



Town of Yarrow Point

DSH Measurement Guidelines

Private Property Tree Code

Last Updated: 7-2-2024

Introduction

Tree diameter is usually measured at 4.5 feet (ft) above ground level. Measurement at this height is referred to as diameter at standard height (DSH). DSH can be measured with a specially calibrated tape measure called a diameter tape, with a tree caliper of an adequate size, or by calculating the diameter after measuring the circumference

(Diameter = Circumference divided by π)

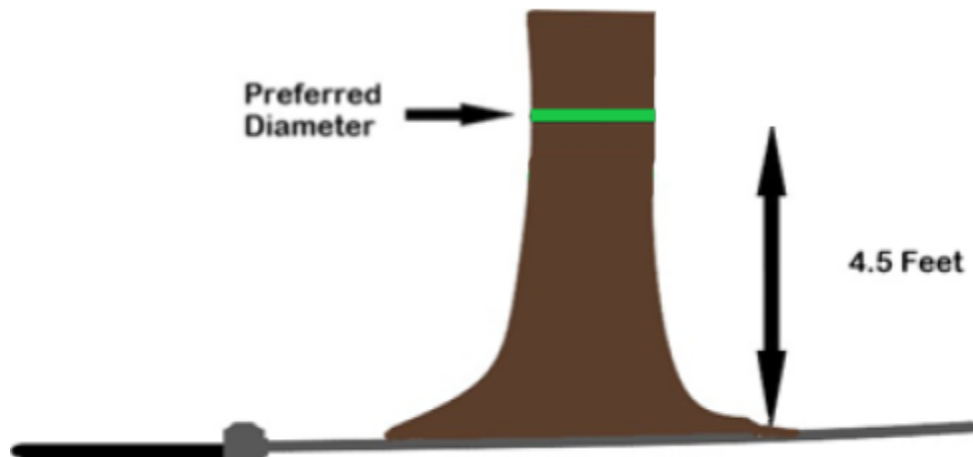
For a tree with a single gradually tapering trunk, measuring DSH is straightforward, but there are several circumstances in which questions arise about how to measure DSH.

This guide can be used to solve some of the more common complications when measuring a tree's DSH. These are the simplest and most widely accepted methods recommended in other sources such as the US Forest Service (USFS), International Society of Arboriculture (ISA) and the Federal Emergency Management Administration (FEMA).

The Following conditions are shown below:

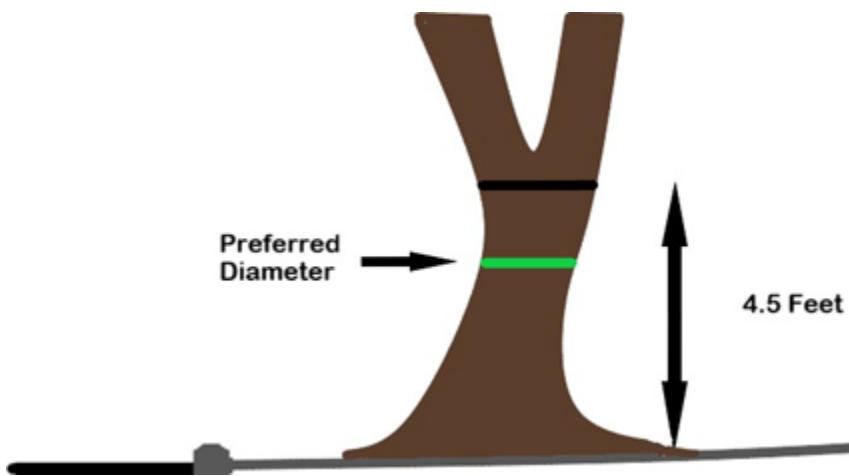
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Single Gradually Tapering Trunk



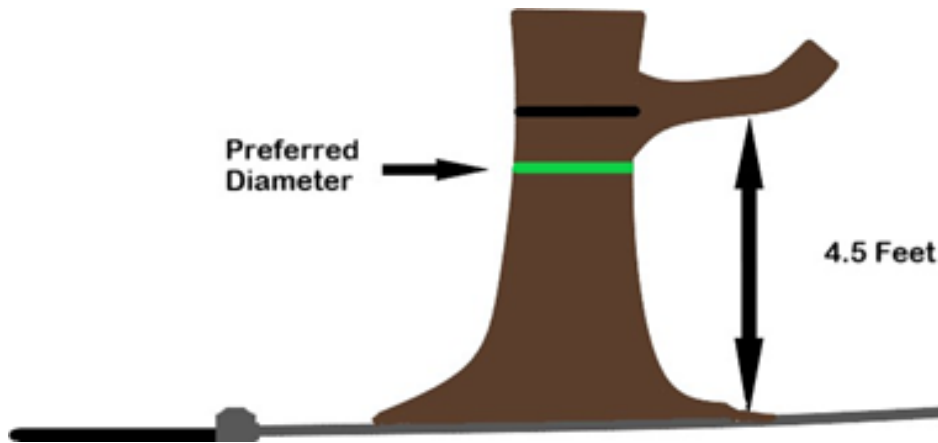
For regular single trunks that gradually taper measure the diameter at 4.5 feet above the ground (DSH).

