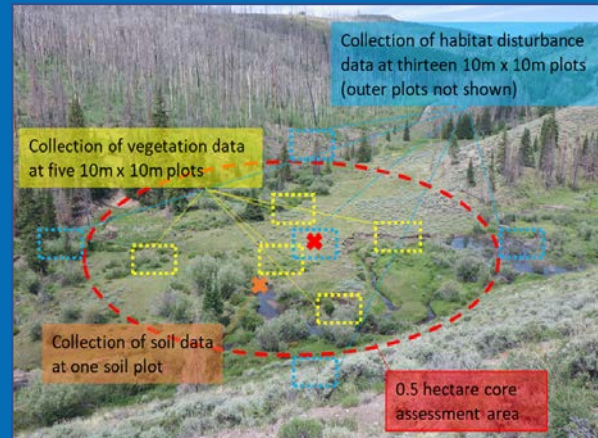


NWCA Data and Applications for State Wetland Programs

NEBAWWG-MAWWG Joint Meeting

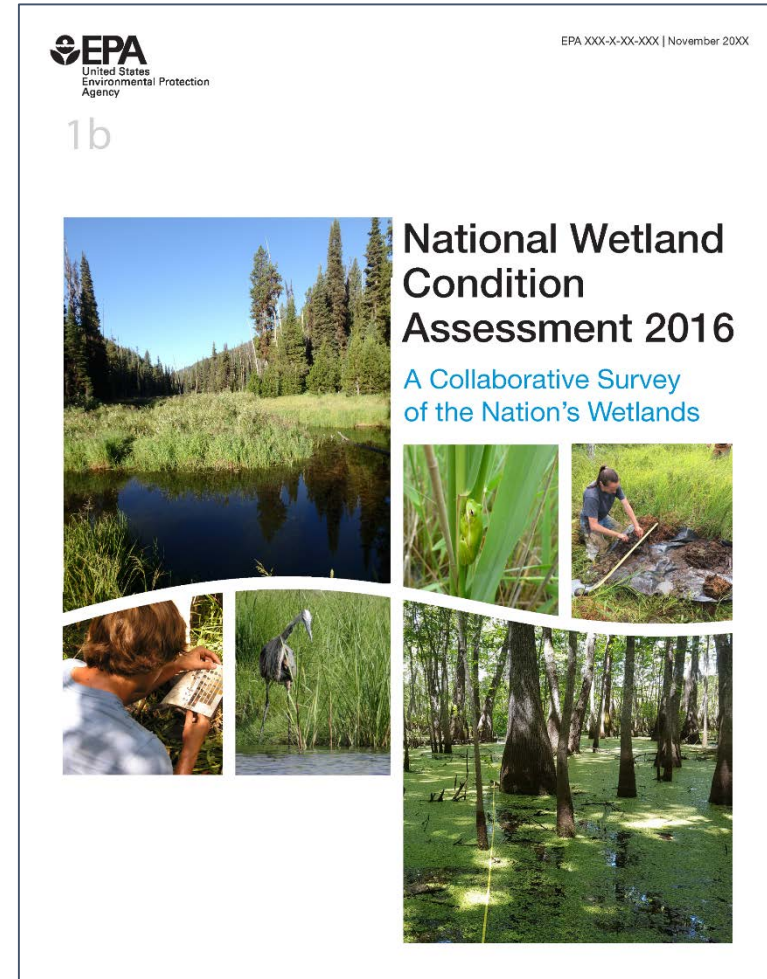
Gregg Serenbetz, U.S. EPA Office of Water



