

How Local Interpretations Became Standard Irrigation Interpretations – Wayne J. Gabriel, Temple; Edward L. Griffin, Fort Worth; Jerry D. Walker, Fort Worth; and Dennis L. Williamson, Temple; USDA-NRCS

Working cooperatively between MLRA regions 9, 2 and 16, and with state staff, and regional staff at the USDA NRCS Central National Technology Support Center, we have developed many local soil interpretations that were later elevated in scope to state, standard, or national soil interpretations.

Part 617 of the NSSH defines the scope of soil interpretations.

National soil survey interpretations are nationwide in scope and application, and are mandated by federal legislation, policy, or regulation. National interpretations cannot be modified for state or regional uses because they are designed exclusively for national use across all political boundaries by NRCS and other agencies. Federal programs use national soil interpretations. Examples of national soil survey interpretations are highly erodible land, prime farmland, "T" and "I" factors, hydric soils, and the entire suites of interpretations designated with "MIL" (military) and "DHS" (Dept. of Homeland Security) as part of their name. The federal agency that is responsible for the mandated program provides the leadership to develop the criteria and documentation cooperatively with the National Leader for Soil Survey Interpretations.

Standard soil survey interpretations and their related criteria that are nationwide in scope and application but are not mandated by federal legislation, policy, or regulation. These interpretations and their criteria are the national standard. The soil survey interpretations generated by these criteria and templates are provided in soil survey publications, data downloads from the Soil Data Mart, Web Soil Survey, and other soil reports. Most surveys use standard interpretations.

Regional, state, or local soil survey interpretations are local or regional in scope and application.

The national military soil interpretations were created first in Arkansas by Edgar Mersiovsky as state soil interpretations, using trafficability criteria published by the United States Army. They were then refined with funds from Texas and Arkansas, and the expertise of Bob Nielsen of Applied Soil Geography. These state soil interpretations were then edited, validated, renamed, and elevated to national scope by personnel of the National Soil Survey Center (NSSC).

The California State Office in the late 1990's, produced several irrigation interpretations for statewide use. Sue Southard, soil scientist with NRCS, met with the NRCS irrigation specialists in California and identified the types of irrigation systems. She took the criteria in the National Soil Survey Handbook (NSSH) for irrigation, and modified it based on the design criteria in engineering manuals and guides. The criteria for the new irrigation interpretations came from the California Irrigation Guide, research at the University of California Irrigation Program, University of California (UC), Davis, the National Engineering Handbook of USDA-NRCS, and the National Soil Survey Handbook. Sue and the irrigation specialists put together the criteria for each soil interpretation, and reviewed it with Dr. Blaine Hanson at UC Davis.

National Soil Information System (NASIS) rules, evaluations, properties, and reports were then created by Sue Southard and then reviewed, tested, and edited and exported them for NRCS and public use in California.

We had the same need for irrigation interpretations in Texas as California, so we copied them in the NASIS and enhanced them for our state purposes by refining the criteria.

There was interest expressed by states in the Central Region to provide some irrigation interpretations for irrigation design and planning that could be accessed using Web Soil Survey and the Soil Data Mart. MLRA region 9 suggested to Ed Griffin and Jerry Walker at the USDA NRCS Central National Technology Support Center (CNTSC), that we could sponsor and assist in developing some standard irrigation interpretations for the nation based on the California irrigation interpretation models and offered to provide funds to build them if the CNTSC would provide the criteria.

Jerry and Ed worked on the proper naming of the irrigation interpretations using the latest irrigation technology and refined the criteria. Bob Nielsen built the seven prototype irrigation interpretations listed below, in NASIS so that states could test them on their own soil datasets.

Ed and Jerry co-chaired the Soil Interpretation Criteria Review Committee at the Southern Region National Cooperative Soil Survey Work Planning Conference on June 6, 2006, in Oklahoma City. It was an opportunity to work with soil scientists and engineers to discuss soil Interpretation needs.

They sent out the criteria and NASIS reports for review throughout the Central Region, and to their counterparts Leander Brown, and Terry Aho who coordinated the comments on the criteria in the East and West Regions. Ed and Jerry served as the clearinghouse for the nation for suggested criteria bugs and suggested modifications in the criteria.

Bugs and necessary revisions in the criteria were found and repaired through nationwide testing of the criteria. There were a few turf battles over ownership and transfer of ownership of the interpretations. There were also concerns that the California research that the interpretations were based on was properly cited.

By September 2006, interested parties from a number of states and disciplines had worked together to gather available irrigation interpretation criteria. We received significant written and verbal feedback during several teleconferences and a net conference in January 2007.

We had to keep the focus on producing lists of limitations for irrigation and not making the interpretations ratings for cropland.

By June, 2007 we had a consensus on criteria and names for the following irrigation interpretations:

- WMS – Irrigation, General
- WMS - Irrigation, Surface (Level)
- WMS - Irrigation, Surface (Graded)
- WMS - Irrigation, Micro (Above Ground)
- WMS - Irrigation, Micro (Subsurface Drip)
- WMS - Irrigation, Sprinkler (General)
- WMS - Irrigation, Sprinkler (Close Spaced Drops)

The "General Irrigation" Interpretation is the only non-specific irrigation interpretation and is intended to provide initial planning information for an individual who might not have a system type in mind.

Workable interpretations that all 50 states could use were built and transferred to the NSSC to be further modified and documented for use as standard soil interpretations.

By November 2007 the reports had been blessed by the NSSC and were available in all the states as standard NASIS standard soil interpretations reports.

Each state decides which regional, state, or local irrigation interpretations they want to export and download for survey areas in each state.

This project is an example of how ideas and criteria for new soil interpretations can be developed and elevated from the field level and state levels, to regional and or national use with the help and coordination of National Technology Support Center specialists and the states and other National Cooperative Soil Survey cooperators, to build consensus on soil interpretations criteria.

References:

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