RESUME

Kimberley (Kim) Iles, Ph.D.

ADDRESS: Kim Iles & Associates Ltd.
412 Valley Place
Nanaimo, B.C. Canada
V9R 6A6

Phone / FAX: (604) 753-8095
Web page: http://www.island.net/~kiles/

DEGREES: B.S. Forest Management, Oregon State University - 1969
M.Sc. Forest Biometrics, Oregon State University - 1974
Ph.D. Forest Biometrics, University of British Columbia -1979

BORN: Roseburg, Oregon, U.S.A - U.S. Citizen
Landed Immigrant in Canada since 1982

SPECIALTIES:

Statistics and Forest Inventory Design and reviews.
Proportional Probability Sampling Systems & Timber Cruising Methods.
Growth & Yield, Sample Scaling.
Expert Witness Consultation in Legal cases.

PAST OR PRESENT PROFESSIONAL SOCIETIES AND AFFILIATIONS:

Society of American Foresters.
American Statistical Society.
International Stereology Society.
Member, Academic Standards Committee of B.C. Professional Foresters, 1990 to 1992.
Member, NSERC Strategic Grant Selection Panel on Food, Agriculture and Forestry, 1990 to 1993.
Adjunct Professor, U.B.C., 1989 – Present.
Professor, Malaspina University College, Nanaimo, 2007-present
Member, American Forest Council Subcommittee on National Forest Inventory in the United States (oversight committee for US National Inventory).

BRIEF WORK HISTORY:

1991-Present	Consultant, Kim Iles & Associates Ltd.
1996-Present	Professor, Vancouver Island University.
1979-1991	Biometrician and Head of Growth and Yield Dept., MacMillan Bloedel Ltd., Nanaimo, B.C.
1976-1979	Ph.D. program, U.B.C.
1974-1976	Instructor in Forest Biometrics, M.T.U., Michigan.
1972-1974	M.Sc. Degree, Oregon State University, Forest Biometrics.
1969-1971	Senior Programmer, Systems Analyst, U.S. Army, Nuremberg, Germany.
1965-1969	B.S. Degree, Forest Management, Oregon State University.

Dr. Iles is the author of two books on Forest Inventory (with another due out shortly).

He was the principle inventory design consultant for the British Columbia Provincial Inventory design. This inventory covered an area of 250 million acres (100,000,000 hectares).

His specialties of Variable Plot Sampling and 3P sampling are the dominant inventory systems used in the North America.

He has taught inventory techniques to several thousand professional cruisers on 3 continents, and is the major contributor to the Cruising and Inventory Newsletter published by John Bell & Associates.

He has been a member of several committees of national standing, and has developed and introduced a number of innovations in cruising systems in North America – for instance Big BAF sampling and sector sampling.

He is also (1 day a week) a professor at Vancouver Island University, teaching statistics in the Psychology Department.

CONSULTING CLIENTS:

Teaching

Vancouver Island University (4 years)
Oregon State University (yearly short courses)
University of Melbourne, Australia (cruising short course)
World University Services of Canada (Argentina Project, inventory)
Chile (sampling methods)
United States Forest Service, Training Branch (review of training plan)
Oregon State Board of Forestry (cruising short course)
British Columbia Institute of Technology (statistics & inventory)
Paul Smith College (New York State) (cruising short course)
U.S. Forest Service, Region 5 (cruising short course)
SAF (Sitka, Alaska Chapter - cruising short course)
Western Forestry and Conservation Association (several sampling courses)
Variable Plot Short courses at universities in Poland and Ireland.