November 14, 2018

NWCA Status

- 2016 datafiles
- 2016 analysis and report
- Preliminary planning for 2021

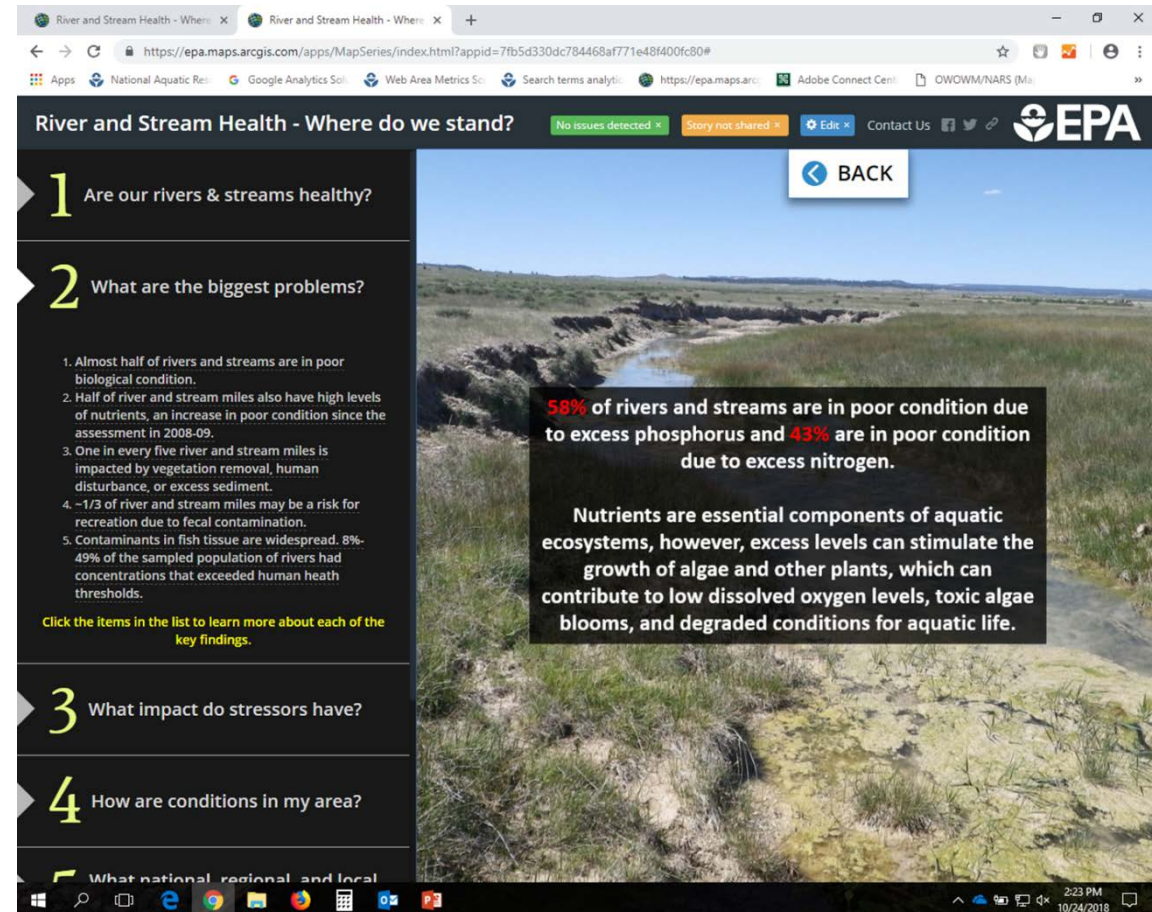


Expanding use and application of NWCA data

- Communication and outreach efforts
- Tools for using and applying data
- Research into additional data applications

Story Maps

- Draft story map for EPA's rivers and streams assessment in review
- Story map for NWCA created using similar template
- Reside on EPA webpage when complete

