# CZO Metadata Worksheet

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| Data File Name | SH\_RLD\_Aug2013\_TowerSite.xlsx |
| Date Prepared | 4/11/2014 |
| Descriptive Title | Shale Hills Susquehanna Critical Zone Observatory Root Length Density for Tracer Experiment Towers |
| Update Frequency | N/A |
| Abstract | Root length density from fine roots (first and second order) from 18 cores collected in August 2013, separated by depth increments.  Cores were collected from the north ridge at Shale Hills, just east of the meteorological station at the site of 3 scaffolding towers, which were erected for the growing season of 2012 for a tree water use study.  The scaffolding towers were located in the center of three different groups of trees. Those treeIDs are as follows:  Tower A: 2068, 2069, 2070, 2071, 2072  Tower B: 2073, 690, 688, 689  Tower C: 2076, 2074, 2075 |
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| Data Value Descriptions | * COL1: label=ID, identification number associated with root scanning order * COL2: label=Core, Tower A, B or C and core number 1-6 * COL3: label=Depth, ending depth of core increment (cm) * COL4: label=SumRootLength\_mm, sum of root length for the sample in millimeters, some samples had multiple scanned images and root length was summed across images * COL5: label= RL\_m, root length of first and second order roots in meters * COL6: label= Increment Height\_m, height of core increment in meters for volume calculation * COL7: label= Increment\_Vol\_m^3, volume of core increment in cubic meters * COL8: 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 tower sites for tracer experiment that took place in 2012 * Within these locations (A, B and C), six replicates were collected (numbers 1-6). * Cores were collected at depth increments of 0-10 cm, 10-20 cm, 20-40 cm, and 40+ cm or to depth of refusal. * Manual post-hole coring equipment with driver used. Core had a diameter of 4.5 cm. * Soil was stored in refrigerator then 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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