

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 $\geq 1'' / 2.54\text{cm}$.
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.

* March 2021

Parameters based on i-Tree Eco Field Manual version 6

DBH Measurement

• Height DBH

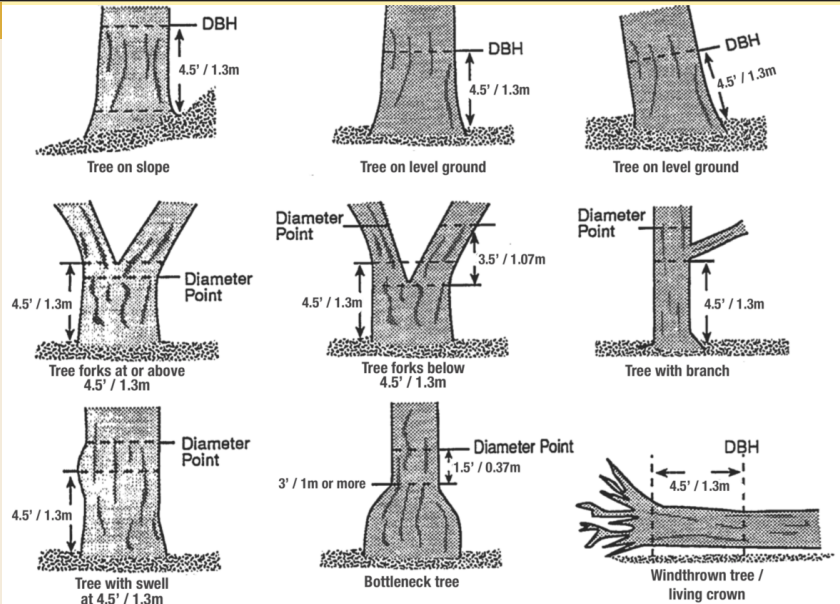
Height at which stem diameter is measured:
4.5' / 1.3m above planting grade

• DBH

Stem diameter measurement using a diameter tape

• DBH Special Cases

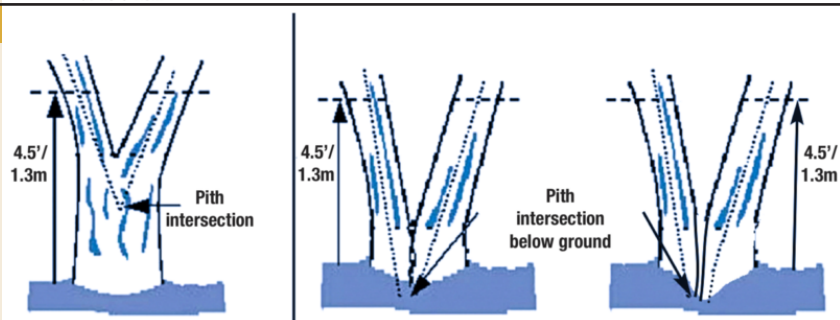
as per the illustration.



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

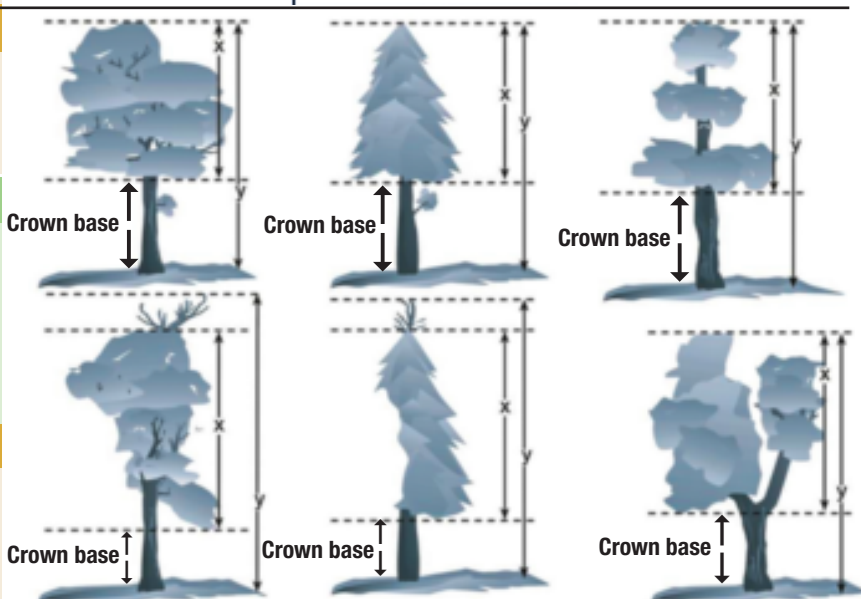
Measured from planting grade / ground to the top of the tree, alive or dead (per upper end of line Y in illustration),

