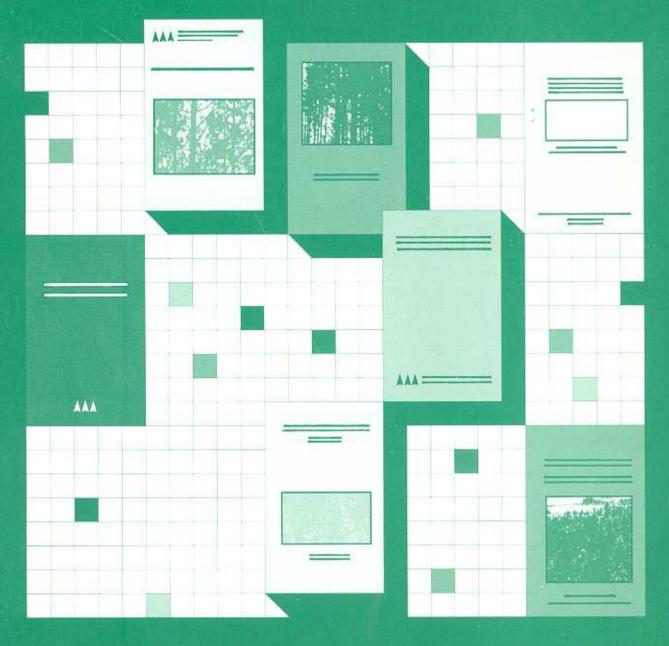


Forêts Canada

Forestry Canada Publications 1986-1988 Publications de Forêts Canada 1986 à 1988

D. Rochon

Information Report/Rapport d'information DPC-X-29 Science Directorate/Direction générale des sciences



Forestry Canada

Forestry Canada is the main focus for forestry matters in the federal government. It provides national leadership through the development, coordination, and implementation of federal policies and programs to enhance long-term economic, social, and environmental benefits from the forest sector for Canadians.

Forestry Canada is a decentralized organization with six regional forestry centres, two national research institutes, and seven regional sub-offices located across Canada. Headquarters is located in the National Capital Region, in Hull, Quebec.

In support of its mandate, Forestry Canada carries out the following activities:

- Administers forest development agreements negotiated with the provinces.
- Undertakes and supports research, development, and technology transfer in forest management and utilization
- Compiles, analyzes, and disseminates information about national and international forest resources and related matters.
- Monitors disease and insect pests in Canada's forests
- Provides information, analyses, and policy advice on economics, industry, markets, and trade related to the forest sector
- Promotes employment, education, and training opportunities in the forest sector.
- Promotes public awareness of all aspects of the forest sector.

Forestry Canada interacts regularly with provincial and territorial governments, industry, labor, universities, conservationists, and the public through such bodies as the Canadian Council of Forest Ministers, the Forest Sector Advisory Council, the Forestry Research Advisory Council of Canada, the Canadian Forest Inventory Committee, the Canadian Committee on Forest Fire Management, the Canadian Interagency Forest Fire Centre, and regional consultative committees. Forestry Canada is also active in international lorestry agencies such as the International Union of Forest Research Organizations and the Food and Agriculture Organization, as well as in technical and trade missions

Forêts Canada

Forêts Canada est l'organisme principal en matière de foresterie à l'intérieur du gouvernement fédéral. Chef de file sur le plan national, il assure la préparation, la coordination et la mise en œuvre des politiques et des programmes fédéraux dans le but d'améliorer les avantages économiques, sociaux et environnementaux à long terme offerts aux Canadiens par le secteur forestier.

Forêts Canada est une organisation décentralisée: six centres de foresterie régionaux, deux instituts de recherche nationaux ainsi que sept sous-bureaux régionaux sont répartis dans tout le Canada. Le siège social est établi dans la région de la Capitale nationale, à Hull (Québec).

Pour remplir son mandat. Forêts Canada assume les tâches suivantes:

- Il administre les accords de développement forestier conclus avec les provinces;
- il entreprend et appuie la recherche, la mise au point et le transfert technologique dans le domaine de la gestion et de l'utilisation des forêts.
- il rassemble, analyse et diffuse de l'information sur les ressources forestières nationales et internationales et les domaines connexes.
- il fait des relevés des maladies et des insectes ravageurs des forêts canadiennes.
- il fournit de l'information, des analyses et des conseils (quant aux politiques) concernant l'économie, l'industrie, les marchés et le commerce reliés au secteur forestier;
- Il favorise les occasions d'emploi et de formation universitaire et technique dans le secteur forestier.
- Il encourage les Canadiens à prendre conscience de tous les aspects du secteur forestier

Foréts Canada entretient des rapports sur une base régulière avec les gouvernements provinciaux et territoriaux, l'industrie, le monde du travail, les universités, les environnementalistes et le public par l'entremise d'organismes comme le Conseil canadien des ministres des Forêts, le Conseil consultatif du secteur forestier, le Conseil consultatif de la recherche forestiere du Canada. le Comité de l'Inventaire des forêts du Canada le Comité canadien de la gestion des incendres de forêt. le Centre interservices des feux de forêt du Canada et des comités consultatifs régionaux Forêts Canada joue egalement un rôle actif dans des organismes internationaux de foresterie comme l'Union internationale des organisations de recherche forestiera et l'Organisation pour l'alimentation et l'agriculture, de même qu'au sein de délégations de nature technique ou commerciale.

Forestry Canada Publications 1986-1988 Publications de Forêts Canada 1986 à 1988

D. Rochon Scientific Publications/Publications scientifiques Science Directorate/Direction générale des sciences

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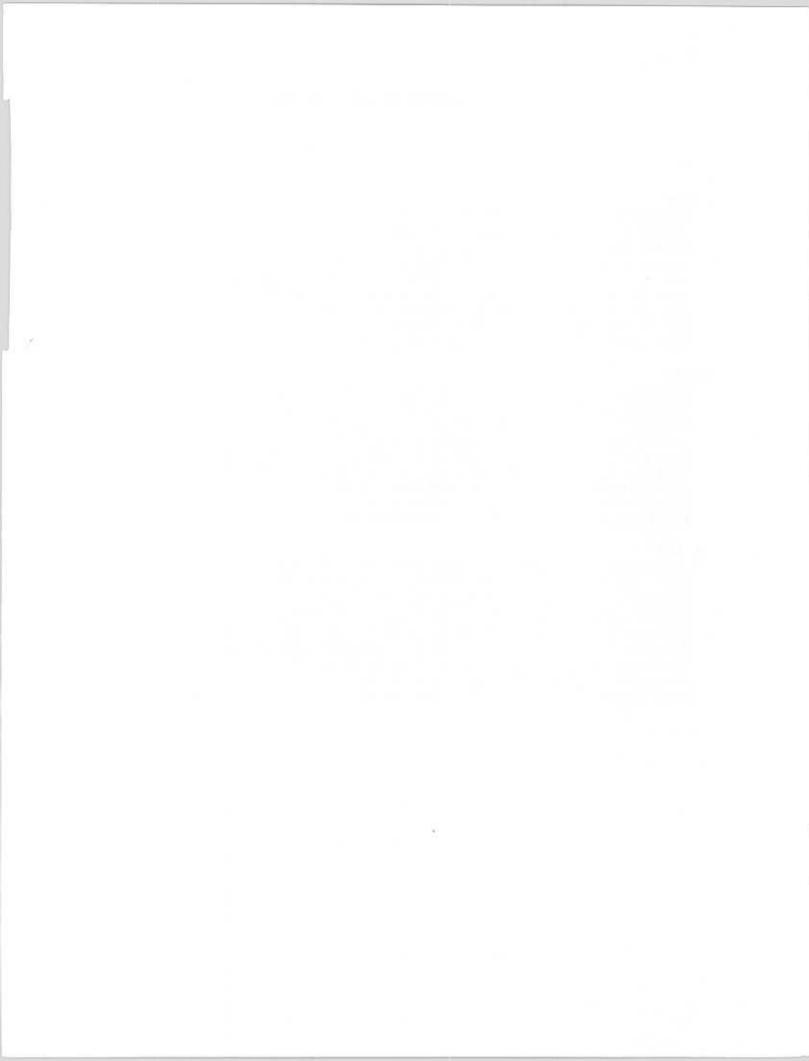
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I. 1986

Forestry Canada — Headquarters Forêts Canada - Administration centrale

Journal Articles / Articles de revues scientifiques

Huber, J.T. 1986. Systematics, biology, and hosts of the Mymaridae and Mymarommatidae (Insecta: Hymenoptera): 1758-1984. Entomography 4:185-243.

Other Publications / Autres publications

- Allen, D.C.; Abrahamson, L.P.; Jobin, L.; Souto, D.J.; Sanders, C.J. 1986. Use of pheromone traps to monitor spruce budworm populations. Spruce budworms handbook. 16 p. Allen, D.C.; Abrahamson, L.P.; Jobin, L.; Souto, D.J.;
- Sanders, C.J. 1986. Utilisation de pièges à phéromone pour la surveillance des populations de la tordeuse des bourgeons de l'épinette. Manuel concernant les tordeuses des bourgeons de l'épinette. 16 p. Bulletin ENFOR. Vol. 7, déc. 1986. 31 p.

- Canada's Forests 1985, 1986, Canadian Forestry Service, FORSTATS. (Brochure).
- Digest des rapports d'information. 1986. Publication bimensuelle. Vol. 7, nºs 1 à 6. 71 p.

Digest d'information sur les tordeuses des bourgeons de l'épinette, vol. 1, nº 2, déc. 1986. 10 p. ENFOR Review. Vol. 7, Dec. 1986. 29 p. Forestry Forum, June 1986 — Special Edition. 6 p.

Forum Forestier, Juin 1986 — Édition spéciale. 6 p.

- Hirvonen, R.; Woods, R.A., editors. 1986. Manual of forest inventory guidelines for federal and Indian lands. 45 p.
- Hirvonen, R.; Woods, R.A., editors. 1986. Manual of forest management plan guidelines for federal and Indian lands. 34 p. + appendix. Hirvonen, R.; Woods, R.A., réviseurs. 1986. Recueil
- de lignes directrices pour l'inventaire forestier sur les terres fédérales et indiennes. 40 p.
- Hirvonen, R.; Woods, R.A., réviseurs. 1986. Recueil de lignes directrices pour l'établissement de plans d'aménagement forestier sur les terres fédérales et indiennes. 33 p. + annexe.
- Information Reports Digest. 1986. Bi-monthly Publication. Vol. 7, No. 1 to 6. 71 p. Kondo, E.S.; Taylor, R.G. 1986. Forest insect and di-
- sease conditions in Canada 1985. 107 p. Kondo, E.S.; Taylor, R.G. 1986. Insectes et maladies
- des arbres au Canada 1985. 106 p.
- Les forêts du Canada 1985. 1986. Service canadien des forêts, FORSTATS. (Brochure).
- Spruce Budworms Information Digest, Vol. 1, No. 2, Dec. 1986. 10 p.
- Woods, R.A.; Hirvonen, R. 1986. Liste sommaire des terres forestières fédérales au Canada. 47 p.
- Woods, R.A.; Hirvonen, R. 1986. Summary of federal forest lands in Canada. 44 p.

Newfoundland Forestry Centre Centre de foresterie de Terre-Neuve

Information Reports / Rapports d'information

- Carew, G.C. 1986. Reference list of diseases of forest trees and shrubs in Newfoundland and Labrador. Inf. Rep. N-X-240.
- Clarke, L.J.; Carew, G.C. 1986. Forests insect and disease conditions in Newfoundland and Labrador in 1985. Inf. Rep. N-X-241.
- Hall, J.P. 1986. Afforestation of heathlands in eastern Newfoundland. Inf. Rep. N-X-253.
- Hall, J.P. 1986. A provenance trial of red spruce in the boreal forest. Inf. Rep. N-X-246.
- Hall, J.P. 1986. A provenance trial of Sitka spruce in the boreal forest. Inf. Rep. N-X-254.
- Hall, J.P. 1986. A provenance trial of white spruce in Newfoundland: Twenty-five years from seed. Inf. Rep. N-X-247.
- Hall, J. P. 1986. Flower promotion in black spruce
- seedlings using gibberellins. Inf. Rep. N-X-252. Hall, J. P. 1986. Growth of inland and coastal prov-enances of balsam fir. Inf. Rep. N-X-256.
- Hall, J.P. 1986. Regional provenance trials of black spruce in Newfoundland: Fifteen years from seed. Inf, Rep. N-X-255.
- Hayden, D. 1986. Newfoundland's forests and forest industry: Statistical information, 1985 edition. Inf. Rep. N-X-233.
- McCaughey, J.H. 1986. Energy balance measure-ment system for agroforestry application in Newfoundland. Inf. Rep. N-X-251.
- Milne, G.R. 1986. Economic impact of the spruce budworm outbreak in Newfoundland. Inf. Rep. N-X-237.
- Morgan, S.M. 1986. Checklist of the vascular specimens in the Newfoundland Forestry Centre
- herbarium (CDFN). Inf. Rep. N-X-245. Raske, A.G. 1986. Vulnerability rating of the forests of Newfoundland to spruce budworm damage. Inf. Rep. N-X-239.
- Raske, A.G.; Clarke, L.J.; Sutton, W.J. 1986. The status of the spruce budworm in Newfoundland and Labrador in 1982. Inf. Rep. N-X-234.
- Raske, A.G.; Clarke, L.J.; Sutton, W.J. 1986. The status of the spruce budworm in Newfoundland and Labrador in 1983-1985. Inf. Rep. N-X-235.
- Raske, A.G.; Retnakaran, A.; West, R.J.; Hudak, J.; Lim, K.P. 1986. The effectiveness of *Bacillus thuringiensis*, Dimilin[®], Sumithion[®], and Matacil[®] against the hemlock looper, *Lambdina* fiscellaria fiscellaria, in Newfoundland in 1985. Inf. Rep. N-X-238.
- Raske, A.G.; Sutton, W.J. 1986. Decline and mortality of black spruce caused by spruce budworm defoliation and secondary organisms. Inf. Rep. N-X-236.
- van Kesteren, A.R. 1986. A method for assessing the environmental sensitivity of land to forest harvesting in central and western Newfoundland.

Inf. Rep. N-X-250.

- Warren, G.R.; Meades, J.P. 1986. Wood defect and density studies: II. Total and net volume equations for Newfoundland forest management units. Inf. Rep. N-X-242.
- Warren, G.R.; Meades, J.P. 1986. Wood defect and density studies: III. Sawlog volume tables for Newfoundland. Inf. Rep. N-X-243.
- West, R.J. 1986. Seasonal incidence of cone pests of black spruce in Newfoundland. Inf. Rep. N-X-244.

Journal Articles / Articles de revues scientifiques

- Khalil, M.A.K. 1986. Variation and genotypic stability of Picea mariana (Mill.) B.S.P. in Newfoundland, Canada. Silvae Genet. 35(2-3):49-57.
- Khalil, M.A.K. 1986. Variation in seed quality and some juvenile characters of white spruce (Picea glauca [Moench] Voss). Silvae Genet. 35(2-3):78-85.
- Mallik, A.U. 1986. Near-ground micro-climate of burned and unburned Calluna heathland. J. Environ. Manage. 23:157-171.
- Mallik, A.U.; Wein, R.W. 1986. Response of a Typha marsh community to draining, flooding, and seasonal burning. Can. J. Bot. 64:2136-2143. Raske, A.G.; Alvo, M. 1986. Vulnerability of forest
- types to spruce budworm damage in Newfoundland: an empirical approach based on large sample size. For. Ecol. Manage. 15:31-42
- Roberts, B.A.; Robertson, A. 1986. Salt marshes of Atlantic Canada: Their ecology and distribution. Can. J. Bot. 64(2):455-467.
- Robertson, A. 1986. Estimating mean windflow in hilly terrain from tamarack (Larix laricina [Du Roi] K. Koch) deformation. Int. J. Biometeorol. 30(4):333-349.
- Robertson, A. 1986. Teleforestry: utilizing tele-vision. For. Chron. 62(6):542-545.
- Shorthouse, J.D.; West, R.J. 1986. Role of the inquiline, Dasineura balsamicola (Diptera: Cecidomyiidae), in the balsam fir gall. Proc. Entomol. Soc. Ont. 117:1-7.
- Sidhu, S.S.; Staniforth, R.J. 1986. Effects of atmospheric fluorides on foliage, and cone and seed production in balsam fir, black spruce, and larch. Can. J. Bot. 64(5):923-931
- Yeh, F.C.; Khalil, M.A.K.; El-Kassaby, Y.A.; Trust, D.C. 1986. Allozyme variation in Picea mariana from Newfoundland: Genetic diversity, population structure, and analysis of differentiation. Can. J. For. Res. 16:713-720.

Other Publications / Autres publications

Program Review 1985-86. 44 p.