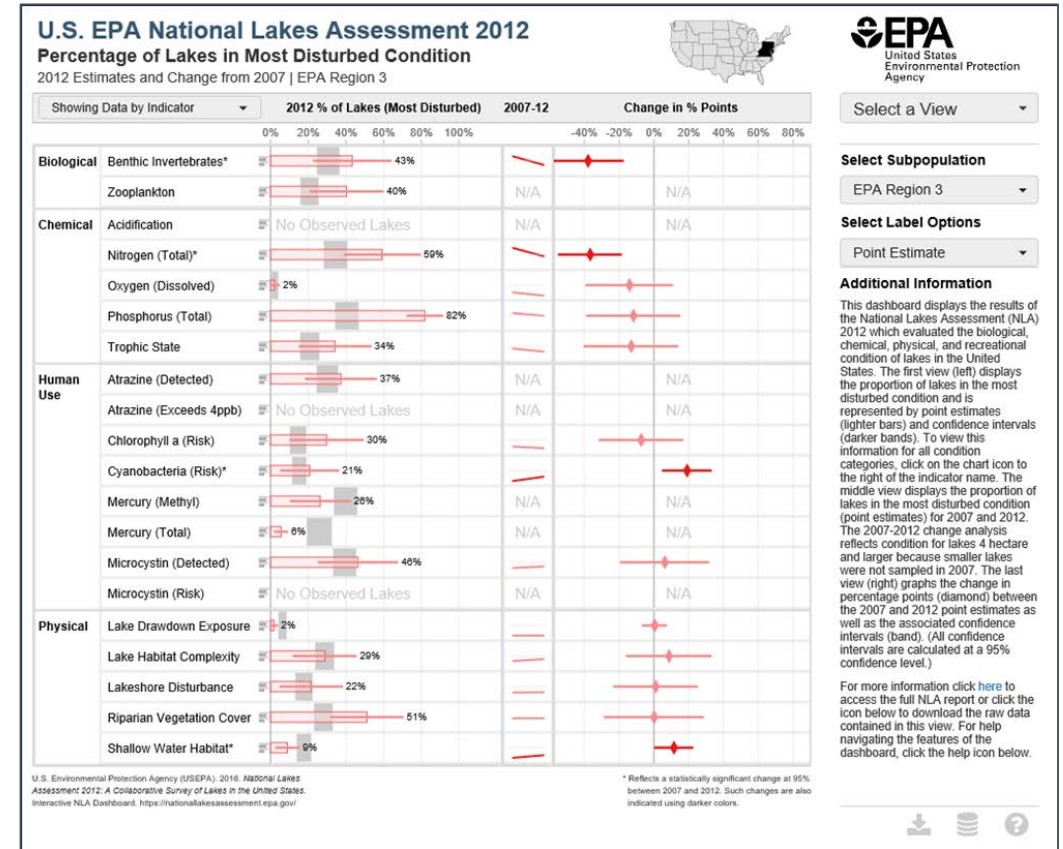


NWCA Tools for Environmental Decision Makers

- Web-based guide to tools and applications of NWCA data
 - Linked to NWCA webpage (<https://www.epa.gov/national-aquatic-resource-surveys/nwca>)
- Discussion of potential applications of the methods, data, and findings to a variety of programs
- Examples from states, tribes, federal agencies, and other partners
 - Using VMMI to evaluate condition of mitigation bank
 - Assessing wetland habitat for migratory birds
- Continuously updated with new examples and potential applications

