NWI Update for the Chesapeake Bay Region – May 2013

NWI Activities

- Updated and enhanced mapping
- Inventory of potential wetland restoration sites
- Landscape-level functional assessment
- Quad-based trend analysis
- NWI+ Web Mapper
- Reports

Updated and Enhanced Mapping

- Using 2010-era digital imagery
- Classifying by:
  - Cowardin et al. types (standard NWI)
  - LLWW descriptors (hydrogeomorphic properties; NWI+; Tiner 2011)
    - Landscape Position
    - Landform
    - Water Flow Path
    - Waterbody Type
  - P-wet areas (potential wetland areas based on undeveloped portions of hydric soil map units in “natural” vegetation)
- Resultant Database = **NWI+ Database**

Landscape-level Functional Assessment

- Use NWI+ data to select attributes to correlate with 11 different functions:
  - Surface water detention
  - Streamflow maintenance
  - Nutrient transformation
  - Carbon sequestration
  - Bank/shoreline stabilization
  - Sediment/particulate retention
  - Coastal storm surge detention
  - Provision of habitat
    - Fish/aquatic inverts
    - Waterfowl/ waterbirds
    - Other wildlife
  - Habitat for Unique, Uncommon Plant Communities

Inventory of Potential Wetland Restoration Sites

- **Type 1 sites** – former wetlands that may be restorable ("*re-establishment*")
  - Effectively drained hydric soils lacking structures
  - Filled areas that are not developed (e.g., disposal areas)
  - Impounded former hydric soils
  - Use hydric soil data, imagery, and NWI+ data to map these areas
- **Type 2 sites** – existing wetlands that are altered ("*rehabilitation*")
  - Diked, ditched, excavated, "farmed wetland", and tidally restricted wetlands
  - Use NWI+ data to locate these

Quad-based Trends Analysis

- Examines wetland changes using digital imagery – 1990s vs. 2010-era
- Detailed land use classification following Anderson et al. (1976)
- Changes in wetland types
- Losses and gains in wetlands by Cowardin et al. type
- Apply LLWW descriptors to predict the effect of the changes on wetland functions in study area