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Forestry Canada — Maritimes Forêts Canada — Maritimes

Information Reports / Rapports d'information

- Eidt, D.C.; Weaver, C.A.A. 1986. Frequency of forest respraying and use of B.t. in New Brunswick, 1975-1986. Inf. Rep. M-X-158.
- Eidt, D.C.; Weaver, C.A.A. 1986. Fréquence de répétition des traitements et utilisation de B.t. au Nouveau-Brunswick, 1975-1986. Rapp. d'inf. M-X-158.
- Estabrooks, G.F. 1986. Shearing balsam fir Christmas trees. Inf. Rep. M-X-160.
- Magasi, L.P. 1986. Forest pest conditions in the Maritimes 1985. Inf. Rep. M-X-159.
- Magasi, L.P. 1986. Situation des ravageurs forestiers dans les Maritimes en 1985. Rapp. d'inf. M-X-159F.
- Fowler, D.P. 1986. Strategies for the genetic improvement of important tree species in the Maritimes. Inf. Rep. M-X-156.
- Ostaff, D.P.; Newell, W.R. 1986. Early infection of larch populations by the European larch canker Lachnellula willkommii. Inf. Rep. M-X-157.

Journal Articles / Articles de revues scientifiques

- Ahern, J.J.; Bennett, W.J.; Kettela. E.G. 1986. An initial evaluation of two digital airborn imagers for surveying spruce budworm defoliation. Photogramm. Eng. Remote Sensing 52:1647-1654.
- Cox, R.M. 1986. Contamination and effects of cadmium in native plants. Exper. Suppl. (Basel) 50:101-109.
- Cox, R.M. 1986. In vitro and in vivo effects of acidity and trace elements in pollen function. Biotechnol. Ecol. Pollen. P. 95-100.
- Dumas, M.T.; Strunz, G.M.; Hubbes, M.; Jeng, R.S. 1986. Inhibition of *Ceratocystis ulmi* by mansonones A, C, D, E, F, and G isolated from *Ulmus americana*. Eur. J. For. Path. 16:217-222.
- Eidt, D.C.; Mallet, V.N. 1986. Accumulation and persistence of fenitrothion in needles of balsam fir and possible effects on abundance of *Neodiprion abietis* (Harris) (Hymenoptera: Diprionidae). Can. Entomol. 118:69-77.
- Eidt, D.C.; Pearce, P.A. 1986. The biological consequences of lingering fenitrothion residues in conifer foliage — a synthesis. For. Chron. 62(4): 246-249.
- Eidt, D.C.; Weaver, C.A.A. 1986. Effects of aminocarb and fenitrothion formulation on decomposition rate of balsam fir foliage in litterbags on the forest floor. Can. J. For. Res. 16:145-146.
- Gerhold, H.D.; Park, Y.S. 1986. Population hybridization in Scotch pine (*Pinus sylvestris* L.): II. Combining ability comparisons. Silvae Genet.

35:195-201.

- Mahendrappa, M.K. 1986. Abilities of organic horizons under some eastern Canadian forest stands to alter the acidity of rainwater. Can. J. For. Res. 16:18-22.
- Mahendrappa, M.K.; Foster, N.W.; Weetman, G.F.; Krause, H.H. 1986. Nutrient cycling and availability in forest soils. Can. J. Soil Sci. 66(4):547-572.
- Park, Y.S.; Gerhold, H.D. 1986. Population hybridization in Scotch pine (*Pinus sylvestris* L.): I. Genetic variance components and heterosis. Silvae Genet. 35(4):159-165.
- Percy, K. 1986. The effects of simulated acid rain on germinative capacity, growth and morphology of forest tree seedlings. New Phytol. 104:473-484.
- Riding, R.T.; Little, Č.H.A. 1986. Histochemistry of the dormant vascular cambium of Abies balsamea: changes associated with tree age and crown position. Can. J. Bot. 64:2082-2087.
- Strunz, G.M.; Giguère, P. 1986. The reaction of 3methyltricarballylic acid with anhydride. Addendum: On Fittig's product from acylative decarboxylation of camphoronic acid. Can. J. Chem. 64:204-205.
- Strunz, G.M.; Giguère, P.; Thomas, A.W. 1986. Synthesis of pungenin, a foliar constituent of some spruce species, and investigation of its efficacy as a feeding deterrent for spruce budworm (Choristoneura fumiferana [Clem.]). J. Chem. Ecol. 12(1): 251-260.
- Thomas, K.I.; Wall, R.E. 1986. Stem pitting and annual ring discoloration in yellow birch. Can. J. Bot. 64:2165-2167.
- Wall, R.E. 1986. Effects of black knot on pin cherry. Can. J. Plant Pathol. 8:71-77.
- Wall, R.E. 1986. Pathogenicity of Chrondrostereum purpureum to yellow birch. Plant Dis. 70:158-160.
- Worrall, J.; Little, C.H.A. 1986. An effect of gravity on bud-burst in balsam fir. Tree Physiology 1:47-52.
- Zagórska-Marek, B.; Little, C.H.A. 1986. Control of fusiform initial orientation in the vascular cambium of Abies balsamea stems by indol-3ylacetic acid. Can. J. Bot. 64:1120-1128.

Symposium Proceedings / Actes de symposiums

- Lanteigne, L.J.; Hallett, R.D., eds. 1986. Proc. Canadian Forest Tree Nursey Weed Control Workshop. 15-16 July 1985, Fredericton, New Brunswick.
- Lanteigne, L.J.; Methven, I.R. 1986. Cutover response of a fir-spruce stand in Central New Brunswick. Pages E17-E21 in preprint book, 67th annual meeting woodlands section, Canadian Pulp and Paper Association, Montreal, Jan. 28-29, 1986.

- MacLean, D.A.; Erdle, T.A. 1986. Development of relationships between spruce budworm defoliation and forest stand increment in New Brunswick. Pages 106-115 in S.S. Solomon and T.B. Brann, eds., Environmental Influences on Tree and Stand Increment. Proc. Mensuration, Growth and Yield Instruments and Methods in Forest Mensuration Workshop, Durham, NH, Sept. 23-27, 1985. Mahendrappa, M.K. 1986. Potential acidification of
- Mahendrappa, M.K. 1986. Potential acidification of black spruce (*Picea mariana* [Mill.] B.S.P.) sites due to intensive harvesting. Pages 165-171 in G.I. Agren, ed., Predicting Consequences of Intensive Forest Harvesting on Long-Term Productivity. Proc. IEA Workshop, Jädraas, Sweden, May 24-31, 1986. Rep. No. 26.

Other Publications / Autres publications

- Cameron, S.I. 1986. Energy conservation in greenhouse. II. Photoperiodic lighting. CFS-Maritimes Tech. Note No. 164.
- Cameron, S.I. 1986. Windbreaks for overwintering planting stock. CFS-Maritimes Tech. Note No. 163.
- Coady, L.J. 1986. Forest insects and diseases in Prince Edward Island National Parks in 1985. Tech. Note 155.
- Estabroks, G.F. 1986. Witches' broom on balsam fir. Tech. Note 150.
- Hallett, R.D.; Lanteigne, L.J. 1986. Forest tree nursery production and shipments in the Maritimes, 1985. CFS-Maritimes, Tech. Note No. 159.
- McCall, C.D. 1986. Forest insects and diseases in Kejimkujik National Park in 1985. Tech. Note 154.
- McKay, A.W. 1986. Forest insects and diseases in Cape Breton Highlands National Park in 1985. Tech. Note 153.

- Magasi, L.P. 1986. Highlights of forest pest conditions in the Maritimes at the end of July 1986. CFS-Maritimes, Tech. Note No. 160.
- Magasi, L.P. 1986. Highlights of forest pest conditions in the Maritimes at the end of June 1986. CFS-Maritimes, Tech. Note No. 158.
- Magasi, L.P. 1986. Highlights of forest pest conditions in the Maritimes in mid-June 1986. CFS-Maritimes, Tech. Note No. 157.
- Magasi, L.P. 1986. Highlights of forest pest conditions in the Maritimes in mid-September 1986. CFS-Maritimes, Tech. Note No. 162.
- Magasi, L.P. 1986. Some of the major pests in the forest of Nova Scotia in 1986. Tech. Note 166. Matheson, E.T.; Stewart, P.R. 1986. The effects of
- Matheson, E.T.; Stewart, P.R. 1986. The effects of spacing and site on outplanted white and black spruce in northwestern New Brunswick. Tech. Note 149.
- Meikle, O.A. 1986. Forert insects and diseases in Fundy National Park in 1985. Tech. Note 151.
- Meikle, O.A. 1986. Forest insects and diseases in Kouchibouguac National Park in 1985. Tech. Note 152.
- Newell, W.R. 1986. What's the problem? The detection, recognition, and sampling of tree pests. CFS-Maritimes Tech. Note No. 156.
- Pendrel, B.A.; Magasi, L.P. 1986. Spruce budworm defoliation on Prince Edward Island in 1986 and a forecast for 1987. Tech. Note 167.
 Pendrel, B.A.; Smith, T.D.; Magasi, L.P. 1986.
- Pendrel, B.A.; Smith, T.D.; Magasi, L.P. 1986. Spruce budworm defoliation in Nova Scotia - 1986. Tech. Note 165.
- Smith, R.F. 1986. Cone rust, a potential problem in white spruce seed orchards. CFS-Maritimes Tech. Note No. 161.
- Wall, R.E. 1986. Pin cherry and the black knot disease. Tech. Note 169.
- Wall, R.E. 1986. Stem defects in young yellow birch. Tech. Note. No. 148.
- Wall, R.E.; Simpson, R.A. 1986. Sirococcus shoote blight — a serious threat to red pine in the Maritimes. Tech. Note 168.

Laurentian Forestry Centre Centre de foresterie des Laurentides

Information Reports / Rapports d'information

- Lavallée, A. 1986. Les caries du sapin baumier dans le centre et le nord-est du Québec. Rapp. d'inf. LAU-X-70.
- Lavallée, A. 1986. Balsam fir decay in central and northeastern Quebec. Inf. Rep. LAU-X-70E.
- Popovich, S. 1986. Peuplier hybride Les premières tables de coefficients de forme et de tarifs de cubage au Québec. Rapp. d'inf. LAU-X-71.
- Popovich, S. 1986. Hybrid poplar The first form factor and volume tables for Quebec. Inf. Rep. LAU-X-71E.

Journal Articles / Articles de revues scientifiques

- Beaubien, J. 1986. Visual interpretation of vegetation through digitally enhanced LANDSAT-MSS images. Remote Sens. Rev. 2:111-143.
- Benhamou, N.; Ouellette, G.B. 1986. Caractérisation immunochimique du réseau fibrillaire entourant les cellules de l'Ascocalyx abietina et évaluation de son rôle potentiel au cours de l'infection. Phytoprotection 67:143 (résumé).
- Benhamou, N.; Ouellette, G.B. 1986. Ultrastructural localization of glycoconjugates in the fungus Ascocalyx abietina, the scleroderris canker agent of conifers, using lectin-gold complexes. J. Histochem. Cytochem. 34(7): 855-867.
- Benhamou, N.; Ouellette, G.B.; Gardiner, R.B.; Day, A.W. 1986. Immunocytochemical localization of antigen-binding sites in the cell surface of two ascomycete fungi using antibodies produced against fimbriae from Ustilago violacea and Rhodotorula rubra. Can. J. Microbiol. 32:871-883.
- Chamberland, H.; Charest, P.-M.; Pauzé, F.J.; Ouellette, G.B. 1986. Localisation ultrastructurale de la pectino-estérase de la tomate dans les racines du Lycopersicon esculentum infestées par le Fusarium oxysporum f. sp. radicislyco-pergici (FORL). Phytoprotection 67: 145 (résumé).
- Cloutier, C.; Baudin, F.; Quednau, F.W. 1986. A survey of air-borne aphids in Quebec by means of suction traps, with five new records for North America (Homoptera: Aphididae). Phytoprotection 67:55-61.
- D'Aoust, A.L.; Hubac, C. 1986. Effet de l'état du phytochrome sur l'efflux de solutés des disques de limbes foliaires de cotonnier. Can. J. Bot. 64: 2973-2975.
- D'Aoust, A.L.; Hubac, C. 1986. Phytochrome action and frost hardening in black spruce seedlings. Physiol. Plant. 67:141-144.
- Delisle, J.; McNeil, J.N. 1986. The effect of photoperiod on the behaviour of virgin females of the true armyworm, *Pseudaletia unipuncta* (Haw.) (Lepidoptera: Noctuidae). J. Insect Physiol. 32(3): 199-206.

- Desrochers, P.; Benhamou, N.; Ouellette, G.B. 1986. Inhibition de l'ophiostoma ulmi par les fibrilles d'un Ascomycète. Phytoprotection 67:146-147 (résumé).
- Laflamme, G. 1986. Essais de lutte au chancre scléroderrien en plantation de pin rouge. Phytoprotection 67:147-148 (résumé).
- Laflamme, G. 1986. Problems of scleroderris canker on black spruce (Abstract). Can. J. Plant. Pathol. 8(3):351.
- Laflamme, G. 1986. Symptôme inusité du chancre scléroderrien sur le pin rouge au Québec. Can. J. Plant Pathol. 8(1):1-5.
- Lavallée, A. 1986. Zones de vulnérabilité du pin blanc à la rouille vésiculeuse au Québec. For. Chron. 62:24-28.
- Legault, D.; Dessureault, M.; Laflamme, G. 1986. Endophytic fungi in pine needles and their relation to epiphytic fungi and scleroderris canker (Abstract). Can. J. Plant Pathol. 8:351-352. Rioux, D.; Ouellette, G.B. 1986. Étude microsco-
- Rioux, D.; Ouellette, G.B. 1986. Etude microscopique des relations de plantes non hôtes avec l'Ophiostoma ulmi, agent responsable de la maladie hollandaise de l'orme. Phytoprotection 67: 149-150 (résumé).
- Zarnovican, R. 1986. La loi d'Eichhorn et les tables de production pour l'épinette noire de l'est du Canada. For. Chron. 62(3):170-174.

Symposium Proceedings / Actes de symposiums

- Benhamou, N.; Ouellette, G.B. 1986. Étude ultrastructurale et caractérisation cytochimique du champignon Ascocalyx abietina, l'agent du chancre scléroderrien des conifères. 26^e Colloque annuel de la Société française de microscopie électronique, Nantes (France), juin 1986.
- Bertrand, L.; Héroux, R.; Beaubien, J. 1986. Possibilités et limites de différentes imageries-satellite pour la cartographie forestière (Résumé). Page 410 in 54° Congrès ACFAS, Univ. Montréal, 12-16 mai 1986. Ann. ACFAS (Ass. can. fr. av. sci.) Vol. 54.
- Bonneau, G.; Jobin, L.J. 1986. Détection et surveillance d'insectes forestiers nuisibles à l'aide du piège à phéromone Multi-Pher (Résumé). Page 140 in 2° Conf. intern. entomol. expression française, Univ. Québ. Trois-Rivières, 15-18 juillet 1986, Soc. Entomol. Qué.
- Chamberland, H.; Charest, P.M.; Pauzé, F.J.; Ouellette, G.B. 1986. Ultrastructural localization of the tomato pectin esterase in the root tissue of Lycopersicon esculentum infected by Fusarium oxysporum f. sp. radicislyco-pergici (FORL). Pages 18-19 in Proc. Micros. Soc. Can. 13th Annu. Meeting, Hamilton, Ont., June 1986. Microscop. Soc. Can., Toronto.

