



## QUICK GUIDE TO FIELD PROCEDURES

This quick guide to field procedures will remind you of the steps you should follow to use the growth intercept method in a silviculture survey. Complete instructions on using the growth intercept method are provided in the report *How to Determine Site Index* available from the Stand Development Specialist, Forest Practices Branch, Victoria, B.C. (Tel) 250-356-0305 (FAX) 250-387-2136.

To use the growth intercept method to estimate site index for each stratum in an opening, follow these four steps.

1. Pre-stratify the opening:

See the Forest Practices Branch manual *How to Determine Site Index* for details.

2. For each stratum, select the site index species:

Use the leading species (inventory component) as the site index species. See the Forest Practices Branch manual *How to Determine Site Index* for more details.

3. In each stratum, collect growth intercept measurements:

- a. Establish one growth intercept plot per hectare to a maximum of 10 plots per stratum. A sample grid is recommended to achieve uniform coverage of the entire stratum area. Use a plot radius of 5.64 m.
- b. Select one growth intercept sample tree from each plot. Sample tree should have the following characteristics:

<b>Species</b>	Western larch
<b>DBH</b>	largest DBH western larch
<b>Stem condition</b>	undamaged stem vigorous, uniform annual height growth above breast height
<b>Crown position</b>	dominant or co-dominant crown class not overtopped by trees or brush
<b>Ring width</b>	vigorous, uniform ring widths from pith to bark

c. On each growth intercept sample tree:

- locate breast height (1.3 m above ground level);
- measure total tree height (m);
- determine age at breast height; and
- on the field sheet, record species, total height, and breast height age.

## GROWTH INTERCEPT TABLE

Species: Western larch (Lw)

Region: Interior B.C.

Source: Nigh et al. 1999

Breast height age (yr)	Site index (m)												
	5	6	7	8	9	10	11	12	13	14	15	16	17
	Tree total height (m)												
3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.7	1.8	1.9
4	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.7	1.8	1.9	2.0	2.2
5	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.4
6	1.3	1.4	1.4	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.3	2.5	2.7
7	1.4	1.4	1.5	1.5	1.6	1.7	1.8	2.0	2.2	2.3	2.6	2.8	3.1
8	1.4	1.4	1.5	1.6	1.7	1.8	2.0	2.1	2.3	2.5	2.8	3.1	3.4
9	1.4	1.4	1.5	1.6	1.8	1.9	2.1	2.3	2.5	2.8	3.0	3.3	3.7
10	1.4	1.5	1.6	1.7	1.9	2.0	2.2	2.5	2.7	3.0	3.3	3.7	4.0
11	1.5	1.6	1.7	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	4.0	4.4
12	1.5	1.6	1.8	1.9	2.1	2.4	2.6	2.9	3.2	3.6	3.9	4.3	4.7
13	1.6	1.7	1.9	2.1	2.3	2.6	2.9	3.2	3.5	3.9	4.3	4.7	5.1
14	1.6	1.8	2.0	2.2	2.5	2.8	3.1	3.4	3.8	4.2	4.6	5.0	5.5
15	1.7	1.9	2.1	2.3	2.6	2.9	3.3	3.7	4.0	4.5	4.9	5.4	5.9
16	1.7	2.0	2.2	2.5	2.8	3.1	3.5	3.9	4.3	4.8	5.2	5.7	6.2
17	1.8	2.1	2.3	2.6	3.0	3.3	3.7	4.2	4.6	5.1	5.6	6.1	6.6
18	1.9	2.2	2.5	2.8	3.2	3.6	4.0	4.4	4.9	5.4	5.9	6.4	7.0
19	2.0	2.3	2.6	2.9	3.3	3.8	4.2	4.7	5.1	5.7	6.2	6.8	7.3
20	2.0	2.4	2.7	3.1	3.5	3.9	4.4	4.9	5.4	6.0	6.5	7.1	7.7
21	2.1	2.5	2.8	3.2	3.7	4.1	4.6	5.2	5.7	6.2	6.8	7.4	8.0
22	2.2	2.6	3.0	3.4	3.9	4.4	4.9	5.4	6.0	6.5	7.1	7.8	8.4
23	2.3	2.7	3.1	3.6	4.0	4.5	5.1	5.6	6.2	6.8	7.4	8.1	8.7
24	2.4	2.8	3.2	3.7	4.2	4.7	5.3	5.9	6.5	7.1	7.7	8.4	9.1
25	2.4	2.9	3.3	3.9	4.4	4.9	5.5	6.1	6.7	7.4	8.0	8.7	9.4
26	2.5	3.0	3.5	4.0	4.5	5.1	5.7	6.3	7.0	7.6	8.3	9.0	9.7
27	2.6	3.1	3.6	4.2	4.7	5.3	6.0	6.6	7.3	7.9	8.6	9.3	10.1
28	2.7	3.2	3.8	4.3	4.9	5.6	6.2	6.9	7.5	8.2	8.9	9.7	10.4
29	2.8	3.3	3.9	4.5	5.1	5.8	6.4	7.1	7.8	8.5	9.2	10.0	10.7
30	2.9	3.5	4.1	4.7	5.3	6.0	6.7	7.4	8.1	8.8	9.5	10.3	11.1

How to use the table to get a site index estimate from measured height and age.

