# i-Tree Eco – Field guide for complete inventories*

What is a tree?
For complete inventories, the only woody plants that are measured
are tree species that have a DBH ≥ 1" / 2.54cm.
Shrub species are not measured.

What is a Street Tree?
Street tree classification can vary. It is usually a tree planted along public roads,
located between the curb and built infrastructure.

DBH Measurement

• **Height DBH**
Height at which stem diameter is measured:
4.5' / 1.3m above planting grade

• **DBH**
Stem diameter measurement using a diameter tape

• **DBH Special Cases**
as per the illustration.
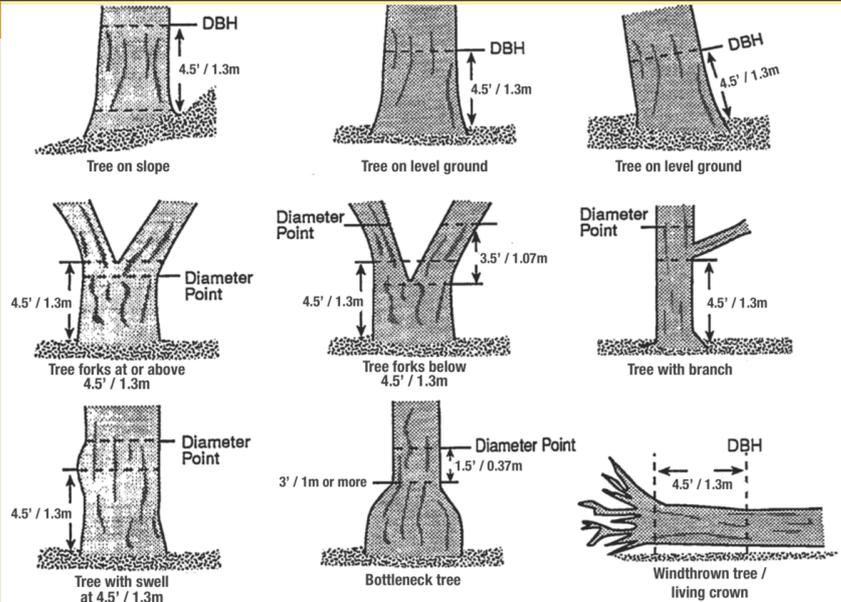
Measuring DBH in multi-stemmed trees
• If the point of pith separation is above planting grade (illustration: left), the plant is considered as a single tree; DBH of each stem (6 maximum) is recorded individually;

•if the pith union is below planting grade (illustration: center and right), each stem is considered as a separate tree.
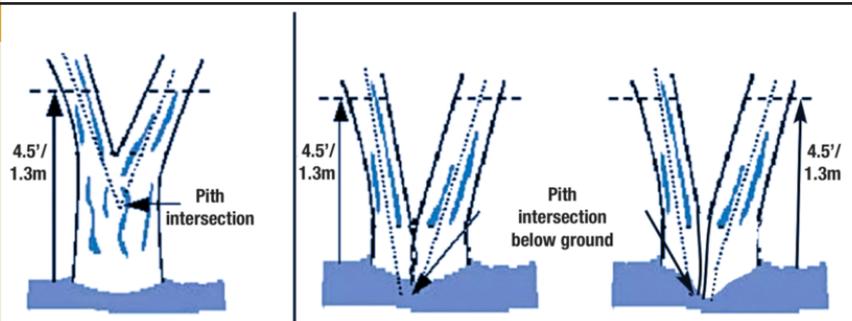
Total tree height
Measured from planting grade / ground to the top of the tree, alive or dead (per upper end of line Y in illustration),

Live tree height
The sum of crown base + live crown height (line X in illustration). Measured from planting grade / ground to the top of the LIVE crown (per upper end of line X in illustration),

Height to Crown Base
Measured from planting grade / ground to the base of the live crown's foliage (per Crown base line in illustration). Epicormic shoots below this line will be covered in percent canopy missing

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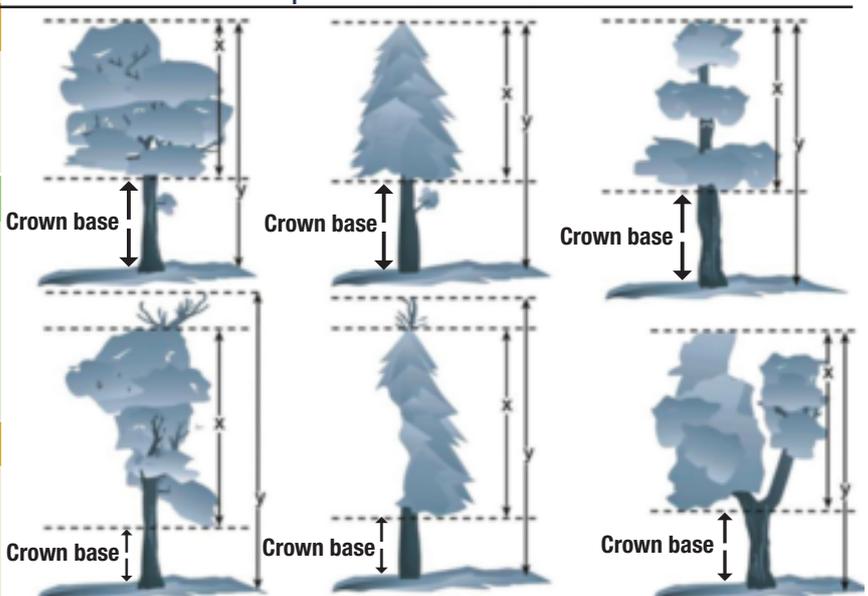
Designed and developed by

