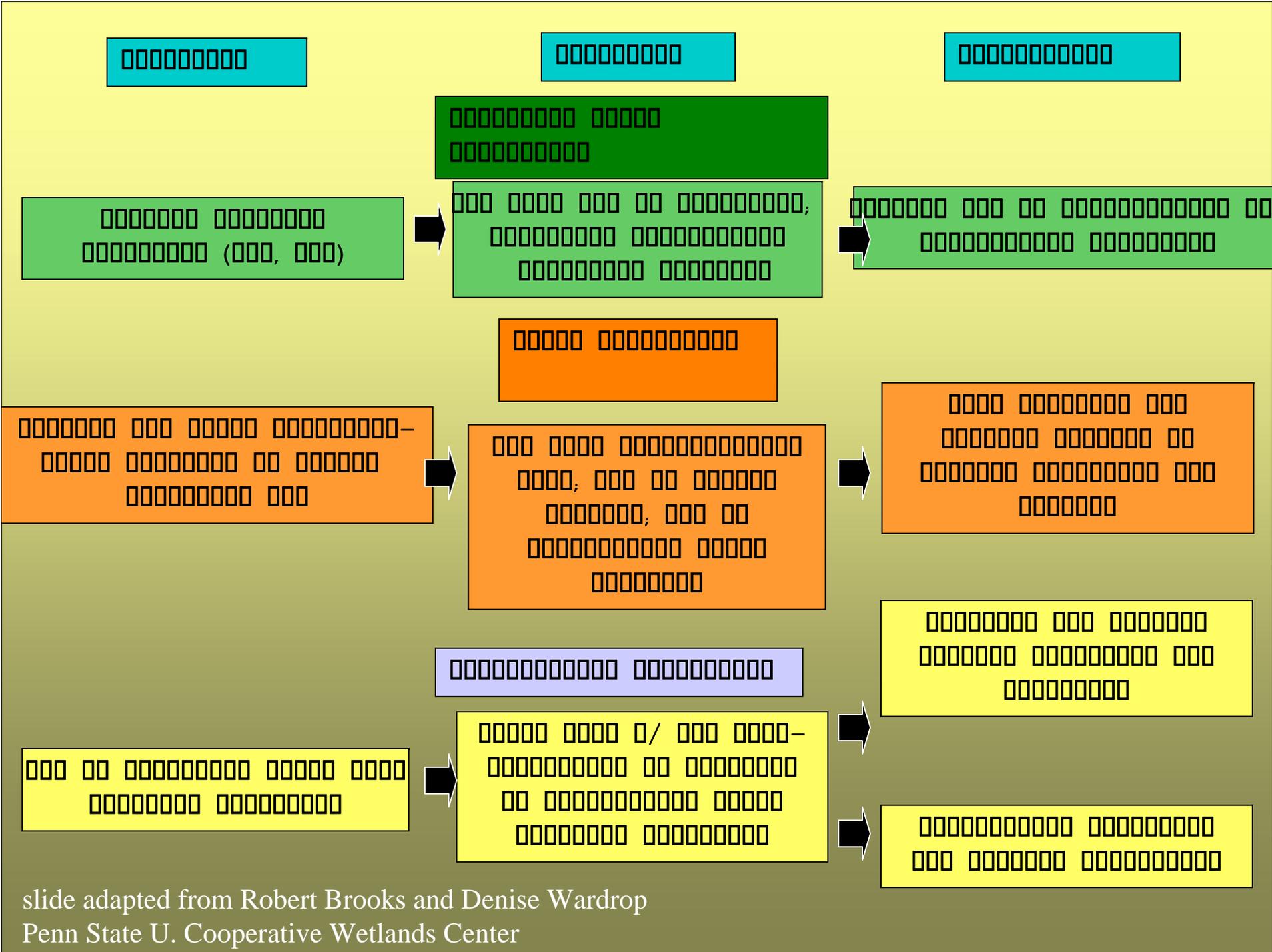
# Overview of Wetland Assessment

- Current wetland bioassessment thought outlines 3 levels of assessment:
- **Level 1:** landscape level assessments using remote data and without site visit
- **Level 2:** “rapid” assessments with habitat, function, and stressor checklists with site visit
- **Level 3:** detailed biological and/or biogeochemical surveys with quantitative data collection of floral, faunal, physical, and/or chemical characteristics of wetland