Abnormal Trunk Taper



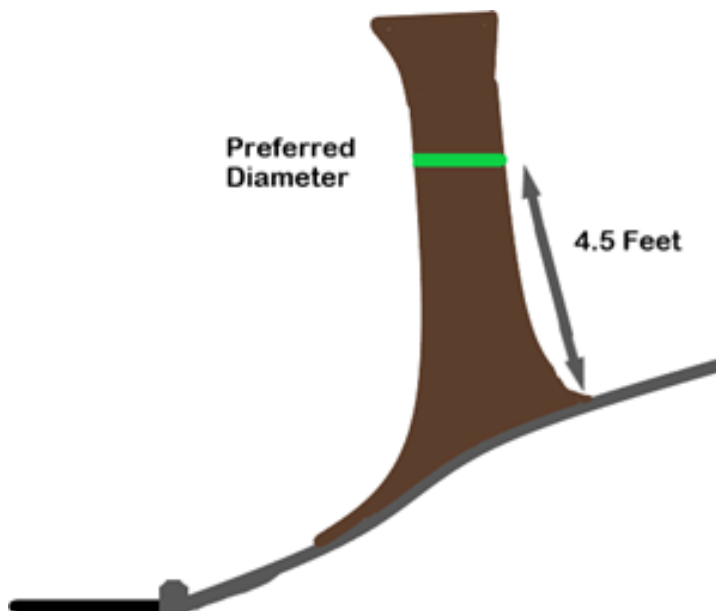
The tree tapers in such a way that the diameter at a point below 4.5 ft is actually smaller than the diameter at 4.5 ft. Measure the diameter at the smallest point and record the height at which diameter was measured on the data sheet.

Branches and Irregularities at DSH



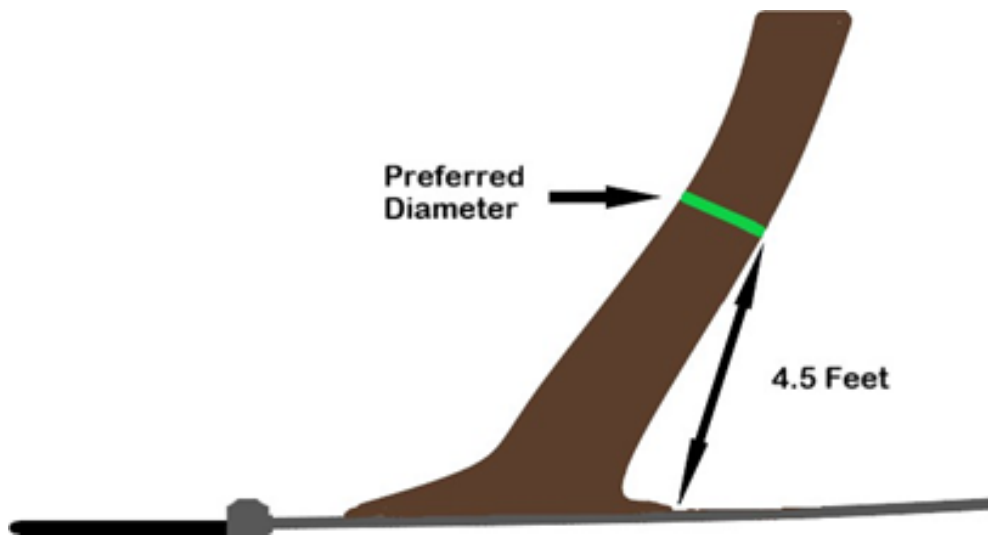
Tree has branches or irregularities which interfere with DSH measurement. Measure DSH below the branch or bump. The goal is to measure the diameter that would be closest to the expected DSH if branches or other irregularities were not present. Record the height at which the diameter was measured.

Trees on Slopes



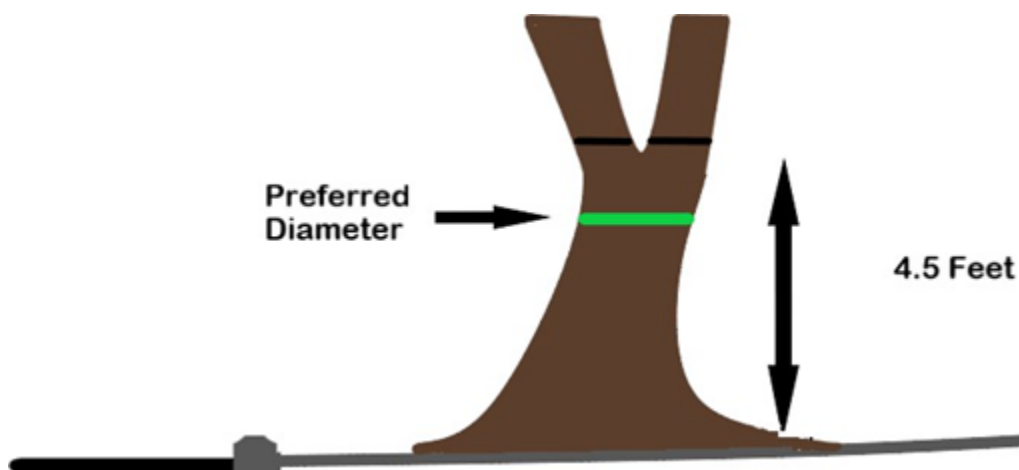
When measuring trees on slopes, measure the diameter 4.5 ft from the ground on the upper side of the slope.

