



Species: Douglas-fir (Fd)

Region: Coastal B.C.

Source: G. Nigh, 1996b

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:

Species	Douglas-fir
Age	3- to 30-years growth above breast height
DBH	largest DBH Douglas-fir
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: Douglas-fir (Fd)

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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	1.6	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	1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.5	2.6
5	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.1
6	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.2	3.3	3.4	3.6
7	2.0	2.1	2.2	2.3	2.4	2.6	2.7	2.9	3.0	3.1	3.3	3.5	3.6	3.8	4.0	4.1
8	2.1	2.3	2.4	2.5	2.7	2.9	3.0	3.2	3.4	3.5	3.7	3.9	4.1	4.3	4.5	4.7
9	2.3	2.5	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.3
10	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.2	4.4	4.6	4.9	5.1	5.4	5.6	5.9
11	2.7	2.9	3.1	3.4	3.6	3.8	4.1	4.3	4.6	4.8	5.1	5.4	5.6	5.9	6.2	6.5
12	2.9	3.2	3.4	3.7	3.9	4.2	4.5	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.1
13	3.1	3.4	3.7	4.0	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.7	7.0	7.3	7.6
14	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.5	5.9	6.2	6.5	6.9	7.2	7.5	7.9	8.2
15	3.6	3.9	4.2	4.5	4.8	5.2	5.5	5.9	6.2	6.6	6.9	7.3	7.7	8.0	8.4	8.8
16	3.8	4.1	4.5	4.8	5.2	5.5	5.9	6.3	6.6	7.0	7.4	7.8	8.2	8.6	9.0	9.4
17	4.0	4.4	4.7	5.1	5.5	5.9	6.3	6.7	7.1	7.5	7.9	8.3	8.7	9.1	9.5	10.0
18	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.5	7.9	8.3	8.8	9.2	9.6	10.1	10.5
19	4.4	4.8	5.2	5.7	6.1	6.5	7.0	7.4	7.9	8.3	8.8	9.2	9.7	10.1	10.6	11.1
20	4.6	5.0	5.5	5.9	6.4	6.8	7.3	7.8	8.2	8.7	9.2	9.7	10.1	10.6	11.1	11.6
21	4.8	5.3	5.7	6.2	6.7	7.1	7.6	8.1	8.6	9.1	9.6	10.1	10.6	11.1	11.6	12.1
22	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.1	11.6	12.1	12.7
23	5.2	5.7	6.2	6.7	7.2	7.7	8.3	8.8	9.3	9.9	10.4	11.0	11.5	12.1	12.6	13.2
24	5.4	5.9	6.4	6.9	7.5	8.0	8.6	9.1	9.7	10.2	10.8	11.4	11.9	12.5	13.1	13.7
25	5.5	6.1	6.6	7.2	7.7	8.3	8.9	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2
26	5.7	6.3	6.8	7.4	8.0	8.6	9.2	9.8	10.4	11.0	11.6	12.2	12.8	13.4	14.0	14.7
27	5.9	6.5	7.0	7.6	8.2	8.8	9.5	10.1	10.7	11.3	11.9	12.6	13.2	13.8	14.5	15.1
28	6.1	6.7	7.3	7.9	8.5	9.2	9.8	10.4	11.1	11.7	12.4	13.0	13.7	14.3	15.0	15.6
29	6.3	6.9	7.6	8.2	8.8	9.5	10.1	10.8	11.4	12.1	12.8	13.4	14.1	14.8	15.5	16.1
30	6.5	7.1	7.8	8.4	9.1	9.8	10.4	11.1	11.8	12.5	13.1	13.8	14.5	15.2	15.9	16.6

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: Douglas-fir (Fd)

Region: Coastal B.C.