# Questions in Wetland Assessment

- How do we find the wetlands? (Inventory)
- How do we assess their ecological integrity? (Condition)
- How do we use this information to improve condition? (Restoration)
- How do we use this information to improve wetland permit programs and wetland mitigation?



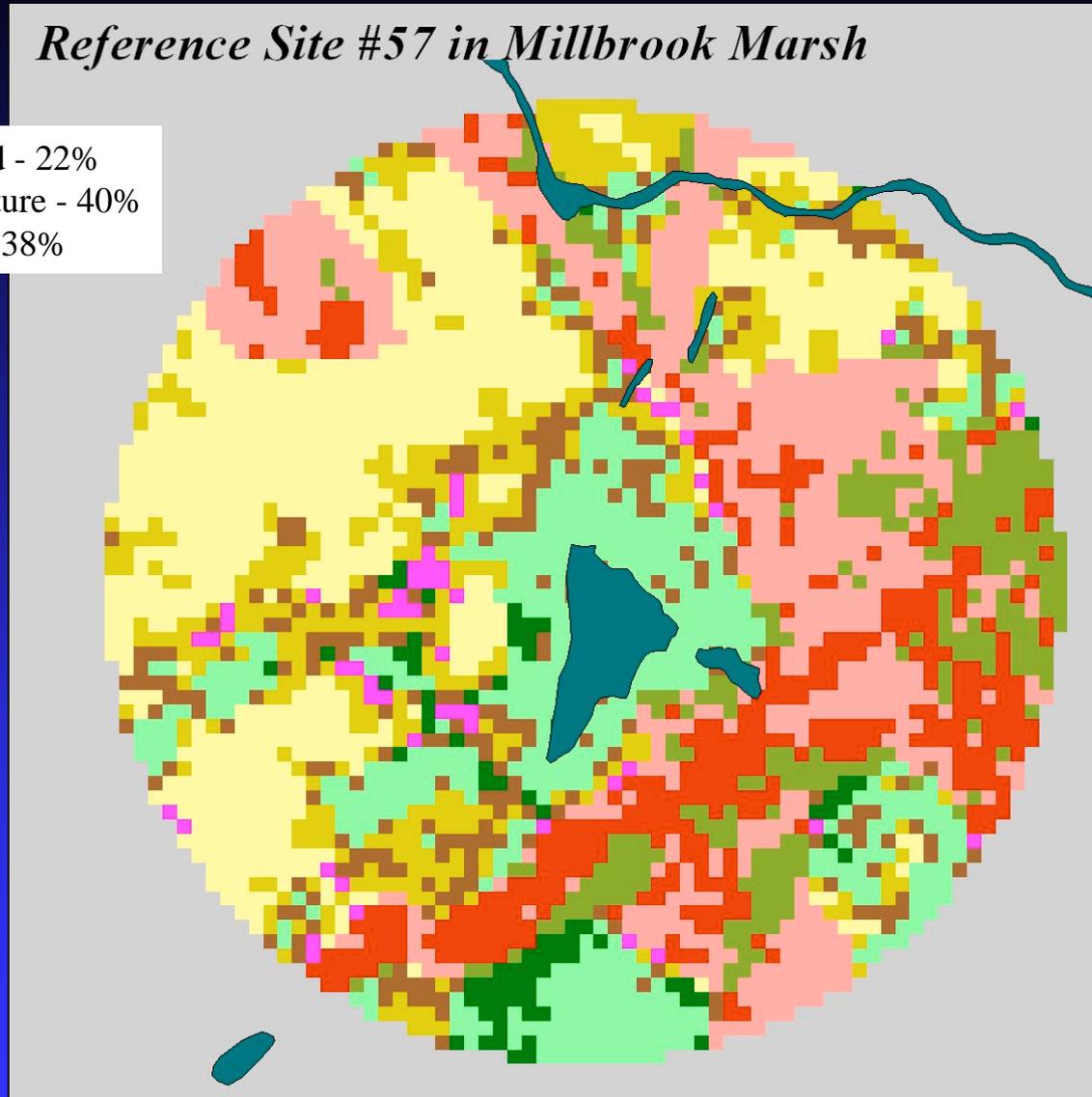




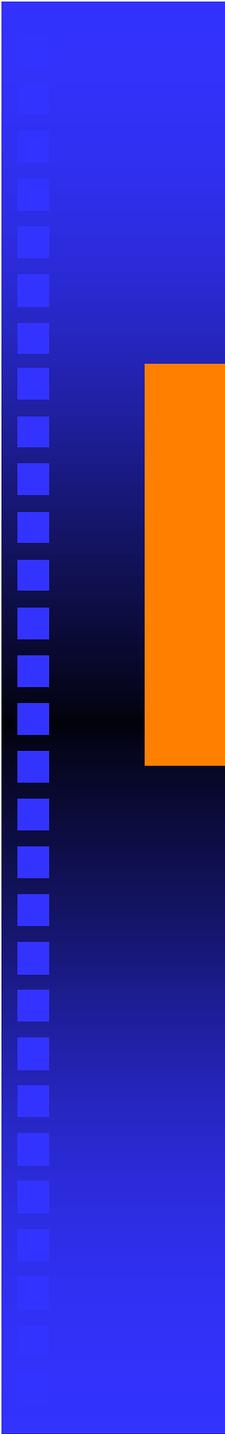
Level 1:  
Landscape Level Assessment

*Reference Site #57 in Millbrook Marsh*

Forested - 22%  
Agriculture - 40%  
Urban - 38%



slide from Robert Brooks and Denise Wardrop  
Penn State U. Cooperative Wetlands Center