Inventory & Statistics

Inventory Branch, B.C. Ministry of Forests (250,000,000 acre inventory)
Port Blakely (New Zealand forest sampling)
Pacific Lumber Company (Inventory, G&Y, ecological sampling)
Weyerhaeuser (sampling of retention areas)
Washington Dept. of Natural Resources (data summary issues)
Silviculture Branch, B.C. Ministry of Forests (Inventory design, wildlife trees)
T.M. Thomson, Forestry Consultants (FRDA Review)
Ontario Ministry of Natural Resources (G&Y advice)
The Campbell Group (Inventory Design)
TimberWest Ltd. (Inventory design, 3P sample project)
Merritt Forest District, MoF (minor species Inventory design)
Hugh Hamilton Ltd. (Inventory Design)
Valuation Branch, B.C. Ministry of Forests (Statistics, inventory design, 3P)
Canadian International Forest Products Ltd. (Inventory Design)
Weldwood Canada Ltd (Inventory design, 25,000 acre land sale)
BC Land Trade Committee ("equivalent acre" sampling)
Forest Information Services (satellite data evaluation)
D.R. Systems (State of Oregon sampling problems)
Lignum Ltd (Vegetation Inventory)
J.S. Thrower (computation issues and growth measurement)
Pacific Forest Products (inventory design)
Pacific Software (sample scaling design)
David Moon Ecological Consulting (ecological sampling)
Greater Victoria Water District (watershed sampling)

Legal Cases

US Justice Department (inventory issue, hurricane damage).
Shapray, Cramer (timber inventory dispute).
Karnoop, Peterson (Warm Springs legal action).
Bull, Houser, Tupper (suit over appraisal of timber).
International Forest Products (mediated action on timber value).
Pacific Lumber Company (Bankruptcy and a second action involving AAC)
Several other actions of a confidential nature.

COMPUTER EXPERIENCE:

1992-Present	Designed Program for documenting database work by technical committees, and set up example database design for MoF inventory of BC.
	Many EXCEL spreadsheets, some that are used in industry for practial sampling issues.
	Designed 3P handheld program
1989-1991	Designed summary database for CFPC permanent plot information.
1979-1991	As supervisor of the Growth and Yield department, arranged for the introduction of interactive statistical packages, graphics routines and data base use into MacMillan Bloedel Woodlands research work. Some experience in writing IBM/PC programs in BASIC and FORTRAN. Designed the Provincial data base for permanent sample plots.
1974-1976	Michigan Technological University. Assisted the professional staff in program use and statistical problems, worked with several graduate students on their computer problems and gave several special courses to students interested in computer applications.
1970-1971	U.S. Army. Responsible for a 4-8 man computer programming staff in Nuremberg, Germany for approximately 2 years. Handled all phases of data processing work from design through programming and output. Converted entire software system to new machinery and taught computer programming through the army education system.
1967-1968	Designed, wrote and maintained computer programs for use at Oregon State University for Forest Engineering, Timber Cruising and sampling simulations.

MISCELLANEOUS FIELD EXPERIENCE:

Summer 1967	Weyerhaeuser Company: choker setting, road layout, timber sale layout.
Summers of 1965, 1966	U.S. Forest Service: thinning contract administration, slash disposal, fire suppression, brush control.

PAPERS PUBLISHED:

Iles, K. and Lester Wilson. "*A Further Neglected Mean*". Mathematics Teacher. Jan. 1977.

Iles, K. "*Pythagoras and the Tree Ring Problem*". Math. Spectrum. May 1978.

Iles, K. "*Increasing Estimation Efficiency in 3P Cruises*". Forest Chronicle. Feb. 1978.

Iles, K. "*Some Techniques to Generalize the use of Variable Plot and Line Intersect Sampling*". 1979. Forest Resource Inventories Workshop, Colorado State University.

(This work was summarized in a German scientific publication of Walter Bitterlich as "*Eine fliessend mitwachsende Dauerstichprobe in Wald*". Allgemeine Forstzeitung, Folge 2, February 1983. Also in his book, chapter 10, "The Relascope Idea". Page Bros. (Norwich) Ltd. 236 p.)

Iles, K. and Lester Wilson. "*An Improvement of a Historic Construction*". Mathematics Teacher. Jan. 1980.

Iles, K. "*Permanent 'Variable' Plots for Forest Growth*". 1981. Western Forestry Meeting. Sun Valley, Idaho. (available from the author)

Iles, K. "*Some Thoughts on Growth Measurement Techniques*". 1983. Proceedings: Renewable Resource Inventories for Monitoring Changes and Trends. Corvallis, Oregon.