- Corriveau, A.; Beaubien, J.; Daoust, G. 1986. Activités de recherche du SCF en génétique et amélioration des arbres forestiers du Québec. Pages 87-92 in C.W. Yeatman and T.J.B. Boyle, compil., Comptes-rendus de la 20° conférence de l'Association canadienne pour l'amélioration des arbres: 1^{re} partie. Québec.
- Corriveau, A.; Beaulieu, J.; Daoust, G. 1986. Activités de recherche du SCF en génétique et amélioration des arbres forestiers au Québec. Pages 87-92 in Yeatman, C.M. et T.J.B. Boyle, réd., Comptes rendus de la 20° conférence de l'Association canadienne pour l'amélioration des arbres, 1™ partie, Québec, 19-22 août 1985.
- Corriveau, A.; Beaulieu, J.; Daoust, G. 1986. Génétique et amélioration des résineux: Progrès et perspectives. Pages 36-48 in Colloque sur l'amélioration génétique des essences forestières, 54° congrès ACFAS, Univ. Montréal, 12-19 mai 1986. Sec. Champlain Inst. For. Can.
- Corriveau, A.; Caron, F.; Boyle, T.J.B., rédacteurs/editors. 1986. Voies nouvelles en génétique forestières/New ways in forest genetics. Compterendu, 20° conférence ACAA-CTIC, 19-22 août 1985. Can. For. Serv., Can. Tree Improvement Assoc., Ottawa.
- Coster, J.E.; Lachance, D. 1986. Evaluation of the Canada-United States spruce budworms program organizational and administrative effectiveness. Pages 111-116 in Proc. IUFRO Evaluation and Planning of Forestry Research. USDA Forest. Serv. NE-GTR-111.
- Fleming, R.A.; Perry, D.F. 1986. Simulation as an aid to developing for forest pest management. Pages 694-698 in G.C. Vansteenkiste, E.J.H. Kerckhotts, L. Dekker, and J.C. Zuiderraart, eds., Proc. 2nd European Simulation Congress, Antwerp, Belgium, 9-12 September 1986. Soc. Computer Simulation, San Diego, CA.
- Gendreau, C. 1986. Historical considerations and evolution of the forest policies for small woodlot owners of Quebec. Page 659 in 18th IUFRO World Congress, Ljubljana, Yugoslavia, Sept. 1986. Congress Report, Voluntary Papers, Division 4.
- Hardy, Y. 1986. La tordeuse des bourgeons de l'épinette et la dynamique des communautés forestières du Québec (Résumé). Page 471 in 54^e congrès ACFAS, Univ. Montréal, 12-16 mai 1986. Ann. ACFAS (Ass. can. fr. av. sci.) Vol. 54.
- Jobin, L. 1986. Le piège Multi-Pher et la tordeuse des bourgeons de l'épinette (Résumé). Page 83 in 2° Conférence intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- 1986. Soc. Entomol. Qué. Jobin, L. 1986. Le piège Multi-Pher: Un piège à insectes aux fins multiples (Résumé). Page 139 in 2^a Conf. intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- Lachance, D. 1986. Le dépérissement des érablières: éléments de solution. Pages 120-125 in Dépérissement des érablières: Journée d'information sur l'acériculture, le 8 mai 1986. CPVQ Agdex 300/637, Québec.
- Lachance, D. 1986. Maple decline: toward a solution. Pages 113-117 in Maple Decline: Maple

Producers Information Session, May 8, 1986. CPVQ Agdex 300/637, Québec.

- Lachance, D. 1986. Role of insects and disease in forest decline. Pages 180-188 in Forest Decline Workshop, Wakefield, Québec, Oct. 20-22, 1986. Fed. LRTAP workshop No. 6. Can., Atmopheric Environ. Serv.
- Laflamme, G.; Lachance, D.; Ouellette, G.B.; Benhamou, N. 1986. Current Research on scleroderris canker in Québec (Abstract). 18th IUFRO World Congress, Yugoslavia.
- Lafontaine, R.; Newmann, P.; Laflamme, G. 1986. Identification des champignons endophytes des épinettes noires et relations possibles avec certaines maladies des aiguilles et des rameaux (Résumé). Page 54 in 54° Congrès de l'ACFAS, Univ. Montréal, 12-16 mai 1986. Ann. ACFAS (Ass. can. fr. av. sci.) Vol. 54.
- Latgé, J.P.; Perry, D.F.; Prévost, M.C.; Samson, R.A. 1986. Ultrastructural study of the formation and germination of the entomophthorales *Erynia* and *Coridiobolus*. Page 220 in R.A. Samson et al., eds., Fundamental and Applied Aspects of Invertebrate Pathology, Wageningen, Netherlands.
- Lavallée, R.; Morissette, J. 1986. Comparaison de cinq modèles de pièges à insectes avec phéromone pour la capture de Zeiraphera canadensis (Lepidoptera: Tortricidae) (Résumé). Page 141 in 2° Conf. intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- Perry, D.F. 1986. La lutte microbiologique et la tordeuse des bourgeons de l'épinette: les pathogènes naturels (Résumé). Page 82 in 2° Conf. intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- Perry, D.F.; Régnière, J. 1986. The role of fungal pathogens in spruce budworm population dynamics: Frequency and temporal relationships. Pages 167-170 in R.A. Samson et al., eds., Fundamental and Applied Aspects of Invertebrate Pathology, Wageningen, Netherlands.
- Régnière, J. 1986. Dynamique des populations de la tordeuse des bourgeons de l'épinette: Pourquoi encore toute cette recherche? (Résumé). Page 81 in 2° Conf. intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- Régnière, J. 1986. Les nouvelles approche scientifiques et techniques de l'entomologie: L'ordinateur comme adjoint de recherche (Résumé). Page 2 in 2° Conf. intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- Seuthé, C.; Dion, L.; Beaubien, J. 1986. Une approche géobotanique pour étudier la géologie du Cap Smith à partir de Landsat-MSS. Pages 591-600 in Dixième Symposium canadien sur la télédétection, Edmonton (Alberta), mai 1986. Can. Acronautics Space Inst., Ottawa.
- Ung, C.-H. 1986. Modèle de croissance de l'érablière à sucre basé sur la fonction de Weibull (Résumé). Page 411 in 54° congrès ACFAS, Univ. Montréal, 12-16 mai 1986. Ann. ACFAS (Ass. can. fr. av. sci.) Vol. 54.

- Valéro, J.R. 1986. Contrôle microbiologique des insectes forestiers nuisibles (Résumé). Page 275 in 2° Conf. intern. entomol. expression française, Univ. Qué. Trois-Rivières, 15-18 juillet 1986. Soc. Entomol. Qué.
- Entomol. Qué. Valéro, J.R. 1986. Nouveaux substrats de fermentation pour l'obtention de *Bacillus thuringiensis* (Résumé). Page 278 in 54° congrès ACFAS, Univ. Montréal, 12-16 mai 1986. Ann. ACFAS (Ass. can. fr. av. sci.) Vol. 54.
- Valéro, J.R. 1986. Similitudes entre le virus de la polyédrie nucléaire de la tordeuse des bourgeons de l'épinette et celui de la polyédrie nucléaire de la tordeuse du cerisier. Assoc. microbiol. Qué 10:12
- tordeuse du cerisier. Assoc. microbiol. Qué. 10:12. Zarnovican, R.; Ouellet, D. 1986. La croissance et la production du peuplier faux-tremble au Témiscouata. Pages 84-109 *in* Compte rendu du colloque de l'O.I.F.Q. sur la pérennité du peuplier en Abitibi-Témiscamingue, Val d'Or (Québec), 16 mai 1986.

Other Publications / Autres publications

- Beaubien, J.; Ouellet, J.; Giasson, G. 1986. CIP inc. utilise la télédétection par satellites. Opérations forestières et de scieries 2(21):28-34.
- Bélair, J.-L. 1986. Inventaire biophysique vs relevés pédologiques: leurs différences, leurs limites et leurs utilisations dans la forêt de demain. L'Aubelle 55(oct.-nov.):8-11.
- Benoit, P. 1986. Nomenclatura insectorum canadensium — Noms français d'insectes au Canada/ Insect Names in Canada: Supplementum. 114 p.
- Bonneau, G.; Picher, R.; Lachance, D. 1986. Insectes et maladies des arbres: Québec 1985. Forêt Conserv. 52(10) Suppl. 32 p.
- Gendreau, C. 1986. Union internationale des Sociétés d'ingénieurs forestiers. Newsletter 23 (février 1986).
- Gendreau, C. 1986. Union internationale des Sociétés d'ingénieurs forestiers. Newsletter 24 (juillet 1986).
- Hardy, Y.; Mainville, M.; Schmitt, D.M. 1986. An atlas of spruce budworm defoliation in eastern

North America, 1938-1980. USDA Forest Serv. Spruce Budworms Handbook, Publ. 1449. 52 p.

- Lavallée, A. 1986. Les risques d'infection par la rouille vésiculeuse du pin blanc. Service canadien des forêts, Centre de foresterie des Laurentides, Sainte-Foy (QC). Feuil. d'inf. CFL-23. 4 p.
- Sainte-Foy (QC). Feuil. d'inf. CFL-23. 4 p. Lavallée, A. 1986. White pine blister rust hazard zones. Can. For. Serv., Laurentian For. Centre, Sainte-Foy, Que. Inf. Leaf. LFC-23E. 4 p.
- Sainte-Foy, Que. Inf. Leaf. LFC-23E. 4 p. Lavallée, A. 1986. Protection pré-hivernale des arbres. Feuillet d'information CFL 20. 8 p.
- Lavallée, A. 1986. Preparing trees for winter. Information leaflet LFC 20E. 8 p.
- Paradis, I; Roberge, M.R. 1986. Dépérissement des érablières, toujours pas de solutions. La Terre de Chez-nous (25 sept):2.
- Pinault, L.; Roberge, M.R. 1986. Un remède pour sols appauvris. For. Conserv. 53(7):16-18.
- Program review 1984-1986. 60 p.
- Revue des programmes 1984-1986. 60 p.
- Roberge, M.R. 1986. Comment régénérer naturellement nos forêts. Annales de l'ACFAS 54:411.
- Roberge, M.R. 1986. Les méthodes de coupe et leurs conséquences sur l'écologie des sols forestiers. Annales de l'ACFAS 54:416.
- Roberge, M.R.; Vézina, P.E. 1986. La coupe par groupes ou par bandes — Supplément d'information. Forêt Conserv. 53(7):6.
- Roberge, M.R.; Vézina, P.E. 1986. La préparation du terrain. Forêt Conserv. 53(6):31.
- Roberge, M.R.; Vézina, P.E. 1986. Le choix et le marquage des arbres. Forêt Conserv. 53(2):7-8.
- Roberge, M.R.; Vézina, P.E. 1986. Les tiges d'avenir. Forêt Conserv. 52(10):25.
- Vézina, P.E.; Roberge, M.R. 1986. La sylviculture en temps de crise. Forêt Conserv. 53(1):40.
- Vézina, P.E.; Roberge, M.R. 1986. Le comment et le pourquoi de la sylviculture. Forêt Conserv. 52(9):7-8.
- Vézina, P.E.; Roberge, M.R. 1986. Les responsabilités et les défis du sylviculteur. Forêt Conserv. 53(7):6-8.
- Vézina, P.E.; Roberge, M.R. 1986. Quand sylviculture et exploitation s'affrontent. Forêt Conserv. 53(5):8.
- Vézina, P.E.; Roberge, M.R. 1986. Sylviculture et agriculture: une même approche. Forêt Conserv. 53(3):7-8.

Petawawa National Forestry Institute Institut forestier national de Petawawa

Information Reports / Rapports d'information

- Bonnor, G.M.; Magnussen, S. 1986. Inventory and growth predictions of the Petawawa Forest. Inf. Rep. PI-X-66.
- Bonnor, G.M.; Magnussen, S. 1986. Inventaire et prévisions de croissance de la forêt de Petawawa. Rapp. d'inf. PI-X-66F.
- Boyle, T.J.B. 1986. Ten-year height growth of openpollinated black spruce families in Ontario. Inf. Rep. PI-X-61.
- Boyle, T.J.B. 1986. Croissance décennale en hauteur de familles d'épinettes noires obtenues par pollinisation libre en Ontario. Rapp. d'inf. PI-X-61F.
- Burgess, D.; Chatarpaul, L.; Hendrickson, O. 1986. Field performance of Frankia-inoculated and noninoculated alders (Alnus spp.): Preliminary results. Inf. Rep. PI-X-67.
- Burgess, D.; Chatarpaul, L.; Hendrickson, O. 1986. Accroissement d'aulnes (Alnus spp.) inoculées ou non avec Frankia: résultats préliminaires. Rapp. d'inf. PI-X-67F.
- Fogal, W.H.; Mittal, R.K.; Thurston, G.S. 1986. Production and evaluation of Beauveria bassiana for control of white spruce cone and seed insects. Inf. Rep. PI-X-69.
- Fogal, W.H.; Mittal, R.K.; Thurston, G.S. 1986. Production et évaluation qualitative de Beauveria bassiana pour la lutte contre les insectes s'attaquant aux cones et aux semences de l'épinette blanche. Rapp. d'inf. PI-X-69F. Mroske, B.E.; Kourtz, P.H. 1986. UHF radio
- transmission of forestry data. Inf. Rep. PI-X-63.
- Mroske, B.E.; Kourtz, P.H. 1986. Transmission de données forestières par radio à ultra-haute fréquence. Rapp. d'inf. PI-X-63F.
- Murray, W.G. 1986. Air tanker and helitanker use in Canada 1978-1984. Inf. Rep. PI-X-68.
- Murray, W.G. 1986. Utilisation d'avions-citernes et d'hélicoptères-citernes au Canada de 1978 à 1984. Rapp. d'inf. PI-X-68F
- Power, J.M. 1986. FIDSINFOBASE: The Forest Insect and Disease Survey Information System. Inf. Rep. PI-X-65.
- Power, J.M. 1986. FIDSINFOBASE: Système d'information sur le relevé des insectes et des maladies des arbres. Rapp. d'inf. PI-X-65F.
- Ramsey, G.S.; Higgins, D.G. 1986. Canadian forest fire statistics, 1981, 1982, 1983. Inf. Rep. PI-X-49E/F.
- Ramsey, G.S.; Higgins, D.G. 1986. Statistiques sur les incendies de forêt au Canada, 1981, 1982, 1983. Rapp. d'inf. PI-X-49E/F.
- Stiell, W.M. 1986. Fifteen-year growth of tamarack planted at six spacings on an upland site. Inf. Rep. PI-X-62.
- Stiell, W.M. 1986. Croissance du mélèze laricin

planté à six espacements en terrain élevé au cours des 15 premières années. Rapp. d'inf. PI-X-62F.

- Stechishen, E. 1986. Dromader M-18 load transposition. Inf. Rep. PI-X-64.
- Stechishen, E. 1986. Transposition du chargement du Dromader M-18. Rapp. d'inf. PI-X-64F.

Journal Articles / Articles de revues scientifiques

- Alemdag, I.S. 1986. Estimating ovendry mass of trembling aspen and white birch using measurements from aerial photographs. Can. J. For. Res. 16(1):163-165.
- Bird, G.A.; Chatarpaul, L. 1986. Effect of whole-tree and conventional forest harvest on soil microarthropods. Can. J. Zool. 64(9):1986-1993.
- Boyle, T.J.B.; Morgenstern, E.K. 1986. Estimates of outcrossing rates in six populations of black spruce in central New Brunswick. Silvae Genet. 35(2-3):102-106.
- Brand, D.G. 1986. A competition index for predicting the vigour of planted Douglas-fir in southwestern British Columbia. Can. J. For. Res. 16(1): 23 - 29
- Brand, D.G. 1986. Competition-induced changes in developmental features of planted Douglas-fir in southwestern British Columbia. Can. J. For. Res. 16(2):191-196.
- Brand, D.G.; Kehoe, P.; Connors, M. 1986. Coniferous afforestation leads to soil acidification in central Ontario. Can. J. For. Res. 16(6):1389-1391.
- Brand, D.G.; Weetman, G.F. 1986. Standards for regeneration establishment in Canada: a case study for Douglas-fir, For. Chron. 62(2):84-90.
- Flannigan, M.D.; Harrington, J.B. 1986. Synoptic weather conditions during the Porter Lake experimental fire project. Climatol. Bull. 21(1):19-20.
- Flannigan, M.D.; Vonder Haar, T.H. 1986. Forest fire monitoring using NOAA satellite AVHRR. Can. J. For. Res. 16(5):975-982.
- Fogal, W.H.; Thurston, G.S.; Chant, G.D. 1986. Reducing seed losses to insects by treating white spruce conelets with conidiospores of Beauveria bassiana. Proc. Entomol. Soc. Ont. 117:95-98.
- Harrington, J.B.; Newark, M.J. 1986. The interaction of a tornado with rough terrain. Weather 41(10):310-318.
- Hendrickson, O.Q. 1986. Invasion of clear-cuttings by the actinorhizal plant Comptonia peregrina. Can. J. For. Res. 16(4):872-874.
- Magnussen, S. 1986. Diameter distributions in Picea abies described by the Weibull model. Scand. J. For. Res. 1:493-502.
- Magnussen, S. 1986. Effects of root-coating with the polymer waterlock on survival and growth of drought-stressed bareroot seedlings of white spruce (Picea glauca [Mœnch] Voss) and red pine

(Pinus resinosa Ait.). Tree Planter's Notes 37(1):15-19.

- Magnussen, S.; Smith, V.G.; Yeatman, C.W. 1986. Foliage and canopy characteristics in relation to aboveground dry matter increment of seven jack pine provenances. Can. J. For. Res. 16(3):464-470.
- Mittal, R.K. 1986. Studies on the mycoflora and its control on the seeds of some forest trees: III. Eucalyptus hybrid. Malays. For. 49(2):151-159.
- Mittal, R.K.; Wang, B.S.P. 1986. Emergence failure and top decay in white spruce germinants due to three fungi, Can. Plant Dis. Surv. 66(1):5-6.
- Péch, G. 1986. Mobile sampling of solar radiation under conifers. Agric. For. Meteorol. 37:15-28.
- Pitel, F.A.; Cheliak, W.M. 1986. Effectiveness of protective agents for increasing activity of five enzymes from vegetative tissues of white spruce. Can. J. Bot. 64(1):39-44.
- Pitel, J.A.; Cheliak, W.M. 1986. Enzyme activities during imbibition and germination of seed of tamarack (Larix laricina). Physiol. Plant. 67:562-569.
- Schooley, H.O.; Winston, D.A.; Macnaughton, R.L.; Anderson, M.L. 1986. Frost killing of red pine female flowers. For. Chron. 62(3):140-142.
- Stiell, W.M.; Berry, A.B. 1986. Productivity of short-rotation aspen stands. For. Chron. 62(1):10-15.
- Tremblay, F.M.; Perinet, P.; Lalonde, M. 1986. Tissue culture of Alnus spp. with regard to symbiosis. Pages 87-100 in Bajaj, Y.P.S., ed., Biotechnoloty in agriculture and forestry 1: Trees I. Springer-Verlag, Berlin.

