

CDW maximum probable diameter by site

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Background

- Field Operations technicians requested a standardized procedure for determining the length of transects for CDW tally sampling. To support this request, I have analyzed Vegetation Structure / Vegetation Characterization DBH data on a per domain basis.
- For most sites, datasets are filtered to remove stems with DBH ≤ 10 cm; filtered stem DBH data are then analyzed visually with histogram plots, and the 95th percentile of DBH was also calculated. The initial assumption is that the 95th percentile of DBH will correspond to the maximum likely DBH encountered.
- The choice of F-value for each site is initially based on the maximum expected size of the particles, as well as qualitative estimates of particle density at the site. The F-value may be revised iteratively with feedback from Field Operations technicians.
- Results are documented in NEON-2474 (<https://neoninc.atlassian.net/browse/NEON-2474>).

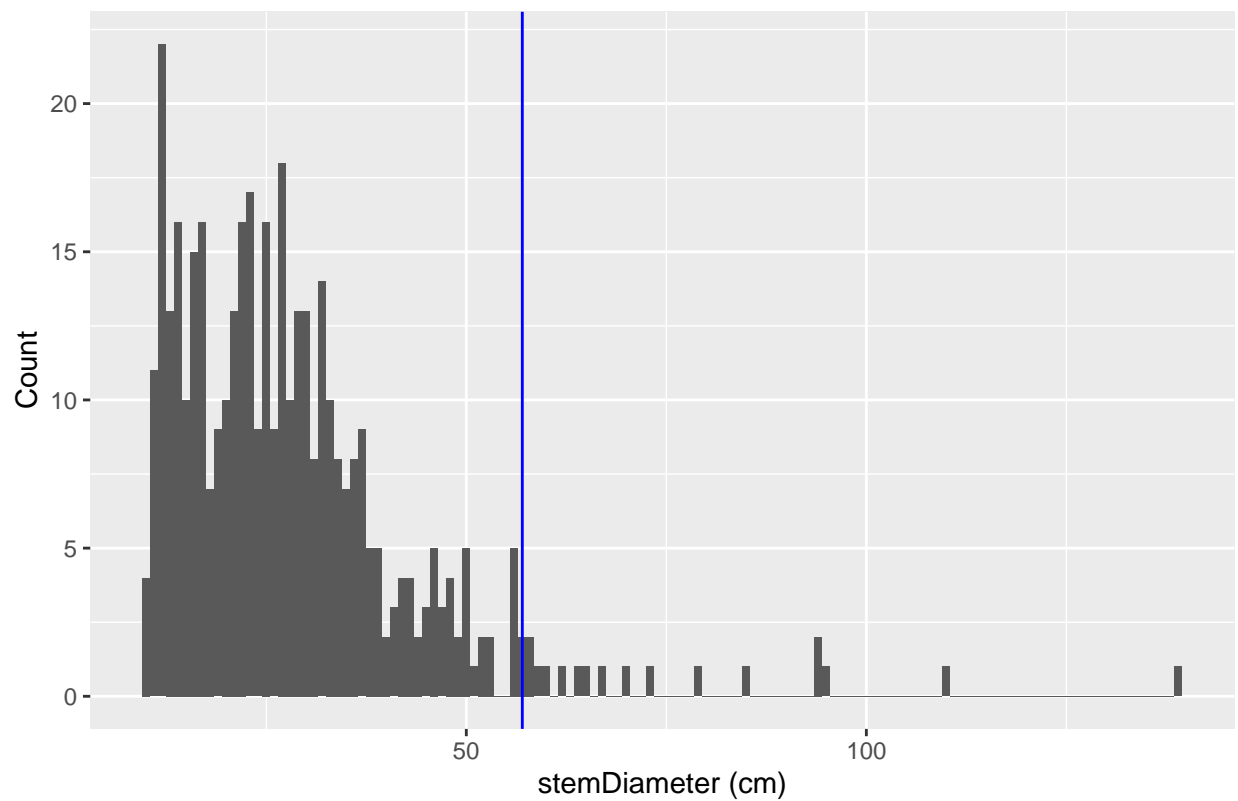
D12 YELL Plots: Pull VST data from L0 database

Summary of YELL Plot L0 Data

- 1640 records in L0 for which a **stemDiameter** was recorded (578 after filtering to the most recent eventID for each plotID)
- 407 records for individuals with DBH ≥ 10 cm

YELL: Results of stem diameter analysis

D12 D YELL YELL stemDiameter distribution



- maxLikelystemDiameter = 95th percentile for `stemDiameter` -> 57 cm
- Max `stemDiameter` = 139 cm
- Dlim for maxLikelyStemDiameter = 170 m @ F=8

Summary

CDW F-values and transect length (Dlim) by site

Desired transect lengths (Dlim, meters) associated with the `maxLikelyStemDiameter` (cm) at each site. The maximum likely stemDiameter is calculated as the 95th percentile for stemDiameter as recorded in Vegetation Structure data from both Distributed and Tower Plots in the most recent eventID for each plot, and `count` indicates the total number of individuals with DBH ≥ 10 cm used for the analysis; exception(s) are HEAL, where individuals with DBH ≥ 2 cm were used for the analysis. Transect lengths are based on F-values specific to each site, and will change if a new F-value is chosen for a site.

```
##   domain site fValue count maxLikelyStemDiam maxStemDiam Dlim
## 1  D12 D YELL      8   407                57          139  170
```