Data Dashboards

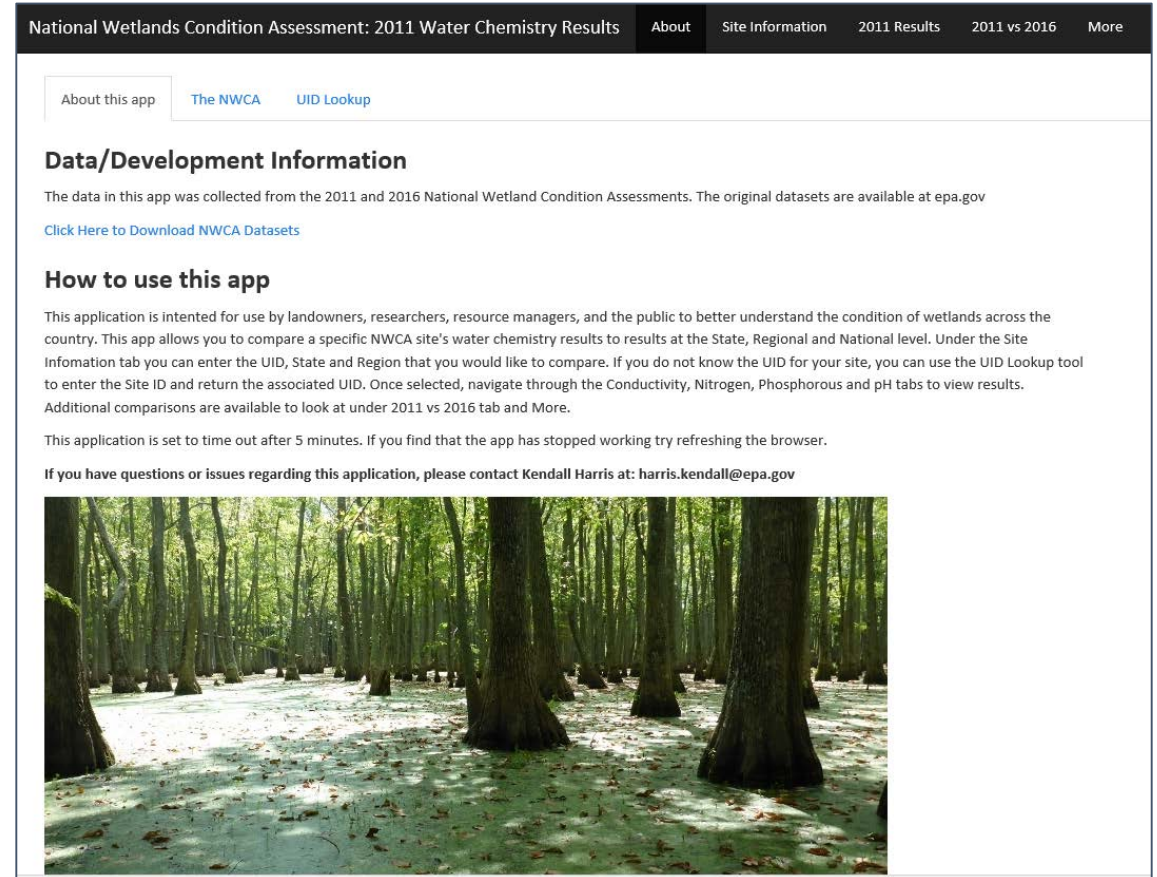
- Web-based data visualization tools
- Population estimates and change for NWCA 2011 & 2016 indicators
- Other metric data
 - Visual way to place NWCA data within context of more localized data
 - State/Tribal monitoring data
 - Specific wetlands
 - Help identifying data metrics to showcase



<https://nationallakesassessment.epa.gov/>

Exploration and Visualization Tools in R

- Shiny Apps
- R Markdown files



<https://kendallharris.shinyapps.io/WaterChemApp/>

Exploration and Visualization Tools in R

- Shiny Apps
- R Markdown files

Using NWCA Soil Data

Annie Rossi

05/31/2018

Code ▾

NWCA Soil Data Files

NWCA soil data is contained in three files on the NARS website:

- nwca2011_soilprofsum.csv - Contains information on each Soil Pit, including Veg Plot associated with Soil Pit, Hydric Soil Field Indicator(s) present, depth of inundation and/or depth to soil saturation, and if the Soil Pit was the Representative Pit
- nwca2011_soilprohorizons.csv - Soil profile description; morphological data for each horizon (four soil pits described at each site to depth of 60 cm)
- nwca2011_soilchem.csv - Physical and chemical laboratory analyses of each sampled horizon (from Representative Soil Pits)

Merging files and accurately matching horizon field and lab data will require matching three (or more) parameters:

- UID (or SITE_ID and VISIT_NO)
- PIT
- LAYER (HORIZON in nwca2011_soilprohorizons.csv)

Soil Profile Data in R

In these examples, the R package [Algorithms for Quantitative Pedology \(aqp\)](#) was used to aggregate horizon data to corresponding sites (each site can have multiple horizons with varying depths and thicknesses). This package was designed support common soils-related tasks such as visualization, aggregation, and classification of soil profile data. It is incredibly useful when working with large amounts of soil profile data, such as collected for NWCA. Related packages also allow the user to bring in NCSS soil data sets available through NRCS (see the website above for more information).