Iles, K. and Tom W. Beers. "*Growth Information from Variable Plot Sampling*". 1983. Proceedings: Renewable Resource Inventories for Monitoring Changes and Trends. Corvallis, Oregon.

Iles, K. and John F. Bell. "*Grade Assessment using Variable Plot Sampling*". 1983. Proceedings: Renewable Resource Inventories for Monitoring Changes and Trends. Corvallis, Oregon.

Bell, John F., K. Iles and David Marshall. "*Balancing the Ratio of Tree-Count-Only sample points and VBAR Measurements in Variable Plot Sampling*". 1983. Proceedings: Renewable Resource Inventories for Monitoring Changes and Trends. Corvallis, Oregon.

Iles, K. and M. Fall. "*Can an Angle Gauge Really Evaluate 'Borderline Trees' Accurately in Variable Plot Sampling?*" June 1988. Can. J. For. Res. 18(6):774-781.

Iles, K. and W.H. Wilson. *Changing Angle Gauges in Variable Plot Sampling: Is there a Bias under Ordinary Conditions*? June 1988. Can. J. For. Res. 18(6):768-773.

Smith, N.J. and K. Iles. *A Graphical Depiction of Multivariate Similarity Among Sample Plots*. April 1988. Can. J. For. Res. 18(4):467-472.

Iles, K. *"Critical Height Sampling: A Workshop on the Current State of the Technique*." 1989. Invited Paper in the Proceedings: State of the Art Methodology of Forest Inventory. Syracuse, New York.

Bell, J.F. & K. Iles, "*Count Plots in Prism Cruising*", The Consultant, Summer 1992.

Iles, K. "*The Relascope: Enduring Principles and Historical Development*" 1992, Proceedings of the IUFRO Centennial Meeting in Berlin. August 1992

Iles, K. "*Some Directions for Forest Inventory*", Journal of Forestry, December 1994. Invited lead article for the special edition on Inventory. (available on website)

Iles, K. "*Constructing a Safety Net in the Circus of New Technology*", proceedings of the IUFRO inventory conference is Tempere, Finland, 1995. (available on website)

Iles, K. "*Some Practical Aspects of Designing a Large Inventory*", International meeting on Forest Inventory, Boise, Idaho, 1998. (available on website)

Flewelling, James and Kim Iles "*Area-Independent Sampling for Total Basal Area"*. Forest Science, Volume 50, Number 4, August 2004 , pp. 512-517(6)

Marshall, David; Kim Iles and John Bell "*Using a large-angle gauge to select trees for measurement in variable plot sampling*" Canadian Journal of Forest Research, April 2004, pages 840-845.

Iles, K and Nick Smith, "*A New Type of Sample Plot that Is Particularly Useful for Sampling Small Clusters of Objects*". Forest Science, Volume 52, Number 2, April 2006 , pp. 148-154(7)

Smith, Nick, Kim Iles, Kurt Raynor, "*Investigation of Some Sector Sampling Statistical Properties*" Forest Science, Volume 54, Number 1, February 2008 , pp. 67-76(10)

Iles, K. "*Nearest-tree" estimations - A discussion of their* geometry. MCFNS 1(2): pp. 47-51, 2009.

Iles, K. *" 'Total-Balancing' an inventory: A method for unbiased inventories using highly biased non-sample data at variable scales"*. MCFNS 1(1): pp. 10-13, 2009.

Iles, K. "*Nearest Neighbor Bias - A simple example*". MCFNS 2(1): pp. 18-19, 2010.

BOOKS:

Forest Mensuration Lab Manual. 1973. Oregon State University. Co-authored by John Bell.

"Forest Measurements" Chapter (Section on Standing Tree Measurement) of *Society of American Foresters Handbook of Forestry* (1984).

A Sampler of Inventory Topics. 2003. Textbook on forest inventory (in second printing)

The Compassman, The Nun, and the Steakhouse Statistician. 2009. (on sampling issues)

A selection (from many) TALKS PRESENTED (no paper produced):

Iles, K. and Steve Northway. "*Ridge Regression Without Using a Matrix - The Logic Behind the System and Some Improvements*". Midwestern Mensurationists Meeting. Macinac Island, Michigan. 1980.

