How to Calculate Co-Champion Trees

If the largest trees of a species are under 100 total points trees will be crowned Co-Champion Trees if they are within 3 total points of each other.

Here is an example:

ID #	Tree Status	Scientific Name	Last Verified	Circumference	Height	Crown Spread	Total Points
5002	Co-Champion	*Cornus foemina*	2011	31 in.	21 ft.	18 ft.	57
4562	Co-Champion	*Cornus foemina*	2009	30 in.	23 ft.	22 ft.	59

The largest tree of *Cornus foemina* nominated to the National Register of Champion Trees has 59 total points. To determine Co-Champion Trees we take the largest tree's total points and subtract 3.

59 – 3 = 56 Total Points

In this example, Co-Champion Trees must be greater than or equal to 56 total points.

$$x - y \leq 3$$

If the largest trees of a species are over 100 points, they will be Co-Champions Trees if the differential between them is no more than 3% of the larger tree's total points.

Here is an example:

ID #	Tree Status	Scientific Name	Last Verified	Circumference	Height	Crown Spread	Total Points
5452	Co-Champion	*Picea pungens*	2013	152 in.	154 ft.	37 ft.	315
5571	Co-Champion	*Picea pungens*	2014	155 in.	155 ft.	33 ft.	319
3383	Co-Champion	*Picea pungens*	2011	192 in.	122 ft.	35 ft.	323

The largest tree of *Picea pungens* nominated to the National Register of Champion Trees has 323 total points (rounded).

x = The smaller tree's total points

y = The largest tree's total points

$$\frac{x}{y} \geq 0.97$$

In this example, we take the smaller tree's number of total points and divide it by the largest tree's number of total points.

$$319/323 = 0.988$$

$$315/323 = 0.975$$

Since tree #5452 and tree #5571 are with within 97% of the largest tree's total points we know that they can be crowned Co-Champion trees with tree #3383 for species *Picea pungens*.

Here is another way we can calculate Co-Champion Trees over 100 points:

First, we calculate 3% of the largest tree's total points.

X = The percentage

Y = The largest tree's total points

Z = The percentage of the largest tree's total points

X/100 x Y/1 = Z

X = 3%

Y = 323

Z = 3% of 323

3/100 x 323/1 = 969/100 = 9.69

Three percent of 323 is 9.69.

Next, we subtract 3% from the largest tree's total points.

X = The percentage

Y = The largest tree's total points

Z = The minimum total points a tree needs to be crowned a Co-Champion Tree

X – Y = Z

323 – 9.69 = 313.31

Now we know that any tree that is 313.31 total points or more can be crowned a Co-Champion Tree for species *Picea pungens*.

Multiple Co-Champion Trees per species are permitted so long as the Co-Champions are all within 3 points or 3% of the largest tree's number of total points.