Species: Douglas-fir (Fd) **Region: Interior B.C.** **Source: G. Nigh, 1996c**

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	Douglas-fir
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) **Region:** Interior B.C. **Source:** G. Nigh, 1996c

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	1.4	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1
4	1.4	1.4	1.5	1.5	1.6	1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.3	2.4
5	1.5	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
6	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.7	2.8	2.9	3.1	3.2
7	1.6	1.7	1.8	1.9	2.0	2.1	2.3	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.5	3.6
8	1.6	1.7	1.9	2.0	2.1	2.3	2.4	2.6	2.8	2.9	3.1	3.3	3.5	3.7	3.9	4.0
9	1.7	1.8	2.0	2.1	2.3	2.5	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.3	4.5
10	1.7	1.9	2.1	2.3	2.4	2.6	2.8	3.1	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.9
11	1.8	2.0	2.2	2.4	2.6	2.8	3.1	3.3	3.5	3.8	4.0	4.3	4.6	4.8	5.1	5.4
12	1.9	2.1	2.3	2.6	2.8	3.1	3.3	3.6	3.8	4.1	4.4	4.7	4.9	5.2	5.5	5.8
13	2.0	2.2	2.5	2.7	3.0	3.3	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.6	6.0	6.3
14	2.1	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.4	5.7	6.0	6.4	6.7
15	2.1	2.4	2.7	3.0	3.3	3.7	4.0	4.3	4.7	5.0	5.4	5.7	6.1	6.4	6.8	7.2
16	2.2	2.5	2.8	3.2	3.5	3.9	4.2	4.6	4.9	5.3	5.7	6.1	6.5	6.8	7.2	7.6
17	2.3	2.6	3.0	3.3	3.7	4.1	4.4	4.8	5.2	5.6	6.0	6.4	6.8	7.2	7.7	8.1
18	2.4	2.7	3.1	3.5	3.9	4.2	4.6	5.1	5.5	5.9	6.3	6.8	7.2	7.6	8.1	8.5
19	2.5	2.8	3.2	3.6	4.0	4.4	4.9	5.3	5.7	6.2	6.6	7.1	7.6	8.0	8.5	9.0
20	2.5	2.9	3.3	3.8	4.2	4.6	5.1	5.5	6.0	6.5	7.0	7.4	7.9	8.4	8.9	9.4
21	2.6	3.0	3.5	3.9	4.4	4.8	5.3	5.8	6.3	6.8	7.3	7.8	8.3	8.8	9.3	9.8
22	2.7	3.1	3.6	4.1	4.5	5.0	5.5	6.0	6.5	7.1	7.6	8.1	8.6	9.2	9.7	10.3
23	2.8	3.3	3.8	4.2	4.7	5.3	5.8	6.3	6.8	7.4	7.9	8.5	9.0	9.6	10.1	10.7
24	2.9	3.4	3.9	4.4	4.9	5.4	6.0	6.5	7.1	7.6	8.2	8.8	9.4	9.9	10.5	11.1
25	3.0	3.5	4.0	4.6	5.1	5.7	6.2	6.8	7.4	7.9	8.5	9.1	9.7	10.3	10.9	11.5
26	3.1	3.6	4.2	4.7	5.3	5.9	6.5	7.0	7.6	8.2	8.8	9.5	10.1	10.7	11.3	11.9
27	3.2	3.7	4.3	4.9	5.5	6.1	6.7	7.3	7.9	8.5	9.1	9.8	10.4	11.0	11.7	12.3
28	3.2	3.8	4.4	5.0	5.6	6.3	6.9	7.5	8.1	8.8	9.4	10.1	10.7	11.4	12.1	12.7
29	3.3	3.9	4.6	5.2	5.8	6.4	7.1	7.7	8.4	9.1	9.7	10.4	11.1	11.7	12.4	13.1
30	3.4	4.0	4.7	5.3	6.0	6.6	7.3	8.0	8.6	9.3	10.0	10.7	11.4	12.1	12.8	13.5

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:** Interior B.C. **Source:** G. Nigh, 1996c

