

SESSION: 102 – ASSESSING THE ECOLOGICAL CONDITION OF WETLANDS AT THE NATIONAL, REGIONAL, AND STATE SCALES: RESULTS FROM THE NATIONAL WETLAND CONDITION ASSESSMENT AND ASSOCIATED STUDIES

TITLE: NATIONAL RESULTS FROM THE 2011 NATIONAL WETLAND CONDITION ASSESSMENT (NWCA) SOILS ANALYSIS

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ABSTRACT:

In 2011, US Environmental Protection Agency conducted the first National Wetland Condition Assessment (NWCA). Field crews conducted one-day surveys of over 1000 wetlands across the contiguous United States. For every wetland sampled, soils were collected by layer (i.e., horizon) to a depth of 120 cm, described, characterized for bulk density, and analyzed for major nutrients, trace elements, and heavy metals. We analyzed soil data from 1039 wetlands, using this dataset to quantify stressors such as, high concentrations of nitrogen (N), phosphorus (P), arsenic (As), cadmium (Cd), copper (Cu), mercury (Hg), lead (Pb), and zinc (Zn). Preliminary analyses showed that measured concentrations ranged from “below detection” to a maximum of 4.57% Total N, 561 mg Mehlich-P kg⁻¹, 115 mg As kg⁻¹, 12.3 mg Cd kg⁻¹, 548 mg Cu kg⁻¹, 1509 µg Hg kg⁻¹, 401 mg Pb kg⁻¹, and 1827 mg Zn kg⁻¹. Bulk density measurements ranged from 0.05 – 2.5 g cm⁻³. Our objective is to summarize our findings and report the relative risk to wetlands by Cowardin type and aggregated ecoregion, and across the Nation.

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