# Level 2: Rapid Assessment

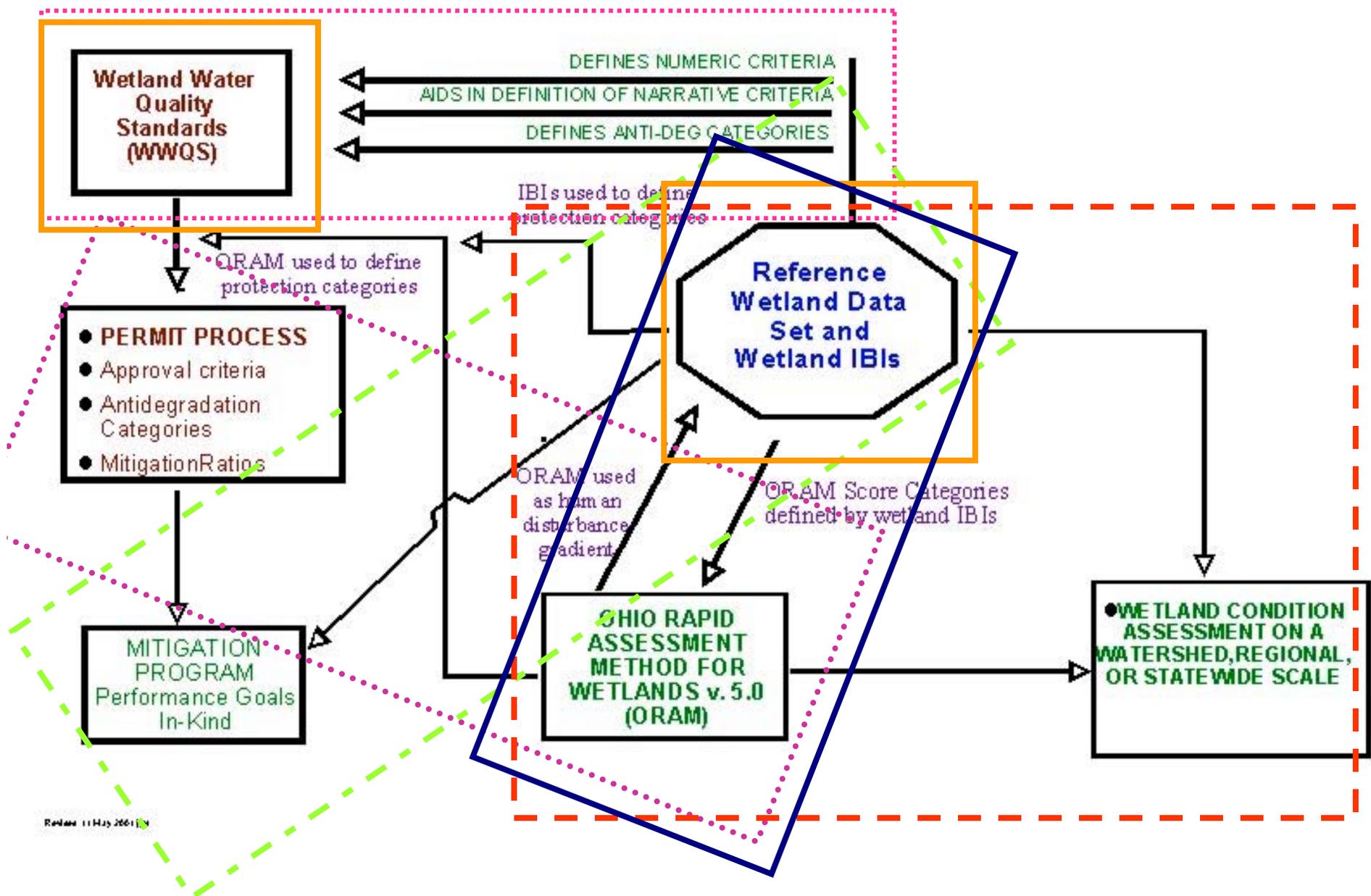
# Purpose and use of ORAM

- ORAM is designed as an assessment tool for performing regulatory categorization of wetlands
- ORAM can also be used as wetland condition assessment method for determining levels of ecological integrity in a wetland
- Not possible to perform level 3 assessments in every situation because of cost, staff resources, applicant resources, etc.
- Goal: to be able to use and rely on ORAM results in lieu of level 3 data in permit decisions, condition assessments, etc.

# Level 3: Quantitative Assessments



# Ohio EPA's Integrated Wetland Assessment Program



# Report Series: Integrated Wetland Assessment Program

- Parts 1 and 3 - Background Documents Summarizing ORAM and initial IBI development (in preparation)
- Part 2 - Ordination-Classification of Ohio Wetlands
- Part 4 - Vegetation Index of Biotic Integrity
- Part 5 - Biogeochemical and Ecological Studies of Natural and Mitigation Wetlands
- Part 6 - Standardized Mitigation Monitoring and Performance Standards
- Part 7 - Amphibian Index of Biotic Integrity
- Part 8 - Wetland Invertebrate Community Index
- Part 9 - Field Manual for VIBI

# Overview of changes 1998 Wetland Rules

- 3745-1-50 Definitions
  - ◆ definitions added and modified
- 3745-1-51 Narrative Water Quality Criteria
  - ◆ minor modifications and updates
- 3745-1-52 Wetland Designated Use
  - ◆ significantly expanded and includes numeric wetland biocriteria and wetland tiered aquatic life uses
- 3745-1-53 Wetland Chemical Criteria
  - ◆ relatively minor modifications and updates
- 3745-1-54 Wetland Antidegradation
  - ◆ update, revision and reorganization of rule
  - ◆ mitigation moved to stand alone rule -55

