



Species: Lodgepole pine (PI)

Region: Interior B.C.

Source: G. Nigh, 1996d

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 Specialist, Forest Practices Branch, Victoria, B.C. (Tel) 250-387-1191 (FAX) 250-387-1467.

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:

Species	Lodgepole pine
DBH	largest DBH lodgepole pine
Stem condition	undamaged stem vigorous, uniform annual height growth above breast height
Crown position	dominant or co-dominant crown class not overtopped by trees or brush
Ring width	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: Lodgepole pine (PI)

Region: Interior B.C.

Source: G. Nigh, 1996d

Breast height age (yr)	Site index (m)															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Tree total height (m)															
3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.4
4	1.4	1.4	1.5	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.5	2.6	2.8	2.9
5	1.4	1.5	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.7	2.8	3.0	3.2	3.4
6	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.7	3.9
7	1.5	1.5	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.8	3.1	3.3	3.6	3.8	4.1	4.4
8	1.5	1.6	1.7	1.9	2.0	2.2	2.4	2.6	2.9	3.1	3.4	3.7	4.0	4.3	4.6	4.9
9	1.5	1.7	1.8	2.0	2.2	2.4	2.6	2.9	3.1	3.4	3.7	4.0	4.3	4.7	5.0	5.4
10	1.6	1.7	1.9	2.1	2.3	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.7	5.1	5.5	5.9
11	1.6	1.8	2.0	2.2	2.5	2.7	3.0	3.3	3.6	4.0	4.3	4.7	5.1	5.5	5.9	6.4
12	1.7	1.9	2.1	2.3	2.6	2.9	3.2	3.5	3.9	4.3	4.6	5.0	5.5	5.9	6.4	6.8
13	1.7	2.0	2.2	2.5	2.7	3.1	3.4	3.8	4.1	4.5	4.9	5.4	5.8	6.3	6.8	7.3
14	1.8	2.0	2.3	2.6	2.9	3.2	3.6	4.0	4.4	4.8	5.3	5.7	6.2	6.7	7.2	7.7
15	1.9	2.1	2.4	2.7	3.1	3.4	3.8	4.2	4.6	5.1	5.6	6.0	6.6	7.1	7.6	8.2
16	1.9	2.2	2.5	2.8	3.2	3.6	4.0	4.4	4.9	5.4	5.9	6.4	6.9	7.5	8.0	8.6
17	2.0	2.3	2.6	3.0	3.4	3.8	4.2	4.7	5.2	5.7	6.2	6.7	7.3	7.9	8.5	9.1
18	2.1	2.4	2.8	3.1	3.6	4.0	4.5	4.9	5.4	6.0	6.5	7.1	7.6	8.2	8.9	9.5
19	2.2	2.5	2.9	3.3	3.7	4.2	4.7	5.2	5.7	6.3	6.8	7.4	8.0	8.6	9.3	9.9
20	2.2	2.6	3.0	3.4	3.9	4.4	4.9	5.4	6.0	6.6	7.1	7.8	8.4	9.0	9.7	10.3
21	2.3	2.7	3.1	3.6	4.1	4.6	5.1	5.7	6.2	6.8	7.5	8.1	8.7	9.4	10.1	10.8
22	2.4	2.8	3.3	3.7	4.2	4.8	5.3	5.9	6.5	7.1	7.8	8.4	9.1	9.8	10.4	11.2
23	2.5	2.9	3.4	3.9	4.4	5.0	5.6	6.2	6.8	7.4	8.1	8.7	9.4	10.1	10.8	11.6
24	2.5	3.0	3.5	4.0	4.6	5.2	5.8	6.4	7.0	7.7	8.3	9.0	9.7	10.5	11.2	11.9
25	2.6	3.1	3.7	4.2	4.8	5.4	6.0	6.6	7.3	8.0	8.7	9.4	10.1	10.8	11.6	12.3
26	2.7	3.2	3.8	4.4	5.0	5.6	6.2	6.9	7.6	8.2	9.0	9.7	10.4	11.2	11.9	12.7
27	2.8	3.4	3.9	4.5	5.2	5.8	6.5	7.1	7.8	8.5	9.3	10.0	10.7	11.5	12.3	13.1
28	2.9	3.5	4.1	4.7	5.4	6.0	6.7	7.4	8.1	8.8	9.6	10.3	11.1	11.8	12.6	13.4
29	3.0	3.6	4.2	4.9	5.5	6.2	6.9	7.6	8.4	9.1	9.8	10.6	11.4	12.2	13.0	13.8
30	3.1	3.8	4.4	5.1	5.7	6.4	7.1	7.9	8.6	9.4	10.1	10.9	11.7	12.5	13.3	14.1

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: Lodgepole pine (PI)

Region: Interior B.C.