Trees with a Lean



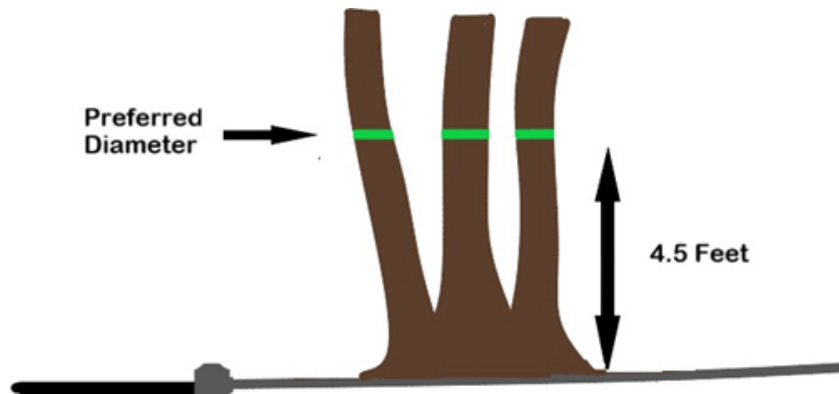
Trees that are leaning should be measured 4.5 ft up the stem in the direction of the lean.

Trees with Forks at or below DSH



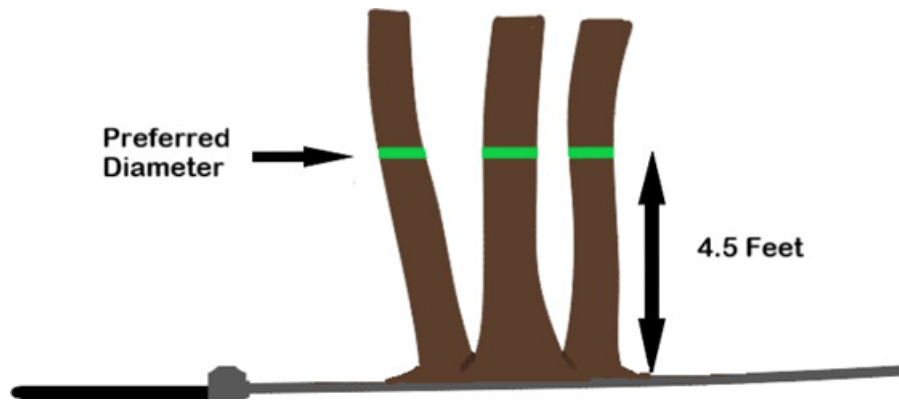
Trees that fork below DSH or near DSH should be measured at the narrowest part of the main stem below the fork. The height of the DSH measurement and the fork should be noted (e.g., 3 ft diameter @ 2 ft [Forks @ 4 ft]).

Multi-Stem Trees - At or Above 6" of Ground



For trees that split into several trunks higher than 6" above ground level, measure the DSH of each trunk and find the average number. $(5+6+8) / 3 = 6"$. It should be noted in the comments that it is a multi-stem tree.

Multi-Stem Trees - Within 6" of Ground



Trees that fork at or within 6" of grade are treated as separate or individual trees. This method is consistent with the USFS and FEMA. It should be noted in the comments that they are part of a cluster.

Quick Reference: Circumference to Diameter Conversion

Circumference in Inches	Diameter in Inches	Circumference in Inches	Diameter in Inches
37.7	12	138.2	44
40.8	13	141.4	45
44.0	14	144.5	46
47.1	15	147.7	47
50.3	16	150.8	48
53.4	17	153.9	49
56.5	18	157.1	50
59.7	19	160.2	51
62.8	20	163.4	52
66.0	21	166.5	53
69.1	22	169.6	54
72.3	23	172.8	55
75.4	24	175.9	56
78.5	25	179.1	57
81.7	26	182.2	58
84.8	27	185.4	59
88.0	28	188.5	60
91.1	29	191.6	61
94.2	30	194.8	62
97.4	31	197.9	63
100.5	32	201.1	64
103.7	33	204.2	65
106.8	34	207.3	66
110.0	35	210.5	67
113.1	36	213.6	68
116.2	37	216.8	69
119.4	38	219.9	70
122.5	39	223.1	71
125.7	40	226.2	72
128.8	41	229.3	73
131.9	42	232.5	74
135.1	43	235.6	75