# New 3745-1-55 Wetland Mitigation

- Clarified and expanded mitigation monitoring and performance procedures
  - ◆ expanded definition of in-kind
    - ◆ out-of-kind allowed by requires explicit decision and choice of alternative wetland model
  - ◆ language to clarify performance requirements
- Mitigation ratios flattened
  - ◆ flat 2:1 for Category 1, 2
  - ◆ flat 3:1 for Category 3
  - ◆ upland buffer and preservation can be used for ratio greater than 1:1
- Preservation requirements reduced

# Key Conclusions and Recommendations of NAS Report

- *NAS Conclusion: The goal of no net loss of wetland is not being met for wetland functions by the mitigation program, despite progress in the last 20 years*
  - ◆ Ohio Response: This conclusion confirmed by Ohio EPA studies of mitigation wetlands and banks in 1995, 2001, and 2003-2004

# Recommendations to assure “no net loss” is attained

- NAS Recommendation: avoid wetlands that are difficult or impossible to restore, such as fens or bogs
  - ◆ Ohio Response: already implemented in existing rules, ORAM v. 5.0 Narrative Rating, and Category 3 wetlands
- NAS recommendation: site selection for mitigation should be conducted on a watershed scale
  - ◆ Ohio Response: proposed change to “on-site” to mean 14 or 8 digit HUC watersheds

# Conclusions and Recommendations of NAS Report on Mitigation

- NAS Recommendation: Hydrological variability should be incorporated into wetland mitigation. Static water levels are not normal
  - ◆ *Hydrologic functionality should be based on comparisons to reference sites*
- Ohio Response:
  - ◆ “in-kind” changed to include HGM class;
  - ◆ “out-of-kind” mitigation must still be based on natural reference wetland hydrology
  - ◆ hydrologic monitoring at least in first year
  - ◆ require hydrologic template that is equivalent to natural reference wetlands

# Mitigation should be self-sustainable

- NAS Recommendation: all mitigation wetlands should be self-sustaining. Proper placement in the landscape to establish hydrogeological equivalence is inherent to wetland sustainability. To do this
  - ◆ Consider the hydrogeomorphic and ecological landscape
  - ◆ Restore or develop naturally variable hydrological conditions
- Ohio Response: proposed changes to definition of “in-kind” and “Part 6” approach using natural reference wetlands as template for restoration

# Self-sustainability cont.

- NAS Recommendation: whenever possible, choose restoration over creation and avoid over-engineered structures in mitigation design
  - ◆ Ohio Response: the practice in Ohio's 401 program and designs approved in recent bank proposals
- NAS Recommendation: pay attention to soil and sediment geochemistry
  - ◆ Ohio Response: "Part 6" recommends soil sampling before and after construction based on data from Ohio EPA's mitigation studies

# Mitigation Performance

- *NAS Conclusion: Performance expectations are often unclear, and compliance is often not assured or attained*
- **NAS Recommendation:** mitigation goals must be clear and specified in terms of measurable performance standards. BPJ in assessing mitigation should be replaced by science-based assessment procedures *that scale mitigation assessment results to results from reference sites*, and reliably indicate ecosystem processes or use scientifically established structural surrogates
- **Ohio Response:** “Part 6” approach to mitigation monitoring and performance and key rule changes to support this approach

# Mitigation Performance cont.

- NAS Recommendation:
  - ◆ compliance monitoring before and after construction should be improved
  - ◆ Establish and enforce clear compliance requirements for mitigation performance
- Ohio response:
  - ◆ Creation of “mitigation coordinator” position at Ohio EPA
  - ◆ Completed and future comprehensive studies of banks and individual mitigations