# CZO Metadata Worksheet

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| Data File Name | SH\_RLD\_July2013.xlsx |
| Date Prepared | 4/11/2014 |
| Descriptive Title | Shale Hills Susquehanna Critical Zone Observatory Root Length Density by Slope Position |
| Update Frequency | N/A |
| Abstract | Root length density from fine roots (first and second order) from 36 cores collected in July 2013, seperated by depth increments. Approximate locations of cores based on tree ID from tree survey list are as follows:  (Position-Core nest-Curvature Type, TreeID)  RT-A-Planar, 1180  RT-B-Planar, 1181  RT-A-Swale, 990  RT-B-Swale, 994  MS-A-Swale, 1186  MS-B-Swale, 1242  MS-A-Planar, 1072  MS-B-Planar, 1054  VF-A-Swale, 1221  VF-B-Swale, 1207  VF-A-Planar, 1129  VF-B-Planar, 1059 & 1058 |
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| Data Value Descriptions | * COL1: label=ID, identification number associated with root scanning order * COL2: label=SampleID, SH for Shale Hills, RT, MS, or VF for slope position name, Letter (A or B) for nest group, number for core number (1, 2, or 3), curvature type – Swale or Planar, and ending depth of core increment * COL3: label=location, Slope position: RT = ridgetop, MS = midslope, VF = valley floor. * COL4: label= depth, ending depth of core increment (cm) * COL5: label= Increment Height\_m, height of core increment in meters for volume calculation * COL6: label= Increment\_Vol\_m^3, volume of core increment in cubic meters * COL7: label= Length\_mm, length of 1st and 2nd order fine roots in millimeters * COL8: label= Length\_m, length of 1st and 2nd order fine roots in meters * COL9: label= RootDensity\_m m^-3, length of roots divided by increment volume |
| Keywords | root length, root density, tree, slope position, rooting depth, root distribution, soil cores |
| Methods | * Cores were collected at three slope positions (ridge, midslope, and valley) and two curvature types (planar and swale). * Within these locations, two nests of cores were sampled (A and B) with three replicates each (numbers 1-3). * Cores were collected at depth increments of 0-10 cm, 10-20 cm, 20-40 cm, and 40+ cm. The last depth increment was based on depth to refusal. On some valley floor locations, an ending depth of 100 cm was selected based on equipment limitations. * Manual post-hole coring equipment with driver used. Core diameter was 4.5 cm. * Soil was washed and sieved. * First and second order fine roots were separated from higher order roots and scanned using a desktop scanner with Winrhizo software (Regent Instruments, Inc., Quebec, Canada) for length measurements * Depth increment and core radius used to calculate soil volume for each sample. Length of root divided by soil volume to determine root length density (m m-3). |
| Citation | The following acknowledgment should accompany any publication or citation of these data: Logistical support and/or data were provided by the NSF-supported Shale Hills Susquehanna Critical Zone Observatory. |
| Publications | In preparation, contact David Eissenstat (above) |
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