



Species: Western hemlock (Hw)

Region: Coastal B.C.

Source: G. Nigh, 1995c

## 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 *Growth Intercept Method for Silviculture Surveys* available from the Stand Development Forester, Silviculture Practices Branch, Victoria, B.C. (Tel) 387-1191 (FAX) 387-1467.

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 Silviculture Practices Branch manual *Growth Intercept Method for Silviculture Surveys* for details.

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

Use the leading species (inventory component) as the site index species. See the Silviculture Practices Branch manual *Growth Intercept Method for Silviculture Surveys* 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>	site index species
<b>Age</b>	3- to 30-years growth above breast height
<b>DBH</b>	largest DBH
<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 hemlock (Hw)

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Breast height age (yr)	Site index (m)															
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Tree total height (m)															
3	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.2	2.2	2.3
4	1.5	1.6	1.6	1.7	1.7	1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.1
6	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.6	2.7	2.8	3.0	3.1	3.2	3.4	3.5
7	1.9	2.0	2.1	2.2	2.3	2.4	2.6	2.7	2.8	3.0	3.1	3.3	3.5	3.6	3.8	4.0
8	2.0	2.1	2.2	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.5	3.7	3.8	4.0	4.2	4.4
9	2.1	2.3	2.4	2.6	2.7	2.9	3.1	3.3	3.4	3.6	3.8	4.1	4.3	4.5	4.7	4.9
10	2.3	2.5	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.5	4.7	5.0	5.2	5.5
11	2.5	2.7	2.8	3.0	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.9	5.2	5.5	5.7	6.0
12	2.7	2.9	3.1	3.3	3.5	3.8	4.0	4.3	4.6	4.8	5.1	5.4	5.7	6.0	6.3	6.6
13	2.8	3.1	3.3	3.6	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.9	7.2
14	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.6	6.0	6.3	6.7	7.0	7.4	7.7
15	3.2	3.4	3.7	4.0	4.3	4.6	5.0	5.3	5.6	6.0	6.4	6.7	7.1	7.5	7.9	8.3
16	3.3	3.6	3.9	4.2	4.6	4.9	5.3	5.6	6.0	6.4	6.7	7.1	7.5	7.9	8.4	8.8
17	3.5	3.8	4.1	4.5	4.8	5.2	5.6	5.9	6.3	6.7	7.1	7.6	8.0	8.4	8.9	9.3
18	3.7	4.0	4.3	4.7	5.1	5.5	5.9	6.3	6.7	7.1	7.6	8.0	8.5	8.9	9.4	9.9
19	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.1	7.5	8.0	8.5	9.0	9.4	9.9	10.4
20	4.0	4.4	4.8	5.2	5.7	6.1	6.6	7.0	7.5	8.0	8.4	8.9	9.4	10.0	10.5	11.0
21	4.2	4.6	5.1	5.5	6.0	6.4	6.9	7.4	7.9	8.4	8.9	9.4	9.9	10.5	11.0	11.6
22	4.4	4.9	5.3	5.8	6.2	6.7	7.2	7.7	8.2	8.8	9.3	9.9	10.4	11.0	11.6	12.1
23	4.6	5.1	5.6	6.0	6.5	7.0	7.6	8.1	8.6	9.2	9.8	10.3	10.9	11.5	12.1	12.7
24	4.8	5.3	5.8	6.3	6.8	7.4	7.9	8.4	9.0	9.6	10.2	10.8	11.4	12.0	12.6	13.2
25	5.0	5.5	6.0	6.6	7.1	7.7	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.5	13.1	13.8
26	5.2	5.8	6.3	6.9	7.4	8.0	8.6	9.2	9.8	10.4	11.0	11.7	12.3	13.0	13.6	14.3
27	5.5	6.1	6.6	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.5	12.1	12.8	13.5	14.2	14.8
28	5.7	6.3	6.9	7.5	8.1	8.7	9.3	10.0	10.6	11.3	11.9	12.6	13.3	14.0	14.7	15.4
29	6.0	6.6	7.2	7.8	8.4	9.1	9.7	10.4	11.0	11.7	12.4	13.1	13.8	14.5	15.2	15.9
30	6.3	6.9	7.5	8.1	8.8	9.4	10.1	10.7	11.4	12.1	12.8	13.5	14.2	14.9	15.7	16.4

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 hemlock (Hw)

Region: Coastal B.C.