Symposium Proceedings / Actes de symposiums

- Canadian Forest Inventory Committee. 1986. Workshop proceedings: Forest resource data bases, 1996. Fredericton, N.B., June 4, 1986. 43 p.
- Comité canadien de l'inventaire forestier. 1986. Compte rendu d'atelier: Bases de données sur les ressources forestières, 1996. Fredericton (N.-B.), le 4 juin 1986. 46 p.
- Flannigan, M.D.; Vonder Haar, T.H. 1986. Forest fire monitoring using the NOAA satellite series. Pages 168-172 in Preprint Volume, Second Conference on Satellite Meteorology/Remote Sensing and Applications, May 13-16, Williams-burg, VA. American Meteorological Society, Boston, MA.
- Fogal, W.H. 1986. Applying Beauveria bassiana (Bals.) Vuill. to soil for control of the spruce cone Maggot Lasiomma anthracina (Czerny). Pages 257-266 in Proc. IUFRO Cone and Seed Insects Working Party Conference, Briançon, France, Sept. 3-5, 1986.
- Fogal, W.H. 1986. 1986. Insect management on spruce and pine. Page 253 in Yeatman, C.W. and

T.J.B.Boyle, eds., Proc. 20th Meeting Can. Tree

- Improv. Assoc., Part 1, Québec.
 Kimmins, J.P; Scoullar, K.A.; Bigley, R.E.; Kurz,
 W; Comeau, P.G.; Chatarpaul, L. 1986. Yield
 prediction models: the need for a hybrid ecosystem-level approach incorporating canopy function and architecture. Pages 26-48 in Fujimori, T. and D. Whitehead, eds., Crown and Measure of Image Texture. IEEE Trans. Pattern Anal. Machine Intell., PAMI-7(6):734-738.
- Leckie, D.G. 1986. Advanced technology in the assessment and management of damaged forests. Pages 178-189 in Proc. 18th IUFRO World congress, Div. 6.
- Leckie, D.G. 1986. Practical forestry applications of remote sensing in North America: Present and future. Pages 51-65 in Sohlberg, S. and Sokolov, V.E, eds, Practical Applications of Remote Sensing in Forestry. Martinus Nijhoff Publishers,
- Dordrecht, Boston, Lancaster. Magnussen, S.; Yeatman, C.W. 1986 Accelerated testing of jack pine: a case study. Pages 107-122 in Proc. IUFRO/North Carolina State Univ. Conference on Breeding Theory/Progeny Testing/Seed Orchards, Williamsburg, VA, Oct. 13-17, 1986. Stiell, W.M. 1986. Development of white spruce
- plantations at the Petawawa National Forestry Institute, Chalk River, Ont. Pages 15-20 in M. Murray, ed., The Yield Advantages of Artificial Regeneration at High Latitudes. USDA Forest Serv., Pacific N.W. Res. Stn., Gen. Tech. Rep. PNW-194.
- Treitz, P.M.; Howarth, P.J.; Leckie, D.G. 1986. The capabilities of two airborne multispectral sensors for classifying coniferous forest species. Pages 335-350 in Proc. 19th International Symposium on Remote Sensing of Environment, Ann Arbor, MI, October 21-25, 1985.
- Tremblay, M. F.; Lalonde, M. 1986. Variations du patron des protéines au cours de l'acclimatation au froid d'Alnus. Pages 131 in F. Caron, A.G. Corriveau, and T.J.B. Boyle, eds., Proc. 20th Meeting CTIA, Part 2, Québec, August 19-22, 1985.
- Van Wagner, C.E. 1986. Catastrophic losses Strategies for recovery. Pages 85-97 in Proc. Annual Meeting of the Western Forestry and Conservation Association, Vancouver, B.C., 1986.
- Wang, B.S.P. 1986. Cone collection and seed processing. Page 254 in C.W. Yeatman, and T.J.B. Boyle, eds., Proc. 20th Meeting Can. Tree Improv. Assoc., Part 1, Québec.

Other Publications / Autres publications

Program Review, 1984-85. 64 p. Recent Achievements at Petawawa. Réalisations récentes à l'IFNP.

Forest Pest Management Institute Institut pour la répression des ravageurs forestiers

Information Reports / Rapports d'information

- de Groot, P. 1986. Cone and twig beetles (Coleoptera: Scolytidae) of the genus Conophthorus: An annotated bibliography. Inf. Rep. FPM-X-76.
- de Groot, P. 1986. Scolytes des cônes et des rameaux (Coléoptères: Scolytidae) du genre conophthorus: une bibliographie annotée. Rapp. d'inf. FPM-X-76F.
- de Groot, P. 1986. Diptera associated with cones and seeds of North American conifers: an annotated bibliography. Inf. Rep. FPM-X-69.
- Feng, J.Č.; Klassen, H.D. 1986. Forestry field and laboratory manual for herbicide residue sampling, sample processing and reporting. Inf. Rep. FPM-X-72.
- Feng, J.C.; Klassen, H.D. 1986. Manuel des pratiques de foresterie sur le terrain et en laboratoire pour le prélèvement, le traitement et l'enregistrement d'échantillons de résidus d'herbicides. Rapp. d'inf. FPM-X-72F.
- Payne, N.; Helson, B.; Sundaram, K.; Kingsbury, P.; Fleming, R.; de Groot, P. 1986. Estimating the buffer required around water during permethrin applications. Inf. Rep. FPM-X-70.
- Payne, N.; Helson, B.; Sundaram, K.; Kingsbury, P.; Fleming, R.; de Groot, P. 1986. Délimitation des zones tampons autour des plans d'eau lors des épandages de perméthrine. Rapp. d'inf. FPM-X-70F.
- Sundaram, K.M.S. 1986. Persistence and degradation of diflubenzuron in conifer foliage, forest litter and soil, following simulated aerial application. Inf. Rep. FPM-X-74.
- Sundaram, K.M.S. 1986. Persistance et dégradation du diflubenzuron dans le feuillage des conifères, la litière et le sol forestiers, après simulation d'un traitement du haut des airs. Rapp. d'inf. FPM-X-74F.
- Sundaram, K.M.S.; Nott, R. 1986. Persistence of fenitrothion residues in a conifer forest environment. Inf. Rep. FPM-X-75.
- ment. Inf. Rep. FPM-X-75. Sundaram, K.M.S.; Nott, R. 1986. Rémanence des résidus de fénitrothion dans l'environnement d'une forêt de conifères. Rapp. d'inf. FPM-X-75F.
- Sundaram, K.M.S.; Nott, R.; Holmes, S.B.; Boyonoski, N. 1986. The distribution and fate of mexacarbate in a forest aquatic ecosystem. Inf. Rep. FPM-X-73.
- Sundaram, K.M.S.; Nott, R.; Holmes, S.B.; Boyonoski, N. 1986. Distribution et devenir du méxacarbate dans un écosystème aquatique forestier. Rapp. d'inf. FPM-X-73F.
- Wilson, G.G. 1986. A comparison of the effects of Nosema fumiferanae and a Nosema sp. (Microsporida) on Choristoneura fumiferana (Clem.) and Choristoneura pinus pinus Free. Inf. Rep. FPM-X-77.

Wilson, G.G. 1986. Comparaison des effets de Nosema fumiferanae et d'une autre microsporidie du genre Nosema sur Choristoneura fumiferana (Clem.) et Choristoneura pinus pinus Free. Rapp. d'inf. FPM-X-77F.

Journal Articles / Articles de revues scientifiques

- Arif, B.M. 1986. Dialysis of small volumes. Biotechniques. 4(6):499.
- Arif, B.M. 1986. The structure of the viral genome. Curr. Top. Microbiol. and Immun. 131:21-29.
- Arif, B.M.; Guangyu, Z.; Jamieson, P. 1986. A comparison of three granulosis viruses isolated from *Choristoneura* spp. J. Invetebr. Pathol. 48:180-186.
- Cadogan, B.L. 1986. Control of spruce budworm (Lepidoptera: Tortricidae) in Eastern Canada with the experimental mexacarbate formulation Zectran UCZF19. J. Econ. Entomol. 79:726-730.
- Cadogan, B.L. 1986. Relative field efficacies of Sumithion 20% flowable and Sumithion technical formulations against spruce budworm, *Choristoneura fumiferana* (Lepidoptera: Tortricidae). Can. Entomol. 118: 1143-1149.
- Cadogan, B.L.; Zylstra, B.F.; Nystrom, C.; Ebling, P.M.; Pollock, L.B. 1986. Evaluation of a new Futura formulation of *Bacillus thuringiensis* on populations of jack pine budworm, *Choristoneura pinus pinus* (Lepidoptera: Tortricidae). Pages 59-64 in Proc. Entomol. Soc. Ont. vol. 117.
- Cadogan, B.L.; Zylstra, B.F.; Nystrom, C.; Pollock, L.B.; Ebling, P.M. 1986. Spray deposits and drop size spectra from a high wing monoplane fitted with rotary atomizers. Trans. ASAE 29(2):402-406.
- Cunningham, J.C.; de Groot, P.; Kaupp, W.J. 1986. A review of aerial spray trials with Lecontvirus for control of redheaded pine sawfly, *Neodiprion lecontei* (Hymenoptera: Diprionidae), in Ontario. Proc. Entomol. Soc. Ont, 117:65-72.
- Helson, B.V.; Surgeoner, G.A. 1986. Efficacy of cypermethrin for the control of mosquito larvae and pupae, and impact on non-target organisms, including fish. J. Am. Mosquito Cont. Assoc. 2 (3):269-275.
- Helson, B.V.; Kingsbury, P.D.; de Groot, P. 1986. The use of bioassays to assess aquatic arthropod mortality from permethrin drift deposits. Aquat. Toxicol. 9:253-262.
- Payne, N.J.; Schaefer, G.W. 1986. An experimental quantification of coarse aerosol deposition on wheat. At. Spray Technol. 2:45-71.
- Percy, J.; Kuhn, K.L.; Kalthoff, K. 1986. Scanning electron microscopic analysis of spontaneous and UV-induced abnormal segment patterns in *Chironomus samoensis* (Diptera: Chironomidae). Roux's Arch. Dev. Biol. 195:92-102.

- Sundaram, A.; Leung, J.W. 1986. A simple method to determine relative volatilities of aqueous formulations of pesticides. J. Environ. Sci. Health Part B 21(2):165-190.
- Sundaram, K.M.S.; Sundaram, A.; Nott, R. 1986. Mexacarbate deposits on simulated and live fir needles during an aerial spray trial. Trans. ASAE 29(2):382-388 & 392.
- Turgeon, J.J. 1986. The phenological relationship between the larval development of the spruce budmoth, Zeiraphera Canadensis (Lepidoptera: Olethreutidae), and white spruce in northern New Brunswick. Can. Entomol. 118:345-350.
- Van Frankenhuyzen, K.; Geen, G.H. 1986. Microbemediated effects of low pH on availability of detrital energy to a shredder, *Clistoronia magnifica* (Trichoptera: Limnephilidae). Can. J. Zool. 64: 421-426.
- Wilson, G.G. 1986. The effects of Vairimorpha necatrix (Microsporida) on the spruce budworm, Choristoneura fumiferana (Lepidoptera: Tortricidae). Proc. Entomol. Soc. Ont. 117:91-93.

Symposium Proceedings / Actes de symposiums

de Groot, P. 1986. Mortality factors of jack pine, Pinus banksiana Lamb., strobili. Pages 39-52 in Proc. IUFRO Cone and Seed Insects Working Party SZ07.01 Conference, Briançon, France, Sept. 3-5, 1986.

Other Publications / Autres publications

- Bulletin de l'Institut pour la répression des ravageurs forestiers. Vol. 5, n° 1, mars 1986. 10 p.
- Bulletin de l'Institut pour la répression des ravageurs forestiers. Vol. 5, n° 2. 7 p.
- Forest Pest Management Institute Newsletter. Vol. 5, No. 1, March 1986. 10 p.
- Forest Pest Management Institute Newsletter. Vol. 5, No. 2. 7 p.
- Cunningham, J.C.; McPhee, J.R. 1986. Production of sawfly viruses in plantations. Technical Note No. 4. 4 p.

Program Review 1985-86.

- Retnakaran, A. 1986. Chitin biosynthesis in insects and its disruption as a means of pest control. Pages 147-163 in Muzzarelli et al., Chitin in Nature and Technology, Plenum Publ. Corp.
- Sundaram, A. 1986. Understanding volatilities of forestry spray mixtures from their viscosities and viscosity-temperature relationships. Pages 37-55 in L.D. Spicer and T.M. Kaneko, eds., Pesticide Formulations and Application Systems: Fifth Volume, ASTM STP 915. American Society for Testing and Materials, Philadelphia, PA.

Great Lakes Forestry Centre Centre de foresterie des Grands Lacs

Information Reports / Rapports d'information

- Barron, D.E.; Smyth, J.H.; Campbell, K.L.; Martel, J.-P. 1986. Forest management expenditures in Canada, 1977-1983. Joint Report No. 9.
- Myren, D.T.; Dorworth, E.B. 1986. Names and authors used for fungi at the Great Lakes Forestry Centre. Inf. Rep. O-X-376.
- Payandeh, B. 1986. Predictability of site index from soil factors and lesser vegetation in northern Ontario forest types. Inf. Rep. O-X-373.
- Payandeh, B.; Field, J.E. 1986. Yield functions and tables for mixedwood stands of northwestern Ontario. Inf. Rep. O-X-375.
- Puttock, G.D.; Smith, C.R. 1986. An evaluation of site preparation with the Donaren 180D Powered Disc Trencher on full-tree logged sites. Inf. Rep. O-X-372.
- Scarratt, J.B. 1986. An evaluation of some commercial soluble fertilizers for culture of jack pine container stock. Inf. Rep. O-X-377.
- Smyth, J.H.; Brownwright, A.J. 1986. Forest tree production centres in Canada — 1984. Inf. Rep. O-X-378.
- Von Althen, F.W. 1986. Effects of planting date on outplant performance of cold-stored and freshlifted black walnut, red oak and silver maple seedlings. Inf. Rep. O-X-374.

Journal Articles / Articles de revues scientifiques

- Albini, F.A.; Stocks, B.J. 1986. Predicted and observed rates of spread of crown fires in immature jack pine. Combust. Sci. and Tech. 48:65-76.
- Basham, J.T. 1986. Biological factors influencing stem deterioration rates and salvage planning in balsam fir killed after defoliation by spruce budworm. Can. J. For. Res. 16:1217-1229.
- Cayford, J.H. 1986. Historical highlights 1958-1983 Canadian Institute of Forestry. For. Chron. 62(4):255-261.
- Foster, N.W.; Beauchamp, E.G. 1986. Nitrogen release from urea and sulfur-coated urea in jack pine forest humus. Soil Sci. Soc. Am. J. 50(1):226-229.
- Foster, N.W.; Morrison, I.K. 1986. Growth response of a boreal black spruce stand to fertilizer treatments. North. J. Appl. For. 3:142-144. Foster, N.W.; Morrison, I.K.; Nicolson, J.A. 1986.
- Foster, N.W.; Morrison, I.K.; Nicolson, J.A. 1986. Acid deposition and ion leaching from a podzolic soil under hardwood forest. Water Air Soil Pollut. 31:879-889.
- Foster, N.W.; Nicolson, J.A. 1986. Trace elements in the hydrologic cycle of a tolerant hardwood forest ecosystem. Water Air Soil Pollut. 31:501-508.
- McRae, D.J. 1986. Prescribed burning for stand conversion in budworm-killed balsam fir: an Ontario

case history. For. Chron. 62(2):96-100.

- Morrison, I.K.; Hogan, G.D. 1986. Trace element distribution within the tree phytomass and forest floor of a tolerant hardwood stand, Algoma, Ontario. Water Air Soil Pollut. 31:493-500.
- Payandeh, B.; Ek, A.R. 1986. Distance methods and density estimators. Can. J. For. Res. 16:918-924.
- Sanders, C.J. 1986. Accumulated dead insects and killing agents reduce catches of spruce budworm (Lepidoptera: Tortricidae) male moths in sex pheromone traps. J. Econ. Entomol. 79:1351-1353.
- Sanders, C.J. 1986. Evaluation of high-capacity, nonsaturating sex pheromone traps for monitoring population densities of spruce budworm (Lepidoptera: Tortricidae). Can. Entomol. 118(7):611-619.
- Sutton, R.F. 1986. Hexazinone Gridballs^{**} applied with concurrent underplanting of white spruce in boreal mixedwoods: 7-year results. For. Chron. 62(4):226-232.
- von Althen, F.W.; Prince, F.A. 1986. Black walnut (Juglans nigra L.) establishment: Six-year survival and growth of containerized and 1 + 0 seedlings. Tree Planter's Notes 37(1):11-14.