First step is to load the NWCA site information and soil data.

Depending on your objectives and analysis plans, you may need to conduct some additional “cleaning” of the NWCA soil data files.

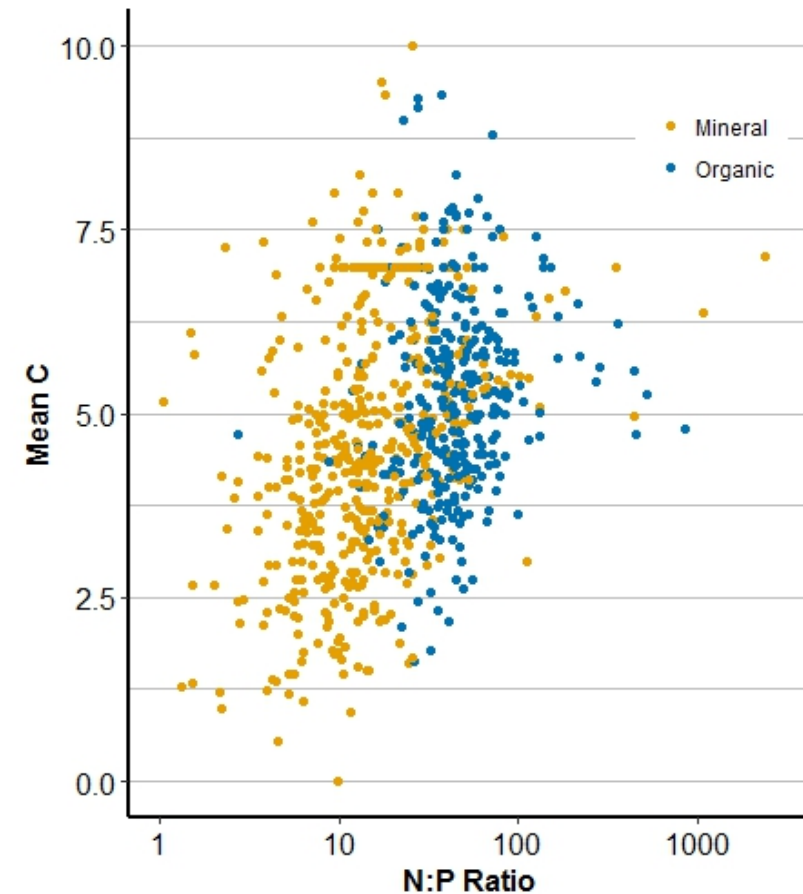
- The parameter DEPTH = the lower boundary of the horizon; If you plan to use aqp, you will need upper and lower boundary depths for each horizon
 - The upper horizon boundary is the depth of the lower boundary of the overlying horizon
 - If some horizons within the profile were not sampled for laboratory analysis, may need to use field profile descriptions to get upper boundary depths

PNW Webinar Series and Workshop

- Training on survey design and data analysis for Pacific Northwest states and tribes
 - PNW intensification of sites in NWCA 2016
- Webinar series teaching core components of NWCA survey design and analysis
 - Webinar presentations available on NWMAWG SharePoint site
- Weeklong workshop in Oct 2018
 - Intensive, hands-on training using R to analyze NWCA data and generate population estimates
- Interest in holding workshops like this in other Regions

Research into additional applications

- Soil nutrients
- Above-ground biomass
- UC Berkeley/NASA project
 - Use of NWCA veg data and multi-spectral satellite imagery to monitor biodiversity
- Calibration/validation data for new NASA satellite (NISAR)



Feedback

- Are these the right kinds of outreach and data tools to focus on?
 - In what ways would they be helpful or not to your programs?
- Are there other things we should do to communicate and promote further use of the data?
- How are you, or other groups you know, using NWCA data?
- How would you like to use it?
- What are the barriers to using NWCA data?
 - How can we make it more approachable to potential users?