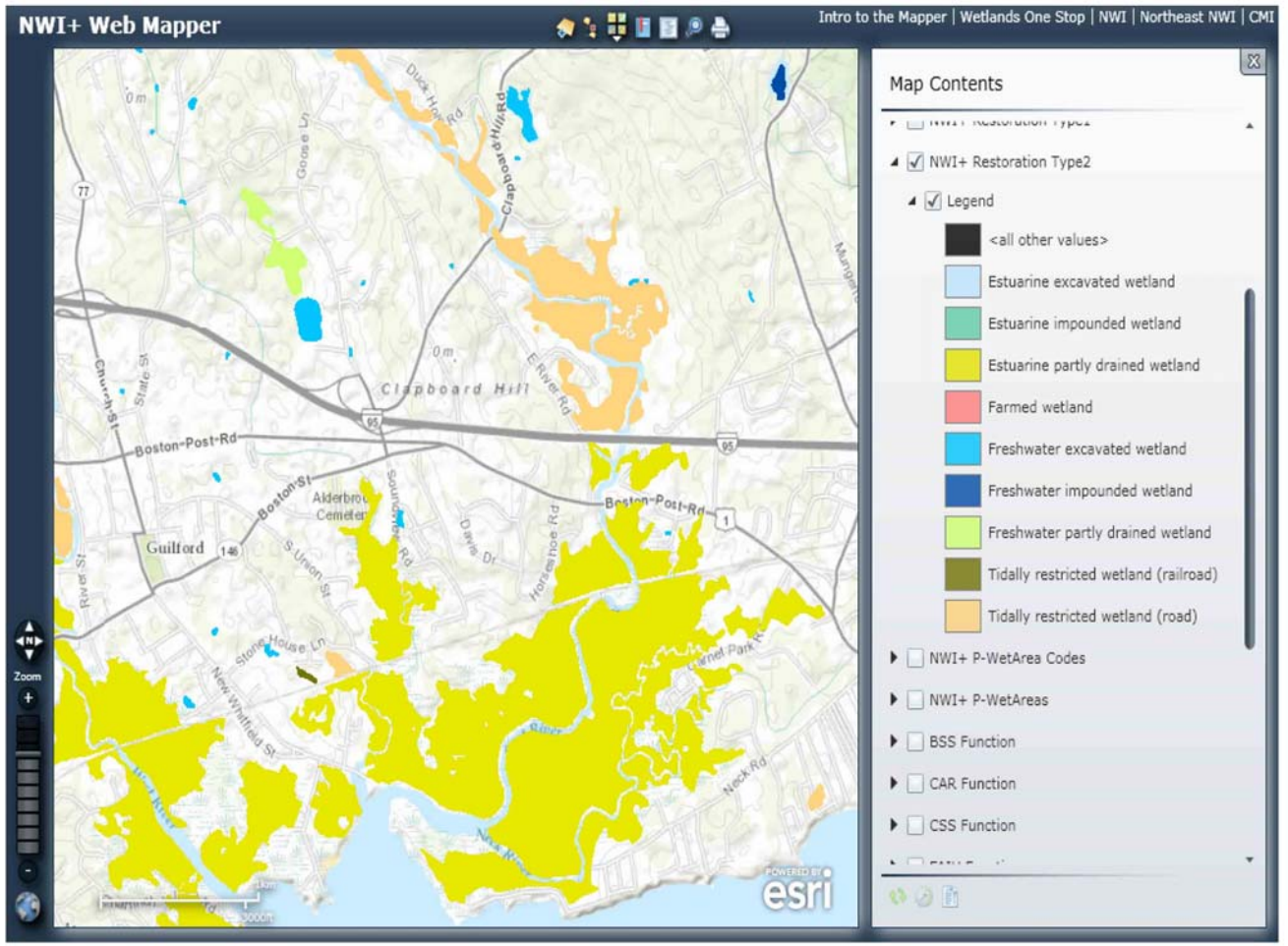
NWI+ Web Mapper

- On "**Wetlands One-Stop**" website (ASWM)

http://aswm.org/wetland-science/wetlands-one-stop-mapping

- Cooperative effort by Association of State Wetland Mgrs (ASWM), VTech's Conservation Mgmt Institute, and USFWS-Northeast
- Web mapper displays geospatial data from "special projects"
  - NWI and LLWW types
  - Landscape-level functional assessment
  - P-wet areas (potential wet areas based on soils)
  - Potential wetland restoration site inventory

NWI+ Web Mapper (example – restoration data for Connecticut)



Special Reports

- Wetland Status
- Wetland Characterization and Preliminary Landscape-level Functional Assessment
- Wetland Changes (trends)
- Potential Wetland Restoration Sites

See examples online at Wetlands One-Stop Website (“NWI+ Reports”)

