



Species: Sitka spruce (Ss)

Region: Coastal B.C.

Source: G. Nigh, 1996a

## 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>	Sitka spruce
<b>Age</b>	3- to 30-years growth above breast height
<b>DBH</b>	largest DBH Sitka spruce
<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: Sitka spruce (Ss)

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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	2.0	2.1	2.1	2.2
4	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.2	2.2	2.3	2.4	2.5	2.6
5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
6	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.0	3.2	3.3
7	1.8	1.9	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.2	3.3	3.5	3.7
8	1.8	1.9	2.0	2.1	2.2	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.5	3.6	3.8	4.0
9	1.9	2.0	2.1	2.2	2.4	2.5	2.7	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4
10	2.0	2.1	2.2	2.4	2.5	2.7	2.9	3.0	3.2	3.4	3.7	3.9	4.1	4.4	4.6	4.9
11	2.1	2.2	2.4	2.5	2.7	2.9	3.1	3.3	3.5	3.7	4.0	4.2	4.5	4.8	5.0	5.3
12	2.2	2.3	2.5	2.7	2.9	3.1	3.3	3.6	3.8	4.1	4.3	4.6	4.9	5.2	5.5	5.8
13	2.3	2.5	2.7	2.9	3.1	3.4	3.6	3.9	4.2	4.4	4.7	5.0	5.3	5.7	6.0	6.4
14	2.5	2.7	2.9	3.2	3.4	3.7	4.0	4.2	4.5	4.8	5.2	5.5	5.8	6.2	6.6	6.9
15	2.7	2.9	3.2	3.4	3.7	4.0	4.3	4.6	4.9	5.3	5.6	6.0	6.3	6.7	7.1	7.5
16	2.9	3.2	3.4	3.7	4.0	4.3	4.7	5.0	5.4	5.7	6.1	6.5	6.9	7.3	7.7	8.1
17	3.1	3.4	3.7	4.0	4.4	4.7	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.7
18	3.3	3.7	4.0	4.3	4.7	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.9	8.3	8.8	9.2
19	3.5	3.9	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.5	7.9	8.4	8.8	9.3	9.8
20	3.8	4.1	4.5	4.9	5.3	5.7	6.1	6.6	7.0	7.5	7.9	8.4	8.9	9.4	9.9	10.4
21	4.0	4.4	4.8	5.2	5.6	6.1	6.5	7.0	7.4	7.9	8.4	8.9	9.4	9.9	10.5	11.0
22	4.3	4.7	5.1	5.5	6.0	6.4	6.9	7.4	7.9	8.4	8.9	9.4	10.0	10.5	11.0	11.6
23	4.5	5.0	5.4	5.9	6.3	6.8	7.3	7.8	8.3	8.9	9.4	9.9	10.5	11.0	11.6	12.2
24	4.8	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.8	9.3	9.9	10.4	11.0	11.6	12.2	12.8
25	5.0	5.5	6.0	6.5	7.0	7.5	8.1	8.6	9.2	9.8	10.3	10.9	11.5	12.1	12.7	13.3
26	5.2	5.7	6.2	6.8	7.3	7.8	8.4	9.0	9.6	10.2	10.8	11.4	12.0	12.6	13.2	13.9
27	5.4	5.9	6.5	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.5	13.1	13.8	14.4
28	5.6	6.2	6.7	7.3	7.9	8.5	9.1	9.7	10.3	11.0	11.6	12.3	12.9	13.6	14.3	15.0
29	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.1	10.7	11.4	12.0	12.7	13.4	14.1	14.8	15.5
30	6.0	6.6	7.2	7.8	8.5	9.1	9.7	10.4	11.1	11.8	12.4	13.1	13.8	14.6	15.3	16.0

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.

## GROWTH INTERCEPT TABLE

Species: Sitka spruce (Ss)

Region: Coastal B.C.