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),

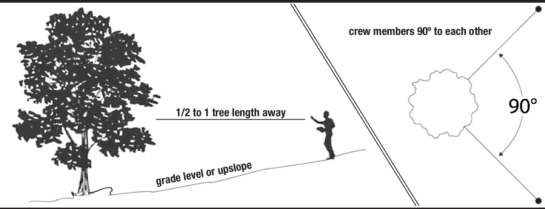
Height to Crown Base

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



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:

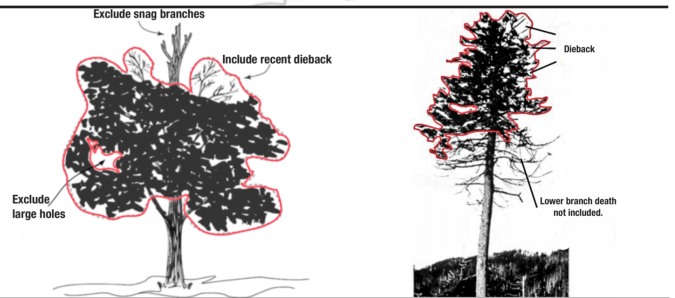
- north-south, east-west
- record dead trees as -1



Crown 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

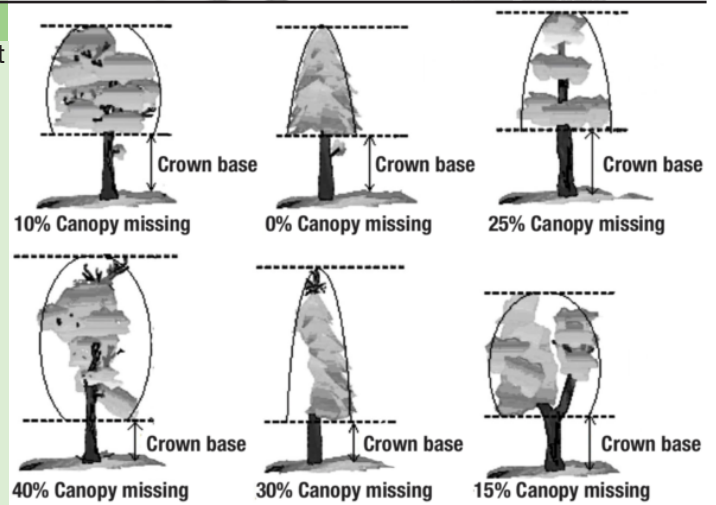


Percent Crown Missing

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.

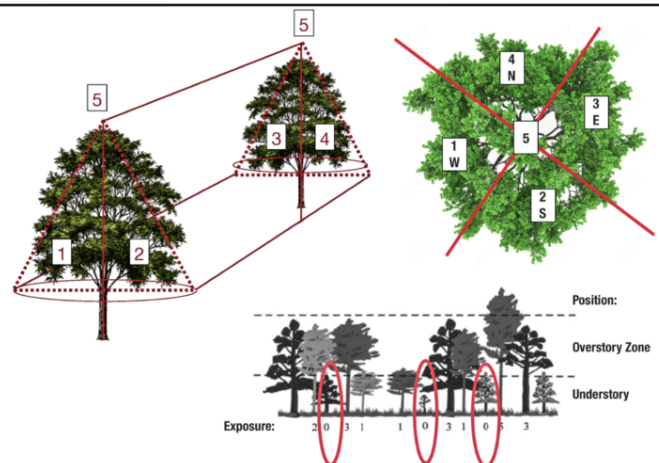


Crown Light Exposure [CLE]

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: $\geq 20'$ / 6.1m; building height: ≤ 3 floors / stories;
- building is within $60'$ / 18.3m of tree being measured, heated and / or air-conditioned; residential (multi-occupancy treated as one building)