Symposium Proceedings / Actes de symposiums

- Cayford, J.H.; Sullivan, C.R. 1986. Evaluating scientists in Canada. Pages 107-110 in Denver, P. Burns, comp., Proc. IUFRO: Evaluation and Planning of Forestry Research. International Union of Forestry Research Organizations (S6.06-S6.06.01); Fort Collins, CO, 25-26 July 1985. NE-GTR-111. USDA For. Serv., Northeast. For. Exp. Stn., Broomall, PA. 156 p.
- Stn., Broomall, PA. 156 p. Nealis, V.G. 1986. Responses to host kairomones and foraging behavior of the insect parasite *Cotesia rubecula* (Hymenoptera: Braconidae). Can. J. Zool. 64:2393-2398.
- Sims, R.A. 1986. Developing a forest ecosystem classification for the north central region of Ontario. Pages 101-113 in H. Van Groenewound, Comp., Forest Site Classification Methods. Proc. IUFRO Working Party on Site Classification and Evaluation Workshop, Fredericton, N.B.
- tion Workshop, Fredericton, N.B. Wickware, G.M.; Stevens, W.C., 1986. Site classification in relation to forest management. COJFRC Symp. O-P-14, 142 p.

Other Publications / Autres publications

- Biggs, W.D.; Payne, S.G. 1986. Results of forest insect and disease surveys in the North Central Region of Ontario, 1985. Misc. Rep. No. 37. 34 p. Brodersen, H.; Evans, H.J. 1986. Results of forest
- Brodersen, H.; Evans, H.J. 1986. Results of forest insect and disease surveys in the Southwestern Region of Ontario, 1985. Misc. Rep. No. 42, 25 p.

13

- Constable, D.C.; Jansons, V. 1986. Results of forest insect and disease surveys in the Northwestern Region of Ontario, 1985. Misc. Rep. No. 36. 32 p.
- Evans, J.H.; Sajan, R.J.; Brodersen, H. 1986. Results of forest insect and disease surveys in the
- Central Region of Ontario, 1985. Rep. No. 41. 35 p. Ingram, W. 1986. Results of forest insect and disease surveys in the Eastern Region of Ontario, 1985. Misc. Rep. No. 43. 33 p.
- MacLeod, L.S.; Jones, C.G.; Keizer, A.J. 1986. Results of forest insect and disease surveys in the Northern Region of Ontario, 1985. Misc. Rep. No. 38. 45 p.
- MacNaughton, R.L., comp. 1986. Unemployment Insurance/Job Creation Program Forestry Sector in Ontario. Final Report. Misc. Rep. No. 44. 21 p. + appendices
- Program Review 1985-86. 63 p.
- Sajan, R.J.; Smith, B.E. 1986. Results of forest insect and disease surveys in the Algonquin Region of Ontario, 1985. Misc. Rep. No. 40. 45 p.
- Survey Bulletin. Forest Insect and Disease Conditions in Ontario. Fall 1986. 32 p.
- Survey Bulletin, Forest Insect and Disease Conditions in Ontario. Spring 1986. 10 p.
- Survey Bulletin, Forest Insect and Disease Conditions in Ontario. Summer 1986. 31 p.
- Survey Bulletin. Forest Insect and Disease Conditions in Ontario. Fall 1986. 32 p.
- Thomson, M.J.; Czerwinski, E.J.; MacLeod, L.S.; Payne, S.G. 1986. Results of forest insect and

disease surveys in the Northeastern Region of

- Ontario, 1985. Misc. Rep. No. 39. 49 p. Thomson, M.J.; Evans, H.J.; Constable, D.C.; Jones, C.G.; MacLeod, L.S. 1986. A review of important forest insect and disease problems in the Terrace Bay District of Ontario, 1950-1980. Misc. Rep. No. 47.
- Thomson, M.J., MacLeod, L.S.; Evans, H.J.; Constable, D.C.; Jones, C.G. 1986. A review of important forest insect and disease problems in the Geraldton District of Ontario, 1950-1980. Misc. Rep. No. 46. 102 p. + appendices.
- Weir, H.J.; Thomson, M.J.; Constable, D.C.; Brodersen, H. 1986. A review of important forest insect and disease problems in the Chapleau District of Ontario, 1950-1980. Misc. Rep. No. 33.
- Weir, H.J.; Thomson, M.J.; Constable, D.C.; Brodersen, H. 1986. A review of important forest insect and disease problems in the Hearst District
- of Ontario, 1950-1980. Misc. Rep. No. 45. Weir, H.J.; Thomson, M.J.; Constable, D.C.; Brodersen, H. 1986. A review of important forest insect and disease problems in the Kapuskasing District of Ontario, 1950-1980. Misc. Rep. No. 35.
- Weir, H.J.; Thomson, M.J.; Constable, D.C.; Brodersen, H. 1986. A review of important forest insect and disease problems in the Kirkland Lake District of Ontario, 1950-1980. Misc. Rep. No. 34.
- Who's who at the Great Lakes Forestry Centre 1986. 27 p.

Northern Forestry Centre Centre de foresterie du Nord

Information Reports / Rapports d'information

- Addison, P.A.; L'Hirondelle, S.J.; Maynard, D.G.; Malhotra, S.S.; Khan, A.A. 1986. Effects of oil sands processing emissions on the boreal forest. Inf. Rep. NOR-X-284.
- Ball, W.J.; Kolabinski, V.S. 1986. Performance of container and bare-root stock on prescribed burns in Saskatchewan. Inf. Rep. NOR-X-283.
- Bohning, R.A. 1986. The forest industry in the economy of the Northwest Territories, 1980-81. Inf. Rep. NOR-X-277.
- Cerezke, H.F.; Holmes, R.E. 1986. Control studies with carbofuran on seed and cone insects of white spruce. Inf. Rep. NOR-X-280.
- Feng, J.C.; Klassen, H.D. 1986. Forestry field and laboratory manual for herbicide residue sampling, sample processing and reporting. Inf. Rep. FPM-X-72.
- Feng, J.C.; Klassen, H.D. 1986. Manuel des pratiques de foresterie sur le terrain et en laboratoire pour le prélèvement, le traitement et l'enregistrement d'échantillons de résidus d'herbicides. Rapp. d'inf. FPM-X-72F.
- Harvey, E.M. 1986. Proceedings of the 1984 Prairie Federal-Provincial Nurserymen's Meeting. Inf. Rep. NOR-X-274.
- Kuhnke, D.H.; Brace, L.G. 1986. Silviculture statistics for Canada, 1975-76 to 1982-83. Inf. Rep. NOR-X-275.
- Kuhnke, D.H.; Brace, L.G. 1986. Statistiques sylvicoles canadiennes, 1975-76 à 1982-83. Rapp. d'inf. NOR-X-275F.
- Malik, N.; Vanden Born, W.H. 1986. Use of herbicides in forest management. Inf. Rep. NOR-X-282.
- Moody, B.H.; Cerezke, H.F. 1986. Forest insect and disease conditions in Alberta, Saskatchewan, Manitoba, and the Northwest Territories in 1985 and predictions for 1986. Inf. Rep. NOR-X-276.
- Navratil, S.; Brace, L.G.; Edwards, I.K. 1986. Planting stock quality monitoring. Inf. Rep. NOR-X-279.
- Phillips, W.E.; Beck, J.A.; Lamble, G.W. 1986. Forest economics research needs for west-central Canada. Inf. Rep. NOR-X-281.
- Swanson, R.H.; Golding, D.L.; Rothwell, R.L.; Bernier, P.Y. 1986. Hydrologic effects of clearcutting at Marmot Creek and Streeter watersheds, Alberta. Inf. Rep. NOR-X-278.

Journal Articles / Articles de revues scientifiques

Amirault, P.A.; Brown, N.R. 1986. Cone and seed insects of tamarack, *Larix laricina* (Du Roi) K. Koch, and attempts to control damage using chemical insecticides. Can. Entomol. 118:589-596.

- Bella, I.E. 1986. Logging practices and subsequent development of aspen stands in east-central Saskatchewan. For. Chron. 62:81-83.
- Bella, I.E. 1986. Tree growth response along seismic lines in Alberta. For. Chron. 62(2):29-34.
- Bernier, P.Y. 1986. Extrapolating snow measurements on the Marmot Creek Experimental Basin. Nord. Hydrol. 17:83-92.
- Blenis, P.V.; Bernier, P.Y. 1986. Incidence of western gall rust infection of lodgepole pine regeneration in different-sized forest openings. Can. J. For. Res. 16:1327-1329.
- Chrosciewicz, Z. 1986. Foliar heat content variations in four coniferous tree species of central Alberta. Can. J. For. Res. 16(1):152-157.
- Chrosciewicz, Z. 1986. Foliar moisture content variations in four coniferous tree species of central Alberta. Can. J. For. Res. 16(1):157-162.
- Golding, D.L.; Swanson, R.H. 1986. Snow distribution patterns in clearings and adjacent forest. Water Resour. Res. 22(13):1931-1940.
- Harvey, D.A.; Alexander, M.E.; Janz, B. 1986. A comparison of fire-weather severity in northern Alberta during the 1980 and 1981 fire seasons. For. Chron. 62(6):507-513.
- For. Chron. 62(6):507-513.
 Hiratsuka, Y. 1986. Cytology of an autoecious soft pine blister rust (*Peridermium yamabense*) in Japan. Mycologia 78(4):637-640.
- Kennedy, K.A.; Brink, V.C. 1986. Differences in standing live and dead crops in estuarine marshes on Vancouver Island. Can. J. Bot. 64:322-325.
- Klein, J.I. 1986. Development of a jack pine seed orchard by mass selection. For. Chron. 62(3):143-146.
- L'Hirondelle, S.J.; Addison, P.A.; Huebert, D.B. 1986. Growth and physiological responses of aspen and jack pine to intermittent SO₂ fumigation episodes. Can. J. Bot. 64(11):2421-2427.
- Mallett, K.I.; Hiratsuka, Y. 1986. Nature of the "black line" produced between different biological species of the Armillaria mellea complex. Can. J. Bot. 64(11):2588-2590.
- Maynard, D.G.; Germida, J.J.; Addison, P.A. 1986. The effect of elemental sulfur on certain chemical and biological properties of surface organic horizons of a forest soil. Can. J. For. Res. 16:1050-1054.
- Newstead, R.G.; Ascher, A. 1986. Perceptions of the forest sector in the prairie provinces. For. Chron. 62:178-179.
- Sidhu, S.S.; Staniforth, R.J. 1986. Effects of atmospheric fluorides on foliage, and cone and seed production in balsam fir, black spruce, and larch. Can. J. Bot. 64:923-931.
- Singh, T. 1986. Generalizing biomass equations for the boreal forest regions of west-central Canada. For. Ecol. Manage. 17:97-107.

- Singh, T. 1986. Wood density variation of six major tree species of the Northwest Territories. Can. J. For. Res. 16:127-129.
- Singh, T.; Kostecky, M.M. 1986. Calorific value variations in components of 10 Canadian tree species. Can. J. For. Res. 16(6):1378-1381.
- Singh, T.; Powell, J.M. 1986. Climatic variation and trends in the boreal forest region of western Canada. Clim. Change 8:267-278.
- Stier; J.C.; Steele, T.W.; Engelhard, R.J. 1986. Pulpwood procurement practices in the Wisconsin-Upper Michigan pulp and paper industry. North. J. Appl. For. 3(1):10-14.
- Wong, H.R.; Szlabey, D.L. 1986. Larvae of the North American genera of diprionidae (Hymenoptera: symphyta). Can. Entomol. 118:577-587.

Symposium Proceedings / Actes de symposiums

- Bernier, P.Y.; Swanson, R.H. 1986. A watershed management pilot project in Alberta. Pages 87-92 in Proc. West. Snow Conf. Annu. Meet., April 15-17, 1986. Phoenix, AZ. Colorado State University, Fort Collins, CO.
- Corns, I.G.W.; Annas, R.M. 1986. Ecological classification of Alberta forests and its application in forest management. Pages 53-61 in G.M. Wickware and W.C. Stevens, cochairman, Proc. Site Classif. Relat. For. Manage. Symp., August 17-19, 1985, Sault Ste. Marie, Ontario. Can. For. Serv. Great Lakes For. Cent., Sault Ste. Marie, Ontario. Can.-Ont. Joint For. Res. Comm. Symp. Proc. O-P-14.
- Harvey, E.M. 1986. Introduction to session on the prairie nurseries. Pages 24-30 in J.W. Maxwell, ed., Proc. Can. For. Tree Nursery Weed Control Workshop. B.C. Minist. For. Lands, Surrey, B.C.
- Kalra, Y.P.; Maynard, D.G. 1986. An evaluation of automated and manual methods for NH₄-N analysis in the determination of cation exchange capacity of soils. Pages 67-76 in L.K. Pleisier, ed., Proc. Int. Workshop Lab. Methods Data Exch. Prog., Wageningen, The Netherlands, August 25-29, 1986. Int. Soil Ref. Inf. Cent. (ISRIC). Wageningen, The Netherlands, ISRIC Tech. Pap. 13.
- Kill, A.D.; Quintilio, D.; Alexander, M.E. 1986. Adaptation of a national system of fire danger rating in Alberta, Canada: a case study in technology transfer. Pages 410-421 in Proc. 18th Int. Union For. Res. Organ. World Congr., Div. 6, Ljubljana, Yugoslavia, Sept. 7-21, 1986. Int. Union For. Res. Organ., Vienna, Austria.
- Klein, J.I. 1986. Jack pine seed orchards for Manitoba, 1983-1985. Pages 176-177 in C.W. Yeatman and T.J.B. Boyle, eds., Proc. 20th Meet. Can. Tree Improv. Assoc., Part I, Quebec City, Quebec, August 19-22, 1985. Can. For. Serv., Petawawa Natl. For. Inst., Chalk River, Ontario.
- Natl. For. Inst., Chalk River, Ontario.
 Klein, J.I. 1986. Selection and mating of familtytest trees for a jack pine seed orchard. Pages 1-6 in Proc. Int. Union For. Res. Organ. Joint Meet. Work. Parties Breeding Theory, Progeny Test, Seed Orchards, Williamsburg, Virginia, October 13-17, 1986. North Carolina State Univ., Tree Improv. Coop., Raleigh, NC.

- Morton, R.J.; Hall, R.J.; Nesby, R.K.; Sutherland, I. 1986. Large-scale black and white and natural color photographs for the measurement of tree crown areas. Pages 133-140 in Proc. Tenth Can. Symp. Remote Sensing. Can. Centre Remote Sensing, Ottawa.
- Singh, T. 1986. Prediction error in tree biomass functions for western Canada. Pages 199-208 in F.H. Wharton and T. Cunia, comps., Estimating Tree Biomass Regressions and their Error. Proc. Workshop Tree Biomass Regression Funct. Contrib. Error For. Inventory Estimates, Syracuse, New York, May 26-30, 1986. U.S. Dep. Agric., For. Serv., Northeast. For. Exp. Stn., Broomall, PA. Gen. Tech. Note NE-117.
- Agric., For. Serv., Northeast. For. Exp. Stn., Broomall, PA. Gen. Tech. Note NE-117.
 Swanson, R.H.; Bernier, P.Y. 1986. The potential for increasing water supply in the Saskatchewan River system though watershed management. Pages 485-496 in Drought: the Impending Crisis? Proc. Can. Hydrol. Symp. 16, Regina, Sask., June 3-6, 1986. Natl. Res. Counc. Can., Assoc. Comm. Hydrol., Ottawa.

Other Publications / Autres publications

- Ascher, A., editor. 1986. Timberlines No. 1, Winter 1986. Can. For. Serv., North. For. Cent., Edmonton, Alb.
- Bella, I.E. 1986. Spacing effects 20 years after planting three conifers in Manitoba. Forest Management Note 39. 12 p.
- Bernier, P.Y. 1986. A programmed procedure for evaluating the effect of forest management on water yield. Forest Management Note No. 37. 12 p.
- Bernier, P.Y.; Swanson, R.H. 1986. Snow measurements. Pages 3-6 in Hydrology. Can. For. Serv., North. For. Cent., Edmonton, Alb. For. Rep. 31.
- Corns, I.G.W.; Annas, R.M. 1986. Field guide to forest ecosystems of west-central Alberta. 251 p. + Map. [Limited distribution]
- Edwards, I. K. 1986. Review of literature on fertilization and conifer seed production. Forest Management Note 40. 7 p.
- Forestry Report No. 31, September 1986. Forests, snow, and water. 12 p.
- Giles, D.R. A directory of primary wood-using industries in Saskatchewan, 1985. 137 p.
- McAlpine, R.S. 1986. Forest fire growth calculator. Forest Management Note 35.
- Moore, W.C. 1986. Procom-2 mapping technique for monitoring forest depletion. Forest Management Note No. 32, 8 p.
- Program Review, 1985-86. 60 p.
- Samoil, J.K. 1986. Centre de foresterie du Nord. Serv. canadien des forêts, Centre de foresterie du Nord, Edmonton (Alb.). Dépliant.
- Samoil, J.K. 1986. Hydrology. Can. For. Serv., North. For. Cent., Edmonton, Alb. For. Rep. 31 Samoil, J.K. 1986. Northern Forestry Centre. Can.
- Samoil, J.K. 1986. Northern Forestry Centre. Can. For. Serv., North. For. Cent., Edmonton, Alb. Brochure.
- Swanson, R.H. 1986. Cabin Creek subbasin of the Marmot Creek basin. Pages 6-8 in Hydrology.