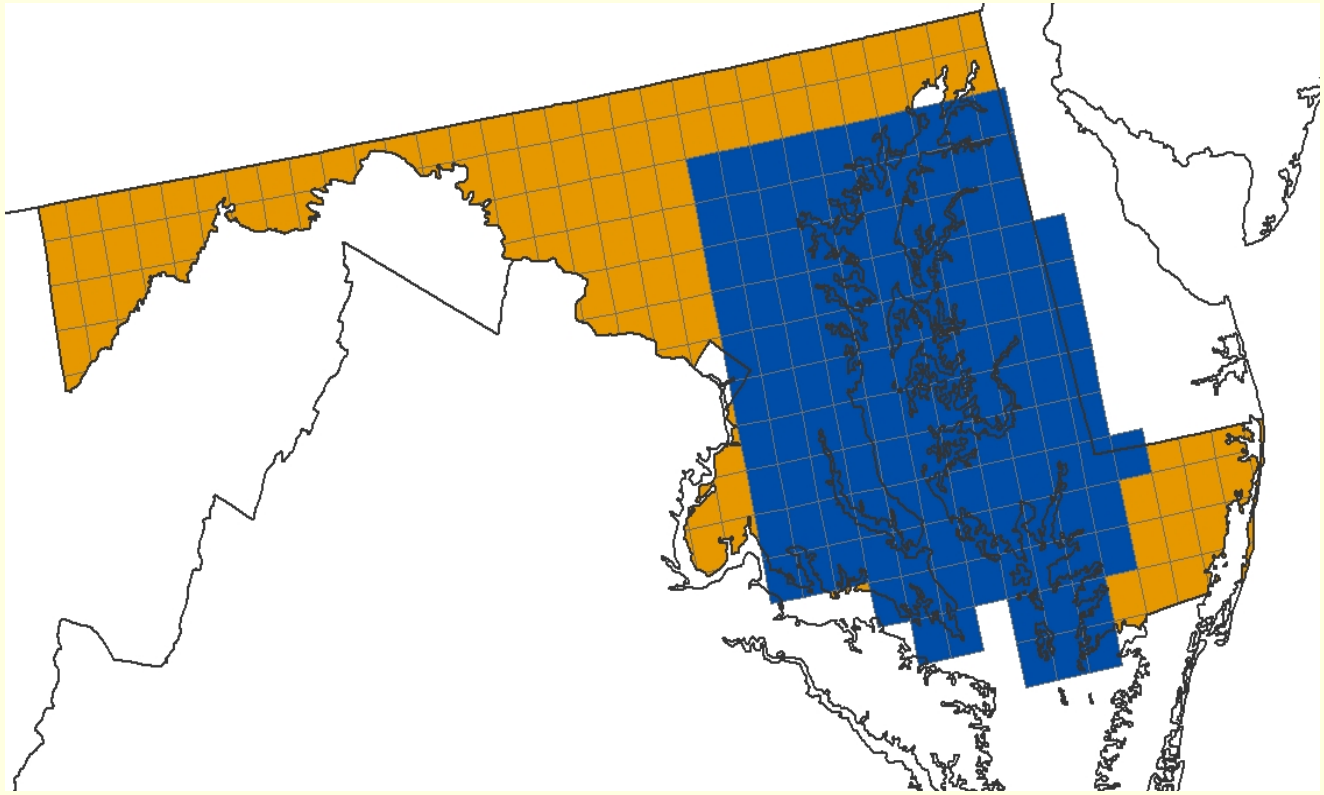
http://aswm.org/wetland-science/wetlands-one-stop-mapping

NWI Projects

- Eastern Maryland
- James River watershed (mainstem)
- National Wildlife Refuges
  - Great Dismal Swamp
  - Fisherman’s Island
- Wetland Trends in Selected Areas

Eastern Maryland Study Area

- 90-quad area (in blue)