Step 1: Look down the breast height age column to find the row corresponding to the breast height age of your sample tree.

Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

Step 3: Look up the column to find the site index estimated by sample tree height and age.

## GROWTH INTERCEPT TABLE

**Species:** Western larch (Lw)

**Region:** Interior B.C.

**Source:** Nigh et al. 1999

Breast height age (yr)	Site index (m)												
	18	19	20	21	22	23	24	25	26	27	28	29	30
	<b>Tree total height (m)</b>												
3	2.0	2.2	2.3	2.5	2.7	3.0	3.2	3.5	3.9	4.2	4.6	5.0	5.4
4	2.3	2.5	2.7	3.0	3.2	3.5	3.9	4.2	4.6	5.0	5.4	5.9	6.4
5	2.6	2.9	3.1	3.4	3.7	4.1	4.4	4.8	5.3	5.7	6.2	6.8	7.3
6	3.0	3.2	3.5	3.9	4.2	4.6	5.0	5.5	6.0	6.5	7.1	7.7	8.3
7	3.3	3.6	4.0	4.3	4.7	5.1	5.6	6.0	6.5	7.1	7.6	8.2	8.8
8	3.7	4.0	4.4	4.8	5.3	5.7	6.2	6.7	7.3	7.9	8.5	9.2	9.9
9	4.0	4.4	4.9	5.3	5.8	6.3	6.8	7.4	8.0	8.7	9.3	10.1	10.8
10	4.4	4.8	5.3	5.8	6.3	6.8	7.4	8.0	8.6	9.3	10.0	10.7	11.5
11	4.8	5.3	5.7	6.2	6.8	7.3	7.9	8.5	9.2	9.9	10.6	11.3	12.1
12	5.2	5.7	6.2	6.7	7.2	7.8	8.4	9.1	9.7	10.4	11.1	11.8	12.6
13	5.6	6.1	6.6	7.1	7.7	8.3	8.9	9.5	10.2	10.9	11.6	12.3	13.1
14	6.0	6.5	7.0	7.6	8.2	8.8	9.4	10.1	10.7	11.4	12.1	12.9	13.6
15	6.4	6.9	7.5	8.1	8.7	9.3	9.9	10.6	11.3	12.0	12.7	13.5	14.2
16	6.8	7.3	7.9	8.5	9.1	9.8	10.4	11.1	11.8	12.5	13.3	14.0	14.8
17	7.2	7.7	8.3	9.0	9.6	10.3	10.9	11.6	12.3	13.1	13.8	14.6	15.4
18	7.5	8.1	8.8	9.4	10.0	10.7	11.4	12.1	12.8	13.5	14.3	15.1	15.8
19	7.9	8.5	9.2	9.8	10.5	11.2	11.9	12.6	13.3	14.1	14.8	15.6	16.4
20	8.3	8.9	9.6	10.3	10.9	11.6	12.4	13.1	13.9	14.6	15.4	16.2	17.0
21	8.7	9.3	10.0	10.7	11.4	12.1	12.9	13.6	14.4	15.2	16.0	16.8	17.6
22	9.1	9.7	10.4	11.1	11.8	12.6	13.3	14.1	14.9	15.7	16.5	17.3	18.1
23	9.4	10.1	10.8	11.5	12.3	13.0	13.8	14.6	15.4	16.2	17.0	17.8	18.7
24	9.8	10.5	11.2	11.9	12.7	13.5	14.2	15.0	15.8	16.7	17.5	18.3	19.2
25	10.1	10.9	11.6	12.3	13.1	13.9	14.7	15.5	16.3	17.2	18.0	18.9	19.7
26	10.5	11.2	12.0	12.7	13.5	14.3	15.1	16.0	16.8	17.6	18.5	19.4	20.3
27	10.8	11.6	12.4	13.1	13.9	14.8	15.6	16.4	17.3	18.1	19.0	19.9	20.7
28	11.2	11.9	12.7	13.5	14.3	15.1	16.0	16.8	17.7	18.5	19.4	20.3	21.2
29	11.5	12.3	13.1	13.9	14.7	15.5	16.4	17.2	18.1	18.9	19.8	20.7	21.6
30	11.9	12.7	13.5	14.3	15.1	16.0	16.8	17.7	18.5	19.4	20.3	21.2	22.1

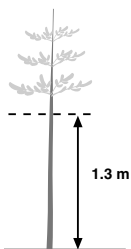
How to use the table to get a site index estimate from measured height and age.

Step 1: Look down the breast height age column to find the row corresponding to the breast height age of your sample tree.

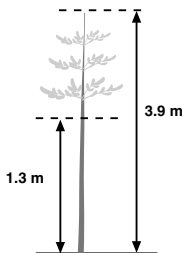
Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

Step 3: Look up the column to find the site index estimated by sample tree height and age.

**Step 1:** Locate breast height

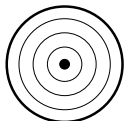


**Step 2:** Measure total height



**Step 3:** Determine breast height age by one of two methods

**1. fell tree and count rings**



4 years old

**2. count rings on increment core**



4 years old

**Step 4:** Record species, height, and age on field card

Plot no.	Species	Total height (m)	Breast height age (yr)
1	Lw	3.9	4

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