Iles, K. "*Shiftable Plot Borders, Pseudo-trees and the CFI Concept. Why Not Take Stem Distribution into Account*?" Western Mensurationists Meeting. Seattle, Washington. 1983.

Iles, K. "*Importance Sampling*". Western Mensurationists Meeting. Bend, Oregon. 1990. (Speakers award)

Iles, K. "*Update on the B.C. Inventory*". Western Mensurationist Meeting. Newport, Oregon. 1993 (Speakers award)

Iles, K. "*How to place a grid – not as easy as you might think*", Western Mensuration Meeting. 1996?

Iles, K. "*Solving the edge effect problem, an exact solution*" Western Mensurationist Meeting. 2001

Iles, K and Nick Smith. "*Sector Sampling, a new plot shape*" Western Mensurationist Meeting. 2002

Iles, K. "*A General solution to the 'nearest neighbor' sampling problem*" Western Mensurationist Meeting. 2003 (speaker award)

Iles, K. "*Driving Mr. Lew*" at the invited conference to celebrate the work of Lew Grosenbaugh. (available on website)

UNPUBLISHED PAPERS & MASTERS THESIS :

"*Penetration Sampling*", an extension of the Bitterlich system to the third dimension. 1974.

"*Geometrical considerations affecting the determination of basal area growth by increment boring methods*", unpublished M.Sc. thesis, Oregon State University. 1974.

Invited paper at Walter Bitterlich's 80th Birthday Celebration, Salzburg, Austria. 1988.

DISSERTATION TOPIC: Ph.D., 1979

"Systems for the Selection of Random Samples and the Extension of Variable Plot Sampling to the Third Dimension". Selection of truly random samples of individual trees has previously been very time consuming. Techniques are presented which do not require the numbering of every member of the population. Bitterlich's sampling system is generalized to three dimensions to give direct volume estimates without the need for volume tables of any kind. This was an independent development of what has become known as "Critical Height Sampling".

REVIEWER FOR:

Forest Science
Can. Journal of Forest Research
Forestry Chronicle
Western Journal of Applied Forestry
Northern Journal of Applied Forestry
Pacific Northwest For. & Range Expt. Station
Ministry of Forests, Research Branch
Plant Physiology
B.C. Science Council
National Sciences & Engineering Research Council (NSERC)
Strategic and Operational Grants.

RESEARCH EXPERIENCE:

1979-1991	In charge of growth and yield projections, AAC calculations, experimental designs, etc., as Senior Biometrician for MacMillan Bloedel Ltd. (6-12 permanent staff).
1977	Produced the calculation of allowable cut for the U.B.C. Research Forest utilizing biogeoclimatic zone information. Results now used by the Research Forest.
1973	In charge of biometrics phase of research on soil compaction and tree growth conducted by the Forest Engineering Dept. of Oregon State University.

1972	Field Project Leader, International Biological Program project on tree biomass. Results published in "Estimation of Biomass and Nutrient Capital in stands of old-growth Douglas-fir", IUFRO Biomass Conference Proceedings.
1969	Research Assistant, Sampling Theory Project. 3P sampling, SALT sampling, Hartley PPS sampling. Results in thesis by Dr. John F. Bell, Oregon State University.

REFERENCES:

Dr. John F. Bell (former Professor, Forest Biometrics, OSU - now a consultant)

Dr. John F. Bell
465 N.W. Elizabeth Drive
Corvallis, Oregon, U.S.A.
97330

Phone: (503) 758-4939 FAX: (503) 757-7078

Norm Shaw (In addition to being an instructor at BCIT, Norm is a qualified cruiser and scaler who is very familiar with the BC area)

Norm Shaw
Forest Technology Program
BCIT, 3700 Willingdon Ave.
Burnaby, B.C. Canada
V7E 1J4

Phone (604) 432-8804 FAX (604) 439-8791

Dr. Dave Marshall (Dr. Marshall is a biometrician with Weyerhaeuser Company in the USA)

Dr. Dave Marshall
WTC 1A5
PO Box 9777
Federal Way, WA, USA
98063-9777

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Phone 253-924-5060