Publications 1986

Can. For. Serv., North. For. Cent., Edmonton, Alb. For. Rep. 31.

- For. Rep. 31.
 Swanson, R.H. 1986. Forest, snow, and water. Pages 1-2 in Hydrology. Can. For. Serv., North. For. Cent., Edmonton, Alb. For. Rep. 31.
 Swanson, R.H. 1986. The Streeter grassland experiment. Pages 9-12 in Hydrology. Can. For. Serv., North. For. Cent., Edmonton, Alb. For. Rep. 31.
- Yang, R.C. 1986. Growth of 25-year-old lodgepole pine after juvenile spacing in western Alberta. Forest Management Note No. 38. 8 p.
- Yang, R.C.; Bella, I.E. 1986. Fertilization improves stand productivity of preharvest lodgepole pine. Forest Management Note No. 36. 4 p. Zalasky, H. 1986. Effects of conditioning and storage on containerized conifer seedlings. Forest
- Management Note No. 34. 8 p. Zalasky, H. 1986. Field performance of contain-
- erized conifer seedlings south of Grande Prairie, Alberta. Forest Management Note No. 33. 8 p.
- Zoltai, S.C. 1986. Canada, distribution of wetlands. Map 9.1 in The National Atlas of Canada, 5th ed. Energy, Mines Resour. Can., Ottawa.

Pacific Forestry Centre Centre de foresterie du Pacifique

Information Reports / Rapports d'information

- Barclay, H.J.; Hall, T.H. 1986. Shawn: a model of Douglas-fir ecosystem response to nitrogen fertilization and thinning: a preliminary approach. Inf. Rep. BC-X-280.
- Manning, G.H.; Massie, M.R.C. 1986. Characteristics of logging residues in the Vancouver Forest Region, 1981. Inf. Rep. BC-X-279. McMullen, L.H.; Safranyik, L.; Linton, D.A. 1986.
- Suppression of mountain pine beetle infestations in lodgepole pine forests. Inf. Rep. BC-X-276.
- Morrison, D.J.; Larock, M.D.; Waters, A.J. 1986. Stump infection by Fomes annosus in spaced stands in the Prince Rupert Forest Region of British Columbia. Inf. Rep. BC-X-285.
- Oswald, E.T.; Brown, B.N. 1986. Forest commu-nities in lake Laberge ecoregion, Yukon Territory. Inf. Rep. BC-X-282.
- Reports and publications 1985. 1986. Inf. Rep. BC-X-283.
- Rapports et publications 1985. 1986. Rapp. d'inf. BC-X-283
- Robinson, G.; Wetton, C.E. 1986. The role of biomass in the B.C. pulp and paper industry energy strategy: 1974-1984. Inf. Rep. BC-X-286.
- Shepherd, R.F.; Otvos, I.S. 1986. Pest management of Douglas-fir tussock moth: procedures for insect monitoring, problem evaluation and control actions. Inf. Rep. BC-X-270. Tunner, A.; Standish, J.T. 1986. Predicting logging residues in British Columbia. Inf. Rep. BC-X-284.
- White, W.; Netzel, B.; Carr, S.; Fraser, G.A. 1986. Forest sector dependence in rural British Columbia 1971-1981. Inf. Rep. BC-X-278.
- Wood, C. 1986. Distribution maps of common tree diseases in British Columbia. Inf. Rep. BC-X-281.
- Wood, C.S.; Van Sickle, G.A. 1986. Forest insect and disease conditions: British Columbia & Yukon 1985. Inf. Rep. BC-X-277.

Journal Articles / Articles de revues scientifiques

- Alfaro, R.I. 1986. Mortality and top-kill in Douglasfir following defoliation by the western spruce budworm in British Columbia. J. Entomol. Soc. B. C. 83(Dec. 31).
- Barclay, H.J. 1986. Host-parasitoid dynamics: effects of the position of density dependence. Ecol. Model. 32:291-299.
- Barclay, H.J. 1986. Models of host-parasitoid interactions to determine the optimal instar of parasitization for pest control. Nat. Resour. Modeling 1(1):81-103.
- Barclay, H.J.; Pang, P.C.; Pollard, D.F.W. 1986. Aboveground biomass distribution within trees and stands in thinned and fertilized Douglas-fir. Can. J. For. Res. 16(3):438-442.

- Bloomberg, W.J. 1986. Modelling control strategies for Phellinus weirii root rot in managed stands: model development (abstract). Phytopathology 76:1059.
- Bloomberg, W.J.; Hall, A.A. 1986. Effects of laminated root rot on relationships between stem growth and root-system size, morphology, and spatial distribution in Douglas-fir. For. Sci. 32(1):202-219.
- Brix, H.; Mitchell, A.K. 1986. Thinning and nitrogen fertilization effects on soil and tree water stress in a Douglas-fir stand. Can. J. For. Res. 16:1334-1338
- Edwards, D.G.W. 1986. Special prechilling techniques for tree seeds. J. Seed Technol. 10(2):151-171
- Edwards, D.G.W.; Portlock, F.T. 1986. Expansion of Canadian tree seed certification. For. Chron. 62(5):461-466.
- Eis, S. 1986. Differential growth of individual components of trees and their interrelationships. Can. J. For. Res. 16:352-359.
- Funk, A. 1986. A new species of Ciboria on hemlock needles. Trans. Brit. Mycol. Soc. 86:184-186.
- Funk, A. 1986. Botryosphaeria pseudotsugae: association with a canker of Douglas-fir and observations on its morphology. Can. J. Plant Pathol. 7:355-358
- Funk, A. 1986. Stigmina zilleri sp. nov., associated with brown leaf spot of broad leaf maple. Can. J. Bot 65:482-483.
- Funk, A. 1986. Two new discomycetes on pinus. Mycotaxon 27:283-288.
- Honer, T.G. 1986. Assessing change in Canada's forest inventory 1977-1981. For. Chron. 62(5): 423-428.
- Hopkins, J.C.; Funk, A. 1986. Dieback of white birch in central British Columbia. Can. Plant Dis. Surv. 66:59-60.
- Hulme, M.A.; Dawson, A.F.; Harris, J.W.E. 1986. Exploiting cold-hardiness to separate Pissodes strobi (Peck) (Coleoptera: Curculionidae) from associated insects in leaders of Picea sitchensis
- (Bong.) Carr. Can. Entomol. 118:1115-1122. Hunt, R.S.; Morrison, D.J. 1986. Black-stain root disease on lodgepole pine in British Columbia. Can. J. For. Res. 16:996-999.
- Macey, D.E.; Arnott, J.T. 1986. Effect of moderate moisture and nutrient stress on bud formation and growth of container-grown white spruce seedlings. Can. J. For. Res. 16:949-954.
- Miller, G.E. 1986. Damage prediction for Contarinia oregonensis Foote (Diptera: Cecidomyiidae) in Douglas-fir seed orchards. Can. Entomol. 118: 1297-1306.
- Miller, G.E. 1986. Distribution of Contarinia oregonensis Foote (Diptera: Cecidomyiidae) eggs in Douglas-fir seed orchards and a method of

estimating egg density. Can. Entomol. 118:1291-1295.

- Miller, G.E.; Ruth, D.S. 1986. Effect of temperature during May to August on termination of prolonged diapause in the Douglas-fir cone moth (Lepidoptera: Tortricidae). Can. Entomol. 118:1073-1074.
- Miller, R.E.; Atherton, M.V.; Wilcox, J.E. 1986. Comparative effects of three nitrogen fertilizers applied in fall and spring to a 29-year-old Douglas-fir plantation, Can. J. For. Res. 16:910-917.
- Miller, R.H.; Whitney, H.S.; Berryman, A.A. 1986. Effects of induced translocation stress and bark beetle attack (*Dendroctonus ponderosae*) on heat pulse velocity and the dynamic wound response of lodgepole pine (*Pinus contorta* var. *latifolia*). Can. J. Bot. 64:2669-2674.
- Mitchell, L.A. 1986. Derivation of Sirococcus strobilinus specific monoclonal antibodies. Can. J. For. Res. 16:939-944.
- Mitchell, L.A.; Sutherland, J.R. 1986. Detection of seed-borne Sirococcus strobilinus with monoclonal antibodies in an enzyme-linked immunosorbent assay. Can. J. For. Res. 16:945-948.
- Morrison, D.J.; Chu, D.; Johnson, A.L.S. 1986. Species of Armillaria in British Columbia. Can. J. Plant Pathol. 7:242-246.
- Otvos, I.S.; Hunt, R.S. 1986. Evaluation of three types of barriers to trap winter moth (Lepidoptera: Geometridae) adults. J. Entomol. Soc. B. C. 83(Dec. 31).
- Pang, P.C.K.; Kolenko, H. 1986. Phosphomonoesterase activity in forest soils. Soil Biol. Biochem. 18 (1):35-40.
- Pollard, D.F.W.; Portlock, F.T. 1986. Intraspecific variation in stem growth of western hemlock. Can. J. For. Res. 16(1):149-151.
- Sahota, T.S.; Peet, F.G.; Ibaraki, A.; Farris, S.H. 1986. Chromatin distribution pattern and cell functioning. Can. J. Zool. 64:1908-1913.
- Sahota, T.S.; Peet, F.G.; Thomson, A.J.; Ibaraki, A. 1986. Changes in hemolymph proteins in relation to dormancy of *Barbara colfaxiana* Kft. and the influence of ecdysone and precocene on the protein composition. Can. Entomol. 118(9):839-847. Shore, T.L.; Alfaro, R.L. 1986. The spruce budworm,
- Shore, T.L.; Alfaro, R.I. 1986. The spruce budworm, Choristoneura fumiferana (Lepidoptera: Tortricidae), in British Columbia. J. Entomol. Soc. B. C. 83:Dec. 31.
- Stanek, W.; Hopkins, J.C.; Simmons, C.S. 1986. Effects of spacing in lodgepole pine stands on incidence of Atropellis canker. For. Chron. 62:91-95.
- Summers, D.; Sutherland, J.R.; Woods, T.A.D. 1986. Inland spruce cone rust (*Chrysomyxa pirolata*) control: relation of ferbam application to basidiospore production, rainfall, and cone phenology. Can. J. For. Res. 16:360-362.
- Tanaka, Y.; Edwards, D.G.W. 1986. An improved and more versatile method for prechilling Abies procera Rehd. seeds. Seed Sci. Technol. 14:457-464.
- Thomson, A.J. 1986. Trend surface analysis of spatial patterns of tree size, microsite effects, and competitive stress. Can. J. For. Res. 16(2):279-282.

- White, E.E. 1986. A method for extraction of chloroplast DNA from conifers. Plant Mol. Biol. Rep. 4(2):98-101.
- Yeh, F.C.; Arnott, J.T. 1986. Electrophoretic and morphological differentiation of *Picea sitchensis*, *Picea glauca*, and their hybrids. Can. J. For. Res. 16 (4):791-798.
- Whitney, H.S.; Bandoni, R.J.; Oberwinkler, F. 1986. Entomocorticium dendroctoni gen. et sp. nov. (Basidiomycotina), a possible nutritional symbiote of the mountain pine beetle in lodgepole pine in British Columbia. Can. J. Bot. 65:95-102.

Symposium Proceedings / Actes de symposiums

- Alfaro, R.I. 1986. Measuring diameter increment change caused by western spruce budworm defoliation in British Columbia. Pages 20-25 in D.S. Solomon and T.B. Brann, eds., Environmental Influences on Tree and Stand Increment. Proc. Mensuration, Growth and Yield Instruments and Methods in Forest Mensuration Workshop, Durham, NH, Sept. 23-27, 1985. Maine Agricultural Experiment Station, Univ. of Maine Misc. Pub. 691.
- Arnott, J.T. 1986. An overview of coastal Douglasfir stand establishment in British Columbia. Pages 219-229 in C.D. Oliver, D.P. Hanley, and J.A. Johnson, eds., Proc. Douglas-fir: Stand Management for the Future Symposium, Univ. Wash., Coll. For. Resources, Inst. For. Resources. Contrib. No. 55.
- Bloomberg, W.J. 1986. Comparison of dwarf mistletoe effects on hemlock in Alaska, British Columbia and the Pacific Northwest. Pages 35-40 in S.J. Cooley, ed., Proc. 34th Annual Western International Forest Disease Work Conference. Juneau, AL., Sept. 9-12, 1986.
- AL., Sept. 9-12, 1986. Edwards, D.G.W. 1986. Cone prediction, collection and processing. Pages 78-102 in R.C. Shearer, Comp., Missoula, MO, Aug. 1985. USDA For. Serv., Gen. Tech. Rep. INT-203.
- Glover, S.G.; Arnott, J.T.; Brown, C.E. 1986. Proc. Twelfth Commonwealth Forestry Conference, Can. For. Serv., Pac. For. Centre, Victoria, B.C. 373 p.
- Hawkes, B.C. 1986. Fire history and management study of Kluane National Park. Pages 19-21 in J.G. Nelson, J.A. Carruthers, and D.M. Lohnes, eds., Science in National Parks and Other Heritage Areas. Heritage Resources Center, Univ. Waterloo and Parks Can.
- Hawkes, B.C. 1986. Micro-plot approach to prescribed fire effects research. Pages 45-53 in A.L. Koonce, ed., Proc. Prescribed Burning in the midwest: State-of-the-Art Symposium, Stevens Point, WI, March 3-6, 1986. Univ. Wisc., Stevens Point, WI.
- Hawkes, B.C.; Lawson, B.D. 1986. Prescribed fire decision-aids in B.C.: Current status and future developments. In Proc. Northwest Fire Council Annual Meeting. Olympia, WA., Nov. 18-19, 1986.
- Hunt, R.S. 1986. Pruning white pine to control blister rust in British Columbia. In S.J. Cooley, ed.,

Proc. 34th Annual Western International Forest Disease Work Conference. Juneau, AL., Sept. 9-12, 1986.

- Lawson, B.D.; Taylor, S.W. 1986. Preliminary evaluation of prescribed fire impact relationships and predictors for spruce-balsam slash. Pages 48-68 in Proc. Fire Management Symposium. Sponsored by Central Interior Fire Protection Committee, Prince-George, B.C., Apr. 8-9, 1986.
- McMinn, R.G. 1986. Comparative productivity of seeded, natural and planted regeneration following various site treatments in white spruce clearcuts. In Mayo Murray, ed., The Yield Advantages of Artificial Regeneration at High Latitudes. Proc. 6th International Workshop on Forest Regeneration. Edmunston, N.B., Aug. 10-11. Tech. Rep. PNW-194.
 Marshall, V.G. 1986. Environmental fate of nitroge-
- Marshall, V.G. 1986. Environmental fate of nitrogenous fertilizers. Pages 149-168 in R.P. Brockley, ed., Proc. Interior Forest Fertilization Workshop, Kamloops, B.C., Febr. 4-5. B.C. Ministry of Forest and Lands, Victoria. 187 p.
- and Lands, Victoria. 187 p. Miller, G.E. 1986. Insects and conifer seed production in the Inland Mountain West: a review. Pages 225-237 in Proc. Conifer Tree Seed in the Inland Mountain West Symposium. Aug. 5-7, 1985. Univ. of Montana, Missoula, MT.
- Miller, G.E. 1986. Sampling major Douglas-fir cone and seed insects in British Columbia. Pages 103-112 in Proc. IUFRO Cone and Seed Insects Working Party Conference, Briançon, France, Sept. 3-5, 1986.
- Moser, J.C.; Smiley, R.L.; Otvos, I.S.; Lorio, P.L. Jr. 1986. Pyemotes n. sp. (Acari: Pyemotidae), a potential biological control agent for cone and seed insects. In A. Rogues, ed., Proc. 2nd IUFRO Conference of the Cone and Seed Insects Working Party S2.07-01. Briançon, France, Sept. 3-5, 1986.
- Radwan, M.A.; Brix, H. 1986. Nutrition of Douglasfir. In C.D. Oliver, D.P. Hanley, and J.A. Johnson, eds., Proc. Douglas-fir: Stand Management for the Future Symposium, Seattle, WA, June 18-20, 1985. College of Forest Resources, Univ. of Washington.
- Shore, T.L. 1986. Conducting insect surveys. Page 21 in Proc. Thirty-seventh Annual Western Forest Insect Work Conference, Victoria, B.C., March 3-6, 1986.
- Smith, R.B. 1986. Hemlock dwarf mistletoe biology and spread. Pages 4-10 in J. Muir, ed., Proc. Workshop on Management of Hemlock Dwarf Mistletoe, Burnaby, B.C., Aug. 15-16, 1983. B.C. Ministry of Forests, Pest Management Rep. 4.
- Summers, D.; Miller, G.E. 1986. Experience with systemic insecticides for control of cone and seed insects in Douglas-fir seed orchards in coastal British Columbia. Pages 267-283 in Proc. IUFRU Cone and Seed Insects Working Party Conference, Briançon, France, Sept. 3-6, 1986. Taylor, S.W.; Feller, M.C. 1986. Initial effects of
- Taylor, S.W.; Feller, M.C. 1986. Initial effects of slash burning on the nutrient status of sub-boreal spruce zone ecosystems. Pages 79-91 in Proc. Fire Management Symposium. Sponsored by the Central Interior Fire Protection Committee, Prince George, B.C., April 8-9, 1986.

