# SSHCZO Metadata Worksheet

|  |  |
| --- | --- |
| Data File Name | **DOE SSHCZO Soil Core Subset Data 2015** |
| Date Prepared | 2016 April 15 |
| Descriptive Title | Root length density and soil physical and chemical properties taken at 100 locations throughout the catchment |
| Update Frequency | Never |
| Abstract | Root length density and various soil physical and chemical properties were measured in 100 soil cores in the catchment with the goal of understanding topographic controls on belowground carbon fluxes. |
| Investigator  Contact Info | *Lexie Orr: aso124@psu.edu, David Eissenstat, dme9@psu.edu* |
| Data Value Descriptions | • COL1: label = Easting  • COL2: label = Northing  • COL3: label =Field Site (associated with map)  • COL4: label = Tube (soil core label)  • COL5: label = Depth ID (a=0-20cm, b=20-40cm, c=40-80cm, d=80-120cm, e=120-165cm)  • COL6: Slope Position (1=Ridgetop, 2 = Midslope Planar, 3 = Swale, 4 Valley Floor)  • COL7: KCl Exchangeable Acidity, units=meq  • COL8: SOM (soil organic matter), units = %  • COL8: Absorptive RLD, units = cm/cm3  • COL9: Avg NH4 conc., units = ppm  • COL10: Avg NO3 conc, units=ppm  • COL11: Rock:Soil, units=g/g   * COL12: Soil Water Content, units=% |
| Keywords | root length density, soil water content, nitrate, ammonium, soil organic matter, exchangeable acidity, topography, belowground carbon |
| Methods | 5 soil cores were taken at each plot (map provided) to a maximum depth of 165 cm or until mechanic barriers prevented maximum coring depth. Cores were dissected into intervals of 0-20, 20-40, 40-80, 80-120 and 120-165 cm depending on the depth of the core taken. Core samples were gently homogenized and divided into two equal halves, one each for soil analysis and root distribution. 2 of the 5 cores were analyzed for soil physical and chemical properties  Soil was washed from root samples through a 2mm sieve, and roots were stored in water at 5°C. Roots were then dissected by order. Absorptive roots were defined as third order roots or less with most roots falling into the first two orders. Absorptive and woody roots were scanned separately and processed with WinRHIZO to determined average length and diameter of each core sample. Root length density (RLD) was determined using the following equation:  RLD = (root length x 2) / core sample volume.  Samples for soil analysis were air dried in a greenhouse and sieved to 2mm before being analyzed. Nitrate concentration, ammonium concentration and exchangeable acidity were determined with a KCl extraction. Soil organic matter content was determined using loss on ignition at 450°C. Water content was measured on July 7th, 2015 usingan IKMO trime. |
| Sites | A map is provided with locations of all of the plots along with coordinates of each soil core. |
| Publications | None |
| Citation | Logistical support and/or data were provided by the NSF-supported Susquehanna Shale Hills Critical Zone Observatory. |
| Data Use Notes | The user of Susquehanna Shale Hills CZO data agrees to provide proper acknowledgment with each usage of the data. Citation of the name(s) of the investigator(s) responsible for the data set, in addition to the generic statement above, constitutes proper acknowledgment. Author(s) (including Susquehanna Shale Hills CZO investigators) of published material that makes use of previously unpublished Susquehanna Shale Hills CZO data agree to provide the Susquehanna Shale Hills CZO data manager with four (4) copies (preferably reprints) of that material for binding as soon as it becomes available. The user of Susquehanna Shale Hills CZO data agrees not to resell or redistribute shared data. The user of these data should be aware that, while efforts have been taken to ensure that these data are of the highest quality, there is no guarantee of perfection for the data contained herein and the possibility of errors exists. These data are defined as either public or private, such that a password may be required for access. |

# 