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	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.3
4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.5	3.6	3.7	3.8	3.9	4.0
5	2.9	3.1	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
6	3.4	3.5	3.6	3.8	4.0	4.1	4.3	4.4	4.6	4.8	4.9	5.1	5.3	5.5	5.6
7	3.8	4.0	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.6	5.8	6.0	6.3	6.5
8	4.2	4.4	4.6	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.4	6.6	6.8	7.1	7.3
9	4.7	4.9	5.2	5.4	5.6	5.9	6.1	6.4	6.6	6.9	7.2	7.4	7.7	8.0	8.2
10	5.2	5.4	5.7	6.0	6.2	6.5	6.8	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1
11	5.7	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.7	9.0	9.3	9.6	9.9
12	6.1	6.4	6.8	7.1	7.4	7.7	8.0	8.4	8.7	9.0	9.4	9.7	10.0	10.4	10.7
13	6.6	6.9	7.3	7.6	8.0	8.3	8.7	9.0	9.4	9.7	10.1	10.4	10.8	11.2	11.5
14	7.1	7.4	7.8	8.2	8.5	8.9	9.3	9.7	10.0	10.4	10.8	11.2	11.6	12.0	12.4
15	7.6	7.9	8.3	8.7	9.1	9.5	9.9	10.3	10.7	11.1	11.5	12.0	12.4	12.8	13.2
16	8.1	8.5	8.9	9.3	9.7	10.1	10.6	11.0	11.4	11.9	12.3	12.7	13.2	13.6	14.1
17	8.5	9.0	9.4	9.8	10.3	10.7	11.2	11.6	12.1	12.6	13.0	13.5	14.0	14.4	14.9
18	9.0	9.5	9.9	10.4	10.9	11.3	11.8	12.3	12.8	13.3	13.8	14.3	14.8	15.3	15.8
19	9.5	10.0	10.4	10.9	11.4	11.9	12.4	12.9	13.5	14.0	14.5	15.0	15.5	16.1	16.6
20	9.9	10.4	11.0	11.5	12.0	12.5	13.0	13.6	14.1	14.7	15.2	15.7	16.3	16.8	17.4
21	10.4	10.9	11.4	12.0	12.5	13.1	13.6	14.2	14.7	15.3	15.8	16.4	17.0	17.5	18.1
22	10.8	11.4	11.9	12.5	13.1	13.6	14.2	14.8	15.4	16.0	16.5	17.1	17.7	18.3	18.9
23	11.3	11.8	12.4	13.0	13.6	14.2	14.7	15.3	15.9	16.5	17.1	17.7	18.3	18.9	19.6
24	11.7	12.3	12.9	13.5	14.1	14.7	15.3	15.9	16.6	17.2	17.8	18.4	19.1	19.7	20.3
25	12.1	12.7	13.4	14.0	14.6	15.2	15.9	16.5	17.1	17.8	18.4	19.0	19.7	20.3	21.0
26	12.6	13.2	13.8	14.5	15.1	15.8	16.4	17.0	17.7	18.4	19.0	19.7	20.3	21.0	21.7
27	13.0	13.6	14.3	14.9	15.6	16.3	16.9	17.6	18.3	19.0	19.6	20.3	21.0	21.7	22.4
28	13.4	14.1	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6	20.2	20.9	21.6	22.4	23.1
29	13.8	14.5	15.2	15.9	16.6	17.3	18.0	18.7	19.4	20.1	20.8	21.5	22.3	23.0	23.7
30	14.2	14.9	15.6	16.3	17.0	17.8	18.5	19.2	19.9	20.7	21.4	22.1	22.9	23.6	24.3

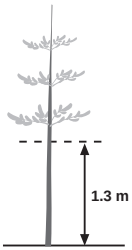
How to use the table to get a site index estimate from measured height and age.

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

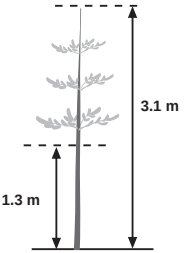
Step 2: Look across the row to find the total height that is closest to the total height of the sample tree.

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

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