Source: G. Nigh, 1995c

Breast height age (yr)	Site index (m)														
	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	Tree total height (m)														
3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.6	3.7	3.8	3.9
4	2.8	2.9	3.1	3.2	3.3	3.4	3.6	3.7	3.9	4.0	4.2	4.3	4.5	4.7	4.8
5	3.2	3.4	3.5	3.7	3.8	4.0	4.2	4.3	4.5	4.7	4.8	5.0	5.2	5.4	5.6
6	3.7	3.9	4.0	4.2	4.4	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3
7	4.2	4.3	4.5	4.7	4.9	5.1	5.3	5.6	5.8	6.0	6.2	6.4	6.7	6.9	7.2
8	4.7	4.9	5.1	5.3	5.6	5.8	6.0	6.3	6.5	6.8	7.0	7.3	7.6	7.9	8.1
9	5.2	5.4	5.7	5.9	6.2	6.5	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1
10	5.8	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.4	9.7	10.1
11	6.3	6.6	6.9	7.2	7.6	7.9	8.2	8.5	8.9	9.2	9.6	9.9	10.3	10.6	11.0
12	6.9	7.3	7.6	7.9	8.3	8.6	9.0	9.4	9.7	10.1	10.5	10.9	11.2	11.6	12.0
13	7.6	7.9	8.3	8.6	9.0	9.4	9.8	10.2	10.6	11.0	11.4	11.8	12.2	12.6	13.0
14	8.1	8.5	8.9	9.3	9.7	10.1	10.5	10.9	11.4	11.8	12.2	12.7	13.1	13.6	14.0
15	8.7	9.1	9.5	9.9	10.4	10.8	11.2	11.7	12.1	12.6	13.1	13.5	14.0	14.5	15.0
16	9.2	9.7	10.1	10.6	11.0	11.5	12.0	12.4	12.9	13.4	13.9	14.4	14.9	15.5	16.0
17	9.8	10.2	10.7	11.2	11.7	12.2	12.7	13.2	13.7	14.2	14.8	15.3	15.8	16.4	16.9
18	10.4	10.8	11.4	11.9	12.4	12.9	13.4	14.0	14.5	15.1	15.6	16.2	16.7	17.3	17.9
19	11.0	11.5	12.0	12.5	13.1	13.6	14.2	14.8	15.3	15.9	16.5	17.1	17.7	18.3	18.9
20	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.1	16.7	17.4	18.0	18.6	19.2	19.9
21	12.1	12.7	13.3	13.9	14.5	15.1	15.7	16.3	16.9	17.6	18.2	18.8	19.5	20.2	20.8
22	12.7	13.3	13.9	14.5	15.2	15.8	16.4	17.1	17.7	18.4	19.1	19.7	20.4	21.1	21.8
23	13.3	13.9	14.6	15.2	15.9	16.5	17.2	17.8	18.5	19.2	19.9	20.6	21.3	22.0	22.7
24	13.9	14.5	15.2	15.9	16.5	17.2	17.9	18.6	19.3	20.0	20.7	21.4	22.2	22.9	23.6
25	14.4	15.1	15.8	16.5	17.2	17.9	18.6	19.3	20.0	20.8	21.5	22.2	23.0	23.7	24.5
26	15.0	15.7	16.4	17.1	17.8	18.5	19.2	19.9	20.7	21.4	22.2	22.9	23.7	24.5	25.2
27	15.5	16.2	16.9	17.7	18.4	19.1	19.8	20.6	21.3	22.1	22.9	23.6	24.4	25.2	26.0
28	16.1	16.8	17.5	18.2	19.0	19.7	20.5	21.2	22.0	22.8	23.5	24.3	25.1	25.9	26.7
29	16.6	17.3	18.1	18.8	19.6	20.3	21.1	21.9	22.6	23.4	24.2	25.0	25.8	26.6	27.4
30	17.1	17.9	18.6	19.4	20.1	20.9	21.7	22.4	23.2	24.0	24.8	25.6	26.4	27.2	28.0

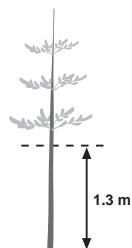
How to use the table to get a site index estimate from measured height and age.

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

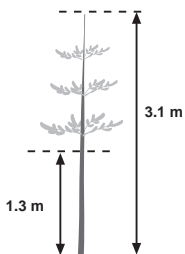
Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

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	Hw	3.1	4

4. For each stratum, calculate the average site index:

- For each sample tree, look up site index in the Growth Intercept Table based on total height and breast height age; and
- Average the site index values from all plots in the stratum.