Werle, D.; Lee, Y.J.; Brown, R.J. 1986. The use of integrated multispectral and radar remote sensing data for monitoring forest clearcut and regeneration sites on Vancouver Island. Pages 319-332 in Proc. Tenth Canadian Symposium on Remote Sensing, Edmonton, Alb.

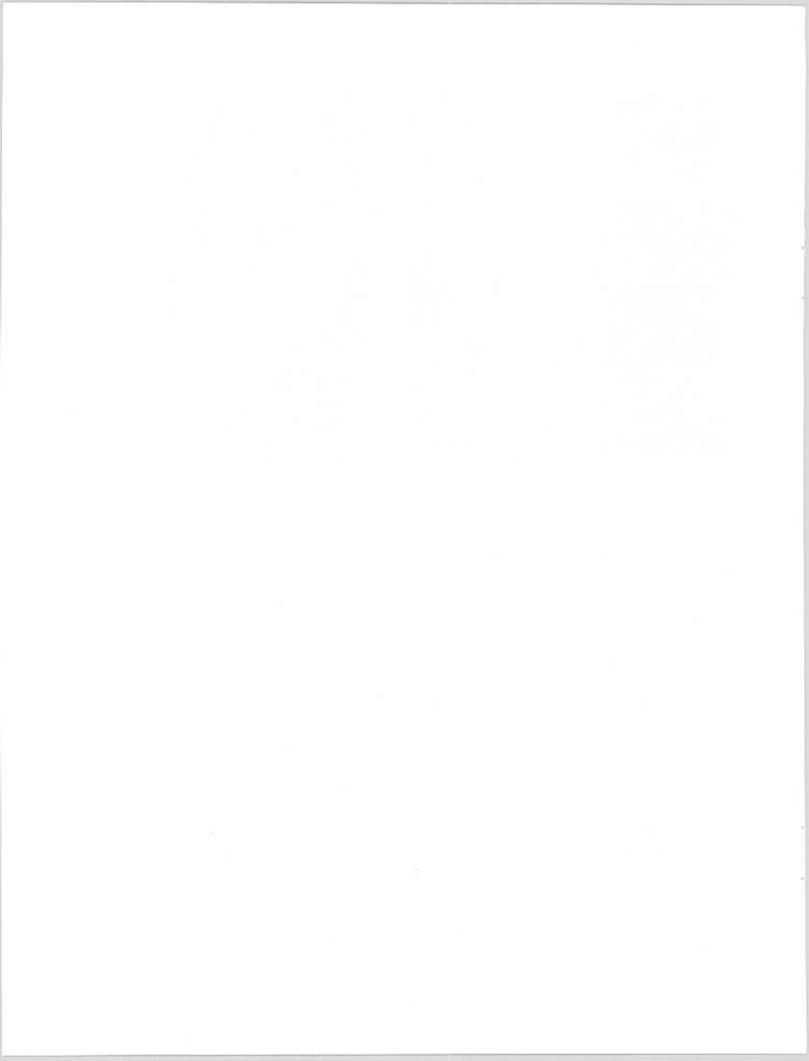
Other Publications / Autres publications

- Andrews, R.J. 1986. Forest Insect and Disease Conditions, Cariboo Forest Region, 1985. Forest Insect and Disease Survey Report 86-1. 30 p.
- Insect and Disease Survey Report 86-1. 30 p. Andrews, R.J. 1986. Status of spruce beetle in mature spruce in Bowron Lake Provincial Park, Fall, 1986. Special Report.
- Andrews, R.J.; Erickson, R.D.; Humphreys, N.; Vallentgoed, J.; Wood, C. 1986. Western spruce budworm in B.C. in 1986 and forecast for 1987.
- Arnott, J.T.; Loftus, N.S.; Palmer, J.E.; Burns, R.M. 1986. Directory of tropical silviculturalists. USDA For. Serv. Timber Management Branch, Washington, D.C. 72 p.
 Burch, J. 1986. Private forest lands program
- Burch, J. 1986. Private forest lands program guidelines. Canada-British Columbia Forest Resources Development Agreement 1985-1990. Direct Delivery Component. 28 p.
- Canada-British Columbia Forest Resource Development Agreement. 1986. Annual Report 1985/86. 15 p.
- Duncan, R.W. 1986. Common woolly aphids of conifers in British Columbia. Pest Leaflet FPL 19, revised. 8 p.
- Duncan, R.W. 1986. Terminal and root-collar weevils of lodgepole pine in British Columbia. Pest Leaflet FPL 73. 6 p.
- Erickson, R.D.; Ferris, R.L. 1986. Forest insect and disease conditions, Kamloops forest region, 1985. Forest Insect and Disease Survey Report 86-2. 33 p.
- Funk, J. 1986. Phomopsis (Diaporthe) canker of Douglas-fir in British Columbia. For. Pest Leafl, 60 (Revised). 3 p.
- Garbutt, R.; Loranger, J. 1986. Forest insect and disease conditions, Prince George forest region, 1985. Forest Insect and Disease Survey Report 86-4. 28 p.
- Haeussler, S.; Coates, D. 1986. Autecological characteristics of selected species that compete with conifers in British Columbia: A literature review. Co-published by B.C. Ministry of Forests and Lands. 180 p.
- Humphreys, N. 1986. Maps of major forest insect infestations, Vancouver forest region. Forest Insect and Disease Survey Report 86-8. 43 p.
- Humphreys, N. 1986. Green-striped forest looper in British Columbia. Forest Insect and Disease Survey Report 86-9. 43 p.
- Humphreys, N.; Vallentgoed, J. 1986. Forest insect and disease conditions, Vancouver forest region, 1985. Forest Insect and Disease Survey Report 86-6. 34 p.
- Hunt, R.S. 1986. Pine needle casts and blights in the Pacific Region. Pest Leaflet no. 43, revised. 7 p.

- Indian Forest Lands Program. 1986. Treetalk. Summer 1986. FRDA.
- Indian Forest Lands Program. 1986. Treetalk. Fall 1986. FRDA.
- Koot, H.P.; Turnquist, R. 1986. Forest insect and disease conditions, Nelson forest region, 1985. Forest Insect and Disease Survey Report 86-3. 31 p.
- Loranger, J.; Garbutt, R. 1986. Forest insect and disease conditions, Yukon Territory, 1985. Forest Insect and Disease Survey Report 88-7. 7 p.
- Marshall, V.G. 1986. Spruce spider mite in British Columbia. For. Pest Leafl. 33. 4 p.
- Private Forest Lands Program, Guidelines for Application, Canada-British Columbia Forest Resource Development Agreement, 1985-1990, Direct Delivery Component. 28 p.
- Smith, R.B.; Commandeur, P.R.; Ryan, M.W. 1986. Soils, vegetation, and forest growth on landslides and surrounding logged and old-growth areas on the Queen Charlotte Islands. B.C. Ministry of Forest Land Management Report 41. 95 p.
- Teske, E. 1986. Information Forestry Newsletter 13:1. 8 p.
- Teske, E. 1986. Information Forestry Newsletter 13:2. 8 p.
- Teske, E. 1986. Program Review 1985-1986. 67 p.

- Trowbridge, R.; Hawkes, B.; MacAdam, A.; Parminter, J. 1986. Field handbook for prescribed fire assessments in B.C.: logging slash fuels. Canada/B.C. Forest Resource Development Agreement. B.C. Min. of Forests, Land Management Handbook No. 11. 63 p., reprinted in 1987 as B.C. Min. of For. and Lands and Canada/B.C. Econ. and Regional Development Agreement, FRDA Handbook 001.
- Ulrich, V. 1986. Canada-British Columbia Intensive Forest Management Subsidiary Agreement — six-year report: May 17, 1979 to March 31, 1986. 3-fold pamphlet.
- Unger, L.S. 1986. Spruce budworms in British Columbia. For. Pest Leafl. 31, revised. 8 p.
- Unger, L.; Stewart, A. 1986. Forest insect and disease conditions, Prince Rupert forest region, 1985. Forest Insect and Disease Survey Report 86-5. 39 p.
- Van Sickle, G.A.; Duncan, R. 1986. Insects and related pests of households. In The Canadian Agricultural Insect Pest Review 64:77.
- Agricultural Insect Pest Review 64:77. Wood, C.S. 1986. Western spruce budworm on Douglas-fir. 5-fold leaflet.
- Wood, C.S.; Van Sickle, G.A. 1986. Forest pest conditions in the Pacific Region - A Midseason summary. Forest Insect and Disease Survey Special Report. 16 p.

II. 1987



Forestry Canada — Headquarters Forêts Canada — Administration centrale

Information Reports / Rapports d'information

- Weetman, G.F.; Krause, H.H.; Koller, E.; Veilleux, J.-M. 1987. Interprovincial Forest Fertilization Program 1968-1983, Inf. Rep. DPC-X-21.
- Weetman, G.F.; Krause, H.H.; Koller, E.; Veilleux, J.-M. 1987. Programme interprovincial de fertilisation des forêts 1968-1983. Rapp. d'inf. DPC-X-21F.

Journal Articles / Articles de revues scientifiques

- Huber, J.T. 1987. Review of Schizophragma ogloblin and the non-Australian species of Stethynium Enock (Hymenoptera:Mymaridae). Can. Entomol. 119:823-855.
- Nordin, V.J.; Singh, P. 1987. Forest pathology: Following new approaches. (Symposium organized by the Canadian Forestry Service and the Canadian Phytopathological Society.) Can. J. Plant Pathol. 9:319-369.
- Pollard, D.F.W. 1987. The world conservation strategy and the forest sector in Canada. For. Chron. 63(4):365-371.
- Tsay, T. B. 1987. Forestry in Japan. For. Chron. 63(2):97-102.

Other Publications / Autres

publications Blanc, M. et coll. 1987. Glossaire de termes employés en gestion des feux de forêt, 4º éd. Conseil national de recherches du Canada, Comité canadien de gestion des feux de forêt, Ottawa. CNRC n° 26517. 69 p. [\$2.50]

Canada's forests 1986. 1987. Inf. Leafl.

- Canadian Council of Forest Ministers, 1987. Forestry Forum. Spring & Summer 1987. 16 p.
- Canadian Council of Forest Ministers. 1987. Forestry Forum. Winter 1987. 6 p.
- Canadian Forestry Service style guidelines for scientific and technical publications. 1987. 56 p.
- Conseil canadien des ministres des forêts. 1987. Forum forestier. Hiver 1987. 6 p.
- Conseil canadien des ministres des forêts. 1987. Forum forestier. Printemps et été 1987. 16 p.
- Conseil consultatif de la recherche forestière du Canada. 1987. Premier rapport annuel à l'intention du sous-ministre associé, Service canadien des forêts, août 1986. 8 p.
- Digest des rapports d'information. 1987. Publica-tion bimensuelle. Vol. 8, nº 1 à 6. 71 p. Federal forests in Canada 1987. Brochure.
- Forestry Research Advisory Council of Canada. 1987. First annual report to the Associate Deputy Minister, Canadian Forestry Service, August 1986. 8 p.

- Focus on research: An outline of the CFS Strategic Plan for Research. 1987. 10 p.
- Guidelines for editors of symposium proceedings. 1987. 11 p.
- Guide stylistique des publications scientifiques et techniques du Service canadien des forêts. 1987. 101 p.
- Hirvonen, R.; Woods, R.A. 1987. Timber harvest on federal lands, 1981-1986. Fed. Lands For. Br. 52 p.
- Hirvonen, R.; Woods, R.A. 1987. La récolte de bois sur les terres fédérales de 1981 à 1986. Direction de la Foresterie sur les terres fédérales. 54 p.
- Information Reports Digest. 1987. Bi-monthly Publication. Vol. 8, No. 1 to 6, 71 p. Kondo, E.S.; Moody, B.H. 1987. Forest insect and
- disease conditions in Canada 1986. 128 p.
- Kondo, E.S.; Moody, B.H. 1987. Insectes et maladies des arbres au Canada. 149 p.
- Laflamme, N.; Le Blanc, H.N. 1987. Forestry and forest products Vocabulary: English-French and French-English. North American Forestry Commission Publ. No. 2. 329 + 284 p. Laflamme, N.; Le Blanc, H.N. 1987. Vocabulaire de
- la foresterie et des produits forestiers: anglaisfrançais et français-anglais. Publ. nº 2 de la Commission forestière pour l'Amérique du Nord. 329 + 284 p.
- Les forêts du Canada 1986. 1987. Feuil. d'inf.
- Les forêts fédérales du Canada 1987. Dépliant.
- Lignes directrices pour la préparation de la publication des comptes rendus de colloques. 1987. 12 p.
- Merrill, D.F.; Alexander, M.E., Eds. 1987. Glossary of forest fire management terms, 4th ed. National Research Council of Canada, Canadian Committee on Forest Fire Management, Ottawa. NRCC No. 26516. 91 p. [\$2.50]
- Pleins feux sur la recherche: Un aperçu du plan stratégique de la recherche du SCF. 1987. 11 p.
- Policy for forest management of Department of National Defence lands. 1987. 14 p.
- Policy for forestry programs on Indian lands. 1987. Fed. Lands For. Br. 8 p.
- Politique concernant l'aménagement forestier sur les terres indiennes. Direction de la foresterie sur les terres fédérales. 9 p.
- Politique d'aménagement forestier sur les terres appartenant au ministère de la Défense nationale.
- 9 p. Van Wagner, C.E. 1987. Development and structure Van Wagner, C.E. 1987. Development and structure of the Canadian Forest Fire Weather Index System. Forestry Technical Report 35. 35 p.
- Van Wagner, C.E. 1987. Élaboration et structure de la méthode canadienne de l'indice Forêt-Météo. Rapport technique de foresterie 35F. 34 p.

Newfoundland Forestry Centre Centre de foresterie de Terre-Neuve

Information Reports / Rapports d'information

- Clarke, L.J.; Carew, G.C. 1987. Forest insect and disease conditions in Newfoundland and Labrador in 1986. Inf. Rep. N-X-259.
- Curran, W.J.; Tricco, P.; Hall, P.J. 1987. Optimal dates for collection of conifer seed in central Newfoundland. Inf. Rep. N-X-248.
- Dowsley, B.J. 1987. Study of the correlation of diurnal growth patterns to climatic variables in a Salix energy plantation. Inf. Rep. N-X-260.
- Dowsley, B.J. 1987. Study of photosynthetically active radiation and leaf development in a Salix energy plantation. Inf. Rep. N-X-261.
- Lavigne, M.B.; Donnelly, J.G.; van Nostrand, R.S. 1987. A spacing trial in a precommercially thinned stand of black spruce at North Pond: Stemwood production during the first 5 years after thinning. Inf. Rep. N-X-262. Raske, A.G.; Retnakaran, A. 1987. The effective-
- Raske, A.G.; Retnakaran, A. 1987. The effectiveness of diflubenzuron and fenitrothion against the eastern hemlock looper, *Lambdina fiscellaria fiscellaria*, in Newfoundland in 1986. Inf. Rep. N-X-263.
- West, R.J.; Cunningham, J.C.; Kaupp, W.J. 1987. Ground spray applications of Virtuss[®], a nuclear polyhedrosis virus, against white-marked tussock moth larvae at Bottom Brook, Newfoundland, in 1986. Inf. Rep. N-X-257.