Source: G. Nigh, 1996b

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	2.7	2.8	2.9	2.9	3.0	3.1	3.2	3.3
4	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.2
5	3.2	3.3	3.4	3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.7	4.8	5.0	5.1
6	3.7	3.9	4.0	4.2	4.3	4.5	4.7	4.8	5.0	5.2	5.4	5.5	5.7	5.9	6.1
7	4.3	4.5	4.7	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.1
8	4.9	5.1	5.3	5.5	5.7	6.0	6.2	6.4	6.6	6.9	7.1	7.3	7.6	7.8	8.1
9	5.5	5.7	6.0	6.2	6.5	6.7	6.9	7.2	7.5	7.7	8.0	8.2	8.5	8.8	9.1
10	6.1	6.4	6.6	6.9	7.2	7.4	7.7	8.0	8.3	8.5	8.8	9.1	9.4	9.7	10.0
11	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1	9.4	9.7	10.0	10.4	10.7	11.0
12	7.4	7.7	8.0	8.3	8.6	8.9	9.3	9.6	9.9	10.2	10.6	10.9	11.3	11.6	11.9
13	8.0	8.3	8.6	9.0	9.3	9.7	10.0	10.4	10.7	11.1	11.4	11.8	12.1	12.5	12.9
14	8.6	9.0	9.3	9.7	10.0	10.4	10.8	11.1	11.5	11.9	12.3	12.7	13.0	13.4	13.8
15	9.2	9.6	9.9	10.3	10.7	11.1	11.5	11.9	12.3	12.7	13.1	13.6	14.0	14.4	14.8
16	9.8	10.2	10.6	11.0	11.4	11.9	12.3	12.7	13.1	13.6	14.0	14.4	14.9	15.3	15.7
17	10.4	10.8	11.3	11.7	12.1	12.6	13.0	13.5	13.9	14.4	14.8	15.3	15.7	16.2	16.6
18	11.0	11.4	11.9	12.3	12.8	13.3	13.7	14.2	14.7	15.1	15.6	16.1	16.6	17.0	17.5
19	11.6	12.0	12.5	13.0	13.5	14.0	14.4	14.9	15.4	15.9	16.4	16.9	17.4	17.9	18.4
20	12.1	12.6	13.1	13.6	14.1	14.6	15.1	15.6	16.1	16.7	17.2	17.7	18.2	18.7	19.3
21	12.7	13.2	13.7	14.2	14.8	15.3	15.8	16.4	16.9	17.4	18.0	18.5	19.1	19.6	20.2
22	13.2	13.7	14.3	14.8	15.4	15.9	16.5	17.0	17.6	18.2	18.7	19.3	19.8	20.4	21.0
23	13.7	14.3	14.9	15.4	16.0	16.6	17.2	17.7	18.3	18.9	19.5	20.1	20.7	21.2	21.8
24	14.3	14.8	15.4	16.0	16.6	17.2	17.8	18.4	19.0	19.6	20.2	20.8	21.4	22.1	22.7
25	14.8	15.4	16.0	16.6	17.2	17.8	18.4	19.1	19.7	20.3	20.9	21.6	22.2	22.8	23.5
26	15.3	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.4	21.0	21.6	22.3	22.9	23.6	24.2
27	15.8	16.4	17.1	17.7	18.4	19.0	19.7	20.4	21.0	21.7	22.4	23.0	23.7	24.4	25.0
28	16.3	17.0	17.6	18.3	19.0	19.6	20.3	21.0	21.7	22.4	23.1	23.7	24.4	25.1	25.8
29	16.8	17.5	18.2	18.9	19.6	20.3	21.0	21.7	22.3	23.0	23.8	24.5	25.2	25.9	26.6
30	17.3	18.0	18.7	19.4	20.1	20.9	21.6	22.3	23.0	23.7	24.4	25.2	25.9	26.6	27.3

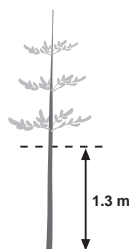
How to use the table to get a site index estimate from measured height and age.

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

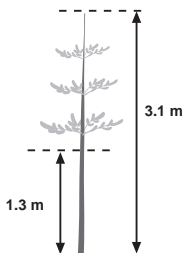
Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

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	Fd	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.