arbor

Collaborating partners

zhaw

Pan

Viewing the Crown
Crown measurements require viewing the crown as illustrated
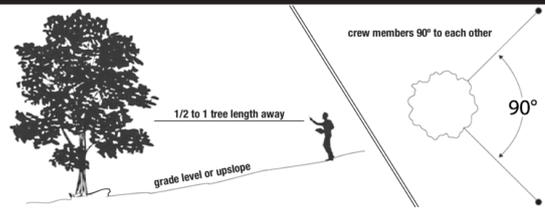
Crown width
Measure the live crown width to nearest 1' / .1m in two directions:
• north-south, east-west
• record dead trees as -1

Crown width

Crown Health: Percent dieback
Assess the percent of the upper/ outer portion of the tree's crown that has died back and is dead.

Lower branch death from shading/ competition not included
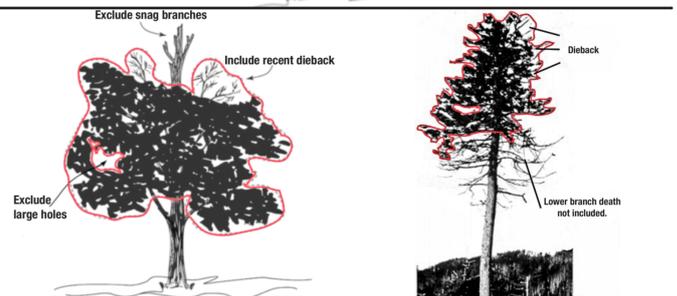
Percent Crown Missing
Measure the percent of the entire crown volume that is not occupied by branches and leaves (per Viewing the Crown illustration).

Visualize the healthy tree species in excellent condition with an outline based on total tree, live crown & crown base height measurements. In a forest, consider the natural crown shape for the species. Estimate the percent missing caused by pruning, dieback, defoliation, uneven crown and/ or dwarf or sparse foliage. Exclude inner canopy voids caused by self shading.

Reduce percent missing by percent of epicormic shoots located below the live crown.
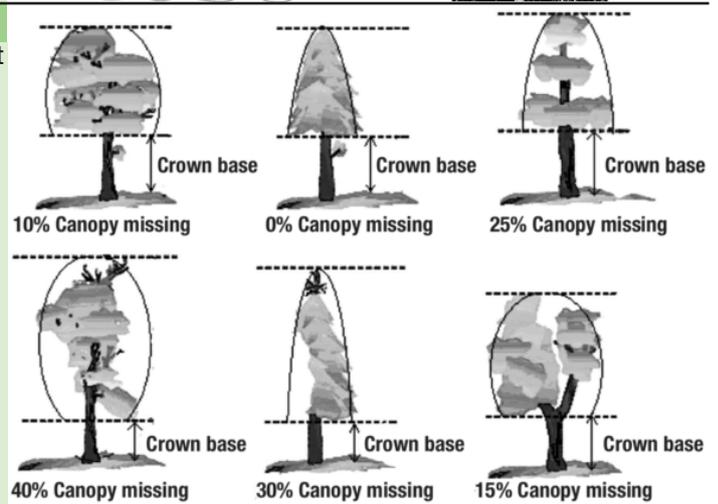
Crown Light Exposure [CLE]
Number of sides of the tree crown that receive direct light to either the top of the tree or each of its sides when the sun is directly overhead (maximum 5).

For each of the 5 sides, the side is excluded if light is obstructed by an adjacent tree's crown or a building:
• causing the overtopping of the side being viewed;
• the adjacent object is within one crown width from the measured tree's stem and is at least as tall as the tree being measured.
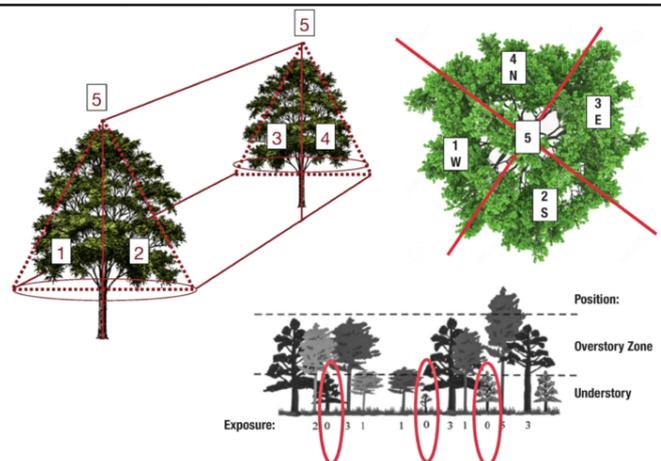
Building direction (azimuth in degrees) and distance (shortest from tree to closest part of building)
Record if tree being measured meets these conditions:
• tree height: ≥ 10' / 3m; building height: ≤ 3 stories / floors;
• building is within 60' / 18.3m of tree being measured, heated and / or air-conditioned; residential (multi-occupancy treated as one building)