Sampling plan and methods for biomass determination Living Carbon project.

10/2/2023

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| --- | --- | --- | --- | --- | --- | --- |
| Priority 1 | | | | | | |
| stratum | Event | Performance | 20mm diameter class | N | Intensity(%) | n |
| 1 | 5A | Elite | 0-20 | 9 | 50 | 4 |
| 2 | 5A | Elite | 20-40 | 24 | 50 | 12 |
| 3 | 5A | Elite | 40-60 | 2 | 50 | 2 |
| 4 | 4A | Elite | 0-20 | 2 | 50 | 2 |
| 5 | 4A | Elite | 20-40 | 19 | 50 | 9 |
| 6 | 16-20 | Control | 0-20 | 12 | 50 | 6 |
| 7 | 16-20 | Control | 20-40 | 20 | 50 | 10 |
| 8 | 16-20 | Control | 40-60 | 1 | 50 | 1 |
| 9 | 8-9D | Control | 0-20 | 9 | 50 | 4 |
| 10 | 8-9D | Control | 20-40 | 22 | 50 | 11 |
|  |  |  |  | 120 |  | **61** |

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| --- | --- | --- | --- | --- | --- | --- |
| Priority 2 | | | | | | |
| stratum | Event | Performance | 20mm diameter class | N | intensity | N |
| 12 | 13-15E | Poor | 0-20 | 12 | 25 | 3 |
| 13 | 13-15E | Poor | 20-40 | 21 | 25 | 5 |
| 14 | 2H | Poor | 0-20 | 9 | 25 | 2 |
| 15 | 2H | Poor | 20-40 | 23 | 25 | 5 |
|  |  |  |  | 65 |  | **15** |

Methods

1. Record tree ID, event and diameter class (flagging will indicate. 1 wrap for 0-20; 2 wraps for 20-40, 3 wraps for 40-60 mm)
2. Fall and segment stem. Record length of each segment
   1. 0-20 mm:
      1. Fall at 20 mm point
      2. Segment 20mm at butt end to 5 mm
   2. 20-40 mm:
      1. Fall at 40 mm
      2. Segment 40 mm at butt to 20 mm
      3. Segment 20 mm at butt to 5 mm
   3. 40-60 mm:
      1. Fall at 60 mm
      2. Segment 60 mm at butt to 40 mm
      3. Segment 40 mm at butt to 20 mm
      4. Segment 20 mm at butt to 5 mm
3. Limb stem segments w/ pruners or loppers
4. Separate branches into size classes. Include tree leader with branches
   1. 0 – 5 mm
   2. Greater than 5 mm
5. Tally number of branches from each group.
6. Find fresh-weight mass of each stem section and of each bundle of branches using hanging scale and mesh bag to hold material.
7. From each stem segment, cut a stem cross-section (cookie) from the butt end. 1-2’’ in length
   1. w/ sharpie, label stem section with tree ID and segment (e.g., LCOR-112, stem, 40-20mm)
   2. Record fresh mass of stem section.
   3. Place stem segment in paper bag with same label
8. From each branch size class pick two random branches:
   1. 0-5mm: measure length and record fresh mass
      1. place in labelled bag (e.g., LCOR-112, branch 0-5mm)
   2. Measure length and take a 1” cross-section from the butt end.
      1. Record fresh mass of cross-section
      2. Place cross-section in labelled paper bag (e.g., LCOR-112, branch,   
         >5mm)
9. Roots will be pulled up, rinsed and placed into burlap sacks to dry and measure dry mass.
10. Stem and branch segments will be air-dried and dry mass recorded for a dry to fresh mass ratio that will be applied to each segment or branch class