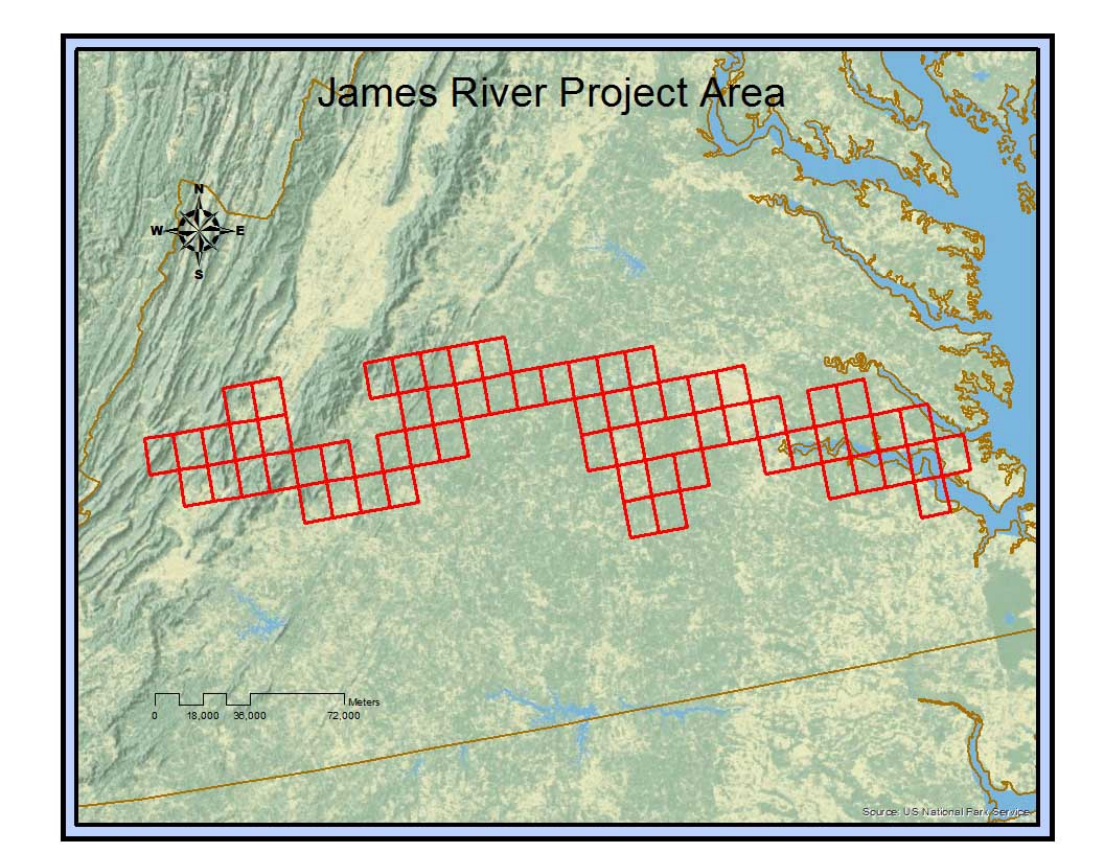


Eastern Maryland Scope of Work

- Update NWI data – 2012 imagery
- Create NWI+ Database
  - LLWW classification
  - P-wet areas inventory
  - Landscape-level functional assessment
  - Potential wetland restoration site inventory
- Post geodata on NWI+ Web Mapper
- Prepare inventory reports

James River Study Area

- 64-quad area along mainstem of river



James River Scope of Work

- Update NWI data – 2012 imagery
- Create NWI+ Database
  - LLWW classification
  - Landscape-level functional assessment
  - Potential wetland restoration site inventory
- Post geodata on NWI+ Web Mapper
- Prepare inventory reports

Refuge Mapping

- Standard NWI Updates
  - Chincoteague and Wallops Island NWRs (9 quads) – completed
  - Great Dismal Swamp and Fisherman's Island NWRs (10 quads) – in progress
- Data will eventually be posted on NWI website "Wetlands Mapper"

Quad-based Trend Analysis

- Study Area #1 – 40 quads in MD/VA update area
- 1990/94 – 2012 analysis
- Basic interpretation completed
- Analyzing results
- Report – sometime this summer
- Study Area #2 - ~20 quads (to be determined)
- EPA-funded: Contact Peter Stokely

Future of NWI

- National Program
  - Will continue to post standard NWI data on “Wetlands Mapper” and report on 10-year national wetland trends
  - Focus on filling in the gaps to get a complete database for the country
  - Will likely rely on contributed data from states for future updates
- Regional Program
  - No funds this year for regional mapping
  - Eliminated Regional Coordinator positions at beginning of FY but reinstated and told to finish existing work
  - Future uncertain