Source: G. Nigh, 1996d

Breast height age (yr)	Site index (m)														
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	Tree total height (m)														
3	2.6	2.7	2.8	3.0	3.1	3.3	3.4	3.6	3.8	3.9	4.1	4.3	4.5	4.7	4.9
4	3.1	3.3	3.5	3.6	3.8	4.1	4.3	4.5	4.7	5.0	5.2	5.5	5.7	6.0	6.3
5	3.6	3.9	4.1	4.4	4.6	4.9	5.1	5.4	5.7	6.0	6.3	6.6	7.0	7.3	7.7
6	4.2	4.5	4.8	5.1	5.4	5.7	6.1	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.2
7	4.8	5.1	5.4	5.8	6.2	6.5	6.9	7.4	7.8	8.2	8.7	9.1	9.6	10.1	10.6
8	5.3	5.7	6.0	6.4	6.8	7.3	7.7	8.2	8.6	9.1	9.6	10.1	10.6	11.2	11.7
9	5.8	6.2	6.6	7.1	7.5	8.0	8.5	8.9	9.4	10.0	10.5	11.0	11.6	12.2	12.8
10	6.3	6.8	7.2	7.7	8.2	8.7	9.2	9.7	10.3	10.8	11.4	12.0	12.6	13.2	13.8
11	6.8	7.3	7.8	8.3	8.8	9.3	9.9	10.4	11.0	11.6	12.2	12.8	13.4	14.1	14.7
12	7.3	7.8	8.3	8.9	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.7	14.3	15.0	15.7
13	7.8	8.4	8.9	9.5	10.1	10.7	11.3	11.9	12.5	13.2	13.9	14.5	15.2	15.9	16.7
14	8.3	8.9	9.4	10.0	10.6	11.3	11.9	12.5	13.2	13.9	14.6	15.3	16.0	16.7	17.5
15	8.8	9.4	10.0	10.6	11.2	11.9	12.5	13.2	13.9	14.6	15.3	16.1	16.8	17.6	18.4
16	9.2	9.9	10.5	11.1	11.8	12.5	13.2	13.9	14.6	15.3	16.1	16.8	17.6	18.4	19.2
17	9.7	10.3	11.0	11.6	12.3	13.0	13.7	14.5	15.2	15.9	16.7	17.5	18.3	19.1	19.9
18	10.1	10.8	11.5	12.1	12.8	13.6	14.3	15.0	15.8	16.5	17.3	18.1	18.9	19.7	20.6
19	10.6	11.3	12.0	12.7	13.4	14.1	14.9	15.6	16.4	17.2	18.0	18.8	19.6	20.5	21.3
20	11.0	11.7	12.4	13.2	13.9	14.7	15.4	16.2	17.0	17.8	18.6	19.4	20.3	21.1	22.0
21	11.5	12.2	12.9	13.7	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.1	20.9	21.8	22.6
22	11.9	12.6	13.4	14.1	14.9	15.7	16.5	17.3	18.1	18.9	19.8	20.6	21.5	22.4	23.3
23	12.3	13.0	13.8	14.6	15.4	16.2	17.0	17.8	18.6	19.5	20.3	21.2	22.1	23.0	23.9
24	12.7	13.5	14.2	15.0	15.8	16.7	17.5	18.3	19.2	20.0	20.9	21.8	22.7	23.5	24.5
25	13.1	13.9	14.7	15.5	16.3	17.1	18.0	18.8	19.7	20.6	21.4	22.3	23.2	24.1	25.0
26	13.5	14.3	15.1	15.9	16.7	17.6	18.4	19.3	20.1	21.0	21.9	22.8	23.7	24.6	25.5
27	13.9	14.7	15.5	16.3	17.1	18.0	18.8	19.7	20.6	21.5	22.4	23.2	24.1	25.1	26.0
28	14.2	15.0	15.9	16.7	17.5	18.4	19.3	20.1	21.0	21.9	22.8	23.7	24.6	25.5	26.4
29	14.6	15.4	16.2	17.1	17.9	18.8	19.7	20.5	21.4	22.3	23.2	24.1	25.0	25.9	26.8
30	14.9	15.8	16.6	17.5	18.3	19.2	20.1	20.9	21.8	22.7	23.6	24.5	25.4	26.3	27.2

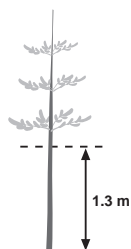
How to use the table to get a site index estimate from measured height and age.

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

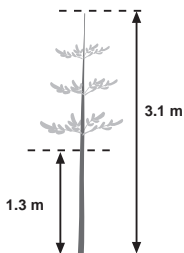
Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

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

Step 1: Locate breast height

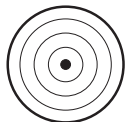


Step 2: Measure total height



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	Pl	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.

ACKNOWLEDGEMENTS

Funding by Forest Renewal B.C.

Participation by:

Ministry of Forests,

J.S. Thrower and Associates Ltd.,

Weyerhaeuser Canada Ltd.