Source: G. Nigh, 1996a

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	2.3	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.3	3.4
4	2.7	2.8	2.8	2.9	3.0	3.1	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.2
5	3.0	3.2	3.3	3.4	3.5	3.7	3.8	3.9	4.1	4.2	4.4	4.5	4.7	4.8	5.0
6	3.4	3.6	3.7	3.9	4.0	4.2	4.4	4.5	4.7	4.9	5.1	5.2	5.4	5.6	5.8
7	3.8	4.0	4.2	4.4	4.5	4.7	4.9	5.1	5.4	5.6	5.8	6.0	6.2	6.5	6.7
8	4.2	4.4	4.6	4.9	5.1	5.3	5.6	5.8	6.1	6.3	6.6	6.9	7.1	7.4	7.7
9	4.7	4.9	5.2	5.4	5.7	6.0	6.2	6.5	6.8	7.1	7.4	7.7	8.1	8.4	8.7
10	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.6	7.9	8.3	8.6	9.0	9.4	9.8
11	5.6	5.9	6.3	6.6	6.9	7.3	7.6	8.0	8.4	8.7	9.1	9.5	10.0	10.4	10.8
12	6.2	6.5	6.8	7.2	7.6	8.0	8.3	8.7	9.1	9.6	10.0	10.4	10.9	11.3	11.8
13	6.7	7.1	7.5	7.8	8.2	8.7	9.1	9.5	9.9	10.4	10.8	11.3	11.8	12.3	12.8
14	7.3	7.7	8.1	8.5	8.9	9.4	9.8	10.3	10.7	11.2	11.7	12.2	12.7	13.2	13.7
15	7.9	8.3	8.8	9.2	9.6	10.1	10.6	11.0	11.5	12.0	12.5	13.0	13.5	14.1	14.6
16	8.5	9.0	9.4	9.9	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.9	14.4	14.9	15.5
17	9.1	9.6	10.1	10.5	11.0	11.5	12.0	12.6	13.1	13.6	14.1	14.7	15.2	15.8	16.4
18	9.7	10.2	10.7	11.2	11.7	12.2	12.8	13.3	13.8	14.4	15.0	15.5	16.1	16.7	17.3
19	10.3	10.8	11.3	11.9	12.4	12.9	13.5	14.1	14.6	15.2	15.8	16.4	17.0	17.6	18.2
20	10.9	11.5	12.0	12.5	13.1	13.7	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4	19.1
21	11.5	12.1	12.6	13.2	13.8	14.4	15.0	15.6	16.2	16.8	17.4	18.0	18.7	19.3	19.9
22	12.2	12.7	13.3	13.9	14.5	15.1	15.7	16.3	16.9	17.6	18.2	18.9	19.5	20.2	20.8
23	12.8	13.4	14.0	14.6	15.2	15.8	16.4	17.1	17.7	18.3	19.0	19.6	20.3	21.0	21.7
24	13.4	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.5	19.1	19.8	20.5	21.1	21.8	22.5
25	14.0	14.6	15.2	15.9	16.5	17.2	17.9	18.5	19.2	19.9	20.6	21.3	22.0	22.7	23.4
26	14.5	15.2	15.8	16.5	17.2	17.9	18.6	19.3	20.0	20.7	21.4	22.1	22.8	23.5	24.3
27	15.1	15.8	16.5	17.2	17.9	18.6	19.3	20.0	20.7	21.4	22.2	22.9	23.7	24.4	25.2
28	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	26.0
29	16.2	16.9	17.6	18.4	19.1	19.8	20.6	21.3	22.1	22.9	23.6	24.4	25.2	26.0	26.8
30	16.7	17.5	18.2	19.0	19.7	20.5	21.3	22.1	22.8	23.6	24.4	25.2	26.0	26.8	27.7

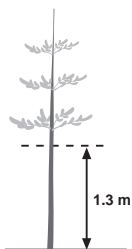
How to use the table to get a site index estimate from measured height and age.

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

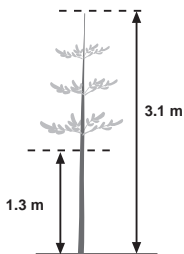
Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

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	Ss	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.