

## **2018 Digital Soil Mapping Field Week Held in Tennessee**

Digital soil mapping (DSM) has been used successfully for several dozen soil survey projects over the past 10-15 years. The soil scientists using these techniques typically operate independently and lack a network of similarly knowledgeable collaborators. The DSM Focus Team proposed the implementation of DSM Field Weeks to bring together DSM practitioners from NRCS, academia, and cooperating agencies to work with field soil scientists that are pursuing DSM-centric projects. The objectives for conducting the DSM Field Weeks are to:

- 1) Develop a nationwide network of soil scientists informed by DSM techniques.
- 2) Cross-train local soil scientists and DSM experts while helping deliver soil survey products.
- 3) Develop knowledge and expertise of soil scientists embarking on their first DSM efforts.
- 4) Target sparsely investigated project areas or modeling problems.
- 5) Increase the network of point observations across the USA and Territories.
- 6) Advance the Soils2026 effort.

The initial DSM Field Week was held October 1st – 5th, 2018 in Gatlinburg, TN to assist the Waynesville, NC, Soil Survey Office with the MLRA 130B Frigid, Anakeesta Slate Landform project, located in the frigid soil temperature regime regions of The Great Smoky Mountains National Park and vicinity. The intent of this project is to update soil mapping within the frigid soil temperature regime in the high elevation mountains of east Tennessee and Western North Carolina. The Great Smoky Mountain fires of 2016 burned approximately 10,000 acres in the park and an additional 6,000 acres in the region and was the deadliest wildfire in the eastern USA since 1947. Soil stability issues were accelerated because of the fire and members of the MLRA Tech Team advised the Committee of the need to separate residual and colluvial soils at a more detailed level to improve the identification of slip-prone areas. In addition, techniques to improve estimation of depth to bedrock and coarse fragment content are being evaluated in support of the Soils 2026 soil property grid modelling effort.

The field week was the initial effort to assist the local soil survey office and consisted of a combination of data collection in the field and data processing and modelling in the office. The six months following the field week will be used for continued training, support, and collaboration between the DSM Focus Team members and the soil survey office to implement DSM methods to achieve their project goals. The field week participants will deliver a spatial product in raster format by May of 2019.

Although the DSM field weeks will target a specific project in each instance, the impact of the field week will reach far beyond the targeted project area with the participation of soil scientists from across the country who are developing DSM knowledge and skills. The opportunity for participants to share and apply their gained experience and knowledge in their local projects, offices, and regions is great. Additional field weeks are anticipated for the coming years.



**From L-R, Travis Nauman (USGS), Sam Streeter (NRCS, CO), Tiffany Allen (NRCS SSPL, NC), Jim Thompson (WVU), Victor Cruz (NRCS, NC) collect soil and vegetation data at a sample point.**



**Participants L-R, Tiffany Allen (NRCS SSPL, NC), Tom D’Avello (NRCS, WV), Alex Stum (NRCS, TX), Ben Moore (NRCS, MT), Jim Thompson (WVU), Sara Saunders (NRCS, PA), David White (NRCS, NM), Travis Nauman (USGS), Victor Cruz (NRCS, NC). Not pictured; Sam Streeter (NRCS, CO), Alan Moore (NRCS, RO-6), Amanda Connor (NRCS, NC).**