Journal Articles / Articles de revues scientifiques

- Grant, G.G.; Prevost, Y.H.; Slessor, K.N.; King, G.G.S.; West, R.J. 1987. Identification of the sex pheromone of the spruce coneworm, *Dioryctria reniculelloides* (Lepidoptera: Pyralidae). Environ. Entomol. 16(4):905-909.
- Langor, D.W.; Raske, A.G. 1987. Emergence, host attack, and overwintering behavior of the eastern larch beetle, *Dendroctonus simplex* LeConte (Coleoptera: Scolytidae), in Newfoundland. Can. Entomol. 119:975-983.
- Langor, D.W.; Raske, A.G. 1987. Reproduction and development of the eastern larch beetle, *Dendroc*tonus simplex LeConte (Coleoptera: Scolytidae), in Newfoundland. Can. Entomol. 119:985-992.
- Lavigne, M. B. 1987. Differences in stem respiration responses to temperature between balsam fir trees in thinned and unthinned stands. Tree Physiol. 3:225-233.
- Mallik, A.U. 1987. Allelopathic potential of Kalmia angustifolia to black spruce (Picea mariana). For. Ecol. Manage. 20:43-51.
- Robertson, A. 1987. Teleforestry: the application of videoconferencing to forestry. For. Chron. 63(1):32-35.
- Robertson, A. 1987. The centroid of tree crowns as an indicator of abiotic processes in a balsam fir

wave forest. Can. J. For. Res. 17(7):746-755.

- Robertson, A. 1987. The use of trees to study wind. Arboric. J. 11:127-143.
- Sundaram, K.M.S.; Raske, A.G.; Retnakaran, A.; Sundaram, A.; West, R. 1987. Effect of formulation properties on ground and foliar deposits of two insecticides in flushed and one-year-old balsam fir needles following aerial application. Pestic. Sci. 21:105-118.
- Thompson, I.D. 1987. The myth of integrated wildlife/forestry management. Queen's Quarterly 94(3): 609-621.
- Thompson, I.D.; Colgan, P.W. 1987. Numerical responses of martens to a food shortage in Northcentral Ontario. J. Wildl. Manage. 51(4):824-835.
- Thompson, I.D.; Euler, D.L. 1987. Moose habitat in Ontario: A decade of change in perception. Swedish Wildlife Res. (Suppl. 1):181-193.
- Thompson, I.D.; Macaulay, A.L. 1987. Comparative efficiency of new- and old-style museum special traps in capturing small mammals. Can. Field-Nat. 101(4): 608-610.
- Thompson, I.D.; Porter, M.S.; Walker, S.L. 1987. A key to the identification of some small boreal mammals of central Canada from guard hairs. Can. Field-Nat. 101(4): 614-616.
- Titus, B.D.; Malcolm, D.C. 1987. The effect of fertilization on litter decomposition in clearfelled spruce stands. Plant Soil 100:297-322.
- West, R.J.; Raske, A.G.; Retnakaran, A; Lim, K.P. 1987. Efficacy of various Bacillus thuringiensis Berliner var. kurstaki formulations and dosages in the field against the hemlock looper, Lambdina fiscellaria fiscellaria (Guen.) (Lepidoptera: Geometridae), in Newfoundland. Can. Entomol. 119:449-458.

Symposium Proceedings / Actes de symposiums

Newton, P.F. 1987. Development of a stand density management model for pure black spruce forest types within central Newfoundland. I. Applicability of the self-thinning rule. IUFRO Forest Growth Modeling and Prediction Conference, Minneapolis, MN, August 24-28, 1987.

Other Publications / Autres publications

Program review 1986-87. 52 p.

Sundaram, A.; Retnakaran, A.; Raske, A.G.; West, R.J. 1987. Effect of application rate on droplet size spectra and deposit characteristics of Dimilin spray mixtures in an aerial spray trial. Pages 104-115 in G.B. Beestman and D.I.B. Vander Hovoen, eds., Pesticide Formulations and Application Systems: Seventh Volume, ASTM STP 986. American Society for Testing and Materials, Philadelphia, PA. Publications 1987

Forestry Canada — Maritimes Forêts Canada — Maritimes

Information Reports / Rapports d'information

- Curtis, D.S. 1987. Woodlot owner organizations in eastern Canada: Historic development, legislation, structure, financing and services. Inf. Rep. M-X-162.
- Curtis, D.S. 1987. Organisation de propriétaires de boisés privés dans l'est du Canada: rétrospective. législation, structure, mode de financement et services. Forêts Canada - Maritimes. Rapp. d'inf. M-X-162F
- Estabrooks, G.F. 1987. Growing balsam fir Christmas trees in field and forest. Inf. Rep. M-X-164.
- Hurley, J.E.; Titus, F.A. 1987. Summaries of light trap catches for the Maritimes 1976-1986. Inf. Rep. M-X-163.
- Magasi, L.P. 1987. Forest pest condition in the Maritimes 1986. Inf. Rep. M-X-161. Titus, F.A. 1987. Pests that changed the forests of
- Fundy National Park. Inf. Rep. M-X-165.

Journal Articles / Articles de revues scientifiques

- Boyle, C.D.; Robertson, W.J.; Salonius, P.O. 1987. Use of mycelial slurries of mycorrhizal fungi as inoculum for commercial tree seedling nurseries. Can. J. For. Res. 17:1480-1486.
- Chan, T.H.; Zhang, Y.J.; Sauriol, F.; Thomas, A.W.; Strunz, G.M. 1987. Studies in iridoid chemistry and spruce budworm (Choristoneura fumiferana) antifeedants. Can. J. Chem. 65:1853-1858.
- Fairchild, W.L.; Eidt, D.C.; Weaver, C.A.A. 1987. Effects of fenitrothion insecticide on inhabitants of leaves of the pitcher plant, Sarracenia purpurea L. Can Entomol. 119:647-652.
- Fairchild, W.L.; Lewis, D.J. 1987. Parasitic water mite larvae (Hydrachnida: Hygrobatoidea) associated with caddisfly larvae (Trichoptera: Leptoceridae, Limnephilidae). Can. Entomol. 119:809-813.
- Fairchild, W.L.; O'Neil, M.C.A.; Rosenberg, D.M. 1987. Quantitative evaluation of the behavioral extraction of aquatic invertebrates from samples of sphagnum moss. J. N. Am. Benthol. Soc. 6(4): 281-287
- Fowler, D.P. 1987. In defense of the polycross. Can. J. For. Res. 17:1624-1627.
- Fowler, D.P. 1987. The hybrid white × Sitka spruce: species crossability. Can. J. For. Res. 17: 413-417.
- Percy, K.E.; Baker, E.A. 1987. Effects of simulated acid rain on production, morphology and composition of epicuticular wax and on cuticular membrane development. New Phytol. 107:577-589. Smith, R.F. 1987. The effect of fertilizer on flower-
- ing of various-sized black spruce (Picea mariana) trees. For. Ecol. Manage. 19:189. (Abstract)

- Strongman, D.B. 1987. A method for rearing Dendroctonus ponderosae Hopk. (Coleoptera: Scolytidae) from eggs to pupae on host tissue with or without a fungal complement. Can. Entomol. 119(2):207-208.
- Strongman, D.B.; Miller, J.D.; Calhoun, L.; Findlay, J.A.; Whitney, N.J. 1987. The biochemical basis for interference competition among some lignicolous marine fungi. Bot. Mar. 30:21-26.
- Thomas, A.W. 1987. The effect of age of currentyear shoots of Picea glauca on survival, development time, and feeding efficiency of 6th-instar larvae of Choristoneura fumiferana. Entomol.
- Exp. Appl. 43:251-260. Turgeon, J.J.; Nelson, N.; Kettela, E.G. 1987. Reproductive biology of the spruce budmoth, Zeiraphera canadensis Mut. & Free. (Lepidoptera. Tortricidae: Olethreutinae), in New Brunswick. Can. Entomol. 119:361-364.
- von Aderkas, P.; Bonga, P.; Nagmani, R. 1987. Promotion of embryogenesis in cultured megagametophytes of Larix decidua. Can. J. For. Res. 17:1293-1296.

Symposium Proceedings / Actes de symposiums

Murray, T.S., Cameron, M.D. 1987. Proceedings of the precommercial thinning workshop. 19 March 1987. Frederiction, N.B.

Other Publications / Autres publications

- Allen, P.L.; Hallet, R.D. 1987. Iron chelate damages to containerized jack pine crops. Tech. Note 181.
- Bonga, J.M. 1987. Clonal propagation of mature trees, problems and possible solutions. Chapt. in J.M. Bonga and D.J. Durzan, eds., Cell and Tissue Culture in Forestry, Vol. 1: Principles and Biotechnology. Martinus-Nihjoff Publishers, Dordrecht/Boston/Lancaster.
- Bonga, J.M. 1987. Tree tissue culture applications. Pages 209-239 in J.M. Bonga, ed., Advances in Cell Culture. Academic Press Inc.
- Coady, L.J. 1987. Forest insects and diseases in Prince Edward Island National Parks in 1986. Tech. Note 174.
- Dobson, C.M.B. 1987. Forests insects and diseases in Fundy National Park in 1986. Tech. Note 175.
- Grant, M.; Hallet, R.D. 1987. Method of preparing medium affects seedling growth. Tech. Note 188.
- Hallett, R.D.; Lanteigne, L.J.; Burns, T.W. 1987. Forest tree nursery production and shipments in the Maritimes, 1986. Tech. Note 179.
- Johnston, J.H.; Magasi, L.P. 1987. A wood quality study of dead and dying balsam fir decay in standing trees and pulpwood files. Tech. Note 185.

Publications 1987

- Julien, F.; Beckett, D. 1987. New Brunswick's forestry sector. Can For. Serv. - Mar. For. Rep. no. 4.
- Julien, F.; Beckett, D. 1987. Prince Edward Island's forestry sector. Can. For. Ser. - Mar. For. Rep. no. 5.
- McCall, C.D. 1987. Forest insects and diseases in Kejimkujik National Park in 1986. Tech. Note 177.
- MacKay, A.W. 1987. Forest insects and diseases in Cape Breton Highlands National Park in 1986. Tech. Note 178.
- Magasi, L.P. 1987. A synopsis of forest pest conditions in the Maritimes in 1986. Tech. Note 172.
- Magasi, L.P. 1987. Highlights of forest pest conditions in the Maritimes in mid-June 1987. Tech. Note 180.
- Magasi, L.P. 1987. Highlights of forest pest conditions in the Maritimes in mid-September 1987. Tech. Note 184.

- Magasi, L.P.; Titus, F.A. 1987. Highlights of forest pest conditions in the Maritimes at the end of June 1987. Tech. Note 182.
- Magasi, L.P.; Titus, F.A. 1987. Highlights of forest pest conditions in the Maritimes at the end of July 1987. Tech. Note 183.
- Magasi, L.P.; Titus, F.A.; Pond, S.E. 1987. Multiagency plantation pest surveys in New Brunswick
- in 1986. Tech. Note 173. Meikle, O.A. 1987. Forest insects and diseases in Fundy National Park in 1986. Tech. Note 176.
- Pendrel, B.A. 1987. How to live with the seedling debarking weevil: a key to determine degree of hazard to planting sites. Tech. Note 171. Pendrel, B.A.; Magasi, L.P. 1987. Spruce budworm
- defoliation in Nova Scotia 1987. Tech. Note 186.
- Pendrel, B.A.; Magasi, L.P. 1987. Spruce budworm defoliation in Prince Edward Island in 1987 and a forecast for 1988. Tech. Note 187.
- Program Review. 72 p.
- Revue des programmes, 76 p.
- West, R.C.; Bishop, D.L. 1987. Can pulpwood waste be used for land reclamation? Tech. Note 170.

Laurentian Forestry Centre Centre de foresterie des Laurentides

Information Reports / Rapports d'information

- Daoust, G.; Beaulieu, J.; Corriveau, A. 1987. Aptitudes au bouturage de l'épicéa commun à l'âge de la reproduction. Rapp. d'inf. LAU-X-75.
- Daoust, G.; Beaulieu, J.; Corriveau, A. 1987.
 Rooting ability of cuttings from sexually mature Norway spruce. Inf. Rep. LAU-X-75E.
 Gonzalez, A.; D'Aoust, A.L. 1987. Observations et
- Gonzalez, A.; D'Aoust, A.L. 1987. Observations et mesures concernant la culture de semis d'épinette noire en conteneurs. Rapp. d'inf. LAU-X-79.
- Gonzalez, A.; D'Aoust, A.L. 1987. Observations and measurements of containerized black spruce seedlings growing in a greenhouse. Inf. Rep. LAU-X-79E.
- Lavallée, R. 1987. Les caries de l'épinette noire dans la forêt boréale au Québec. Rapp. d'inf. LAU-X-76.
- Lavallée, R. 1987. Black spruce decay in the Quebec boreal forest. Inf. Rep. LAU-X-76E.
- Lavallée, R. 1987. Revue bibliographique sur Pachypappa tremulae (L.): Un puceron des racines des plants de conifères en récipients. Rapp. d'inf. LAU-X-73.
- Lavallée, R. 1987. Bibliographical review of Pachypappa tremulae (L.): a root aphid of conifer seedlings in containers. Inf. Rep. LAU-X-73E.
- Roberge, M.R. 1987. Aménagement d'une bétulaie jaune à érables par la coupe par groupes: résultats de 15 ans. Rapp. d'inf. LAU-X-72.
- Roberge, M.R. 1987. Management of a yellow birchmaple stand by cutting in groups: 15-year results. Inf. Rep. LAU-X-72E.
- Roberge, M.R. 1987. Évolution du pH de divers sols forestiers au cours des derniers 20 ans. Rapp. d'inf. LAU-X-77.
- Roberge, M.R. 1987. Evolution of the pH of various forest soils over the past twenty years. Inf. Rep. LAU-X-77E.
- Zarnovican, R. 1987. Analyse de quelques éléments de la production forestière de l'unité de gestion des Chic-Chocs (partie occidentale). Rapp. d'inf. LAU-X-74.
- Zarnovican, R. 1987. Analysis of some elements of forest production in the Chic-Chocs Management Unit (western section). Inf. Rep. LAU-X-74E.
- Zarnovican, R.; Ouellet, D. 1987. Peuplier fauxtremble au Témiscouata: Allométrie, croissance, production et évolution des prix du bois. Rapp. d'inf. LAU-X-78.
- Zarnovican, R.; Ouellet, D. 1987. Allometry, growth, yield, and prices for aspen in the Témiscouata region of Quebec. Inf. Rep. LAU-X-78E.

Journal Articles / Articles de revues scientifiques

Benhamou, N.; Chamberland, H.; Ouellette, G.B.;

Pauzé, F.E. 1987. Ulstrastructural localization of B-(1-4) D- glucans in two pathogenic fungi and in their host tissues by means of an exoglucanasegold complex. Can. J. Microbiol. 33:405-417.

- Benhamou, N.; Chamberland, H.; Ouellette, G.B.; Pauzé, F.J. 1987. Ultrastructural localization of cellulosic glucans and galactose in two fungi causing wilt diseases and in their host tissues by means of gold-conjugates. Can. J. Plant Pathol. 9:273. (Abstract).
- Benhamou, N. Ouellette, G.B. 1987. Ultrastructural study and cytochemical observations by means of enzyme-gold complexes of the fungus Ascocalyx abietina. Can. J. Bot. 65:168-181.
- Benhamou, N.; Ouellette, G.B. 1987. Ulstrastructural characterization of an extracellular fibrillar sheath on cells of Ascocalyx abietina, the scleroderris canker agent of conifers. Can. J. Bot. 65:154-167.
- Benhamou, N.; Parent, J.G.; Garzon, S.; Asselin, A.; Ouellette, G.B.; Joly, J.R. 1987. Use of monoclonal antibody against poly [I]: poly [C] for detecting mycoviruses and potential applications to potato spindle tuber viroid and animal reoviruses. Can. J. Plant Pathol. 9:106-114.
- Corriveau, A.; Beaulieu, J.; Mothe, F. 1987. Wood density of natural white spruce populations in Quebec. Can. J. For. Res. 17:675-682.
- Delisle, J.; McNeil, J.N. 1987. Calling behaviour and pheromone titre of the true armyworm, *Pseudaletia unipuncta* (Haw.) (Lepidoptera: Noctuidae) under different temperature and photoperiodic conditions. J. Insect Physiol. 33(5):315-324.
- Delisle J.; McNeil, J.N. 1987. The combined effect of photoperiod and temperature on the calling behaviour of the true armyworm, *Pseudaletia unipuncta*. Physiol. Entomol. 12:157-164.
- Desrochers, P.; Benhamou, N.; Gardiner, R.; Ouellette, G.B. 1987. Inhibition of Ophiostoma ulmi by an ascomycete. Can. J. Plan Pathol. 9:276. (Abstract).
- Girouard, R.M. 1987. Cultures multiples de plants d'épinette noire sous serre et ombrière. For. Chron. 63(6):426-430.
- Laflamme, G.; Corriveau, A.; Ouellette, G.B. 1987. Gremmeniella abietina on Pinus griffithii and P. koraiensis in Québec. Can. J. Plant Pathol. 9(3): 281. (Abstract).
- Laflamme, G.; Lachance, D. 1987. Large infection center of Scleroderris canker (European race) in Quebec province. Plant Dis. 71:1041-1043.
- Nealis, V; Régnière, J. 1987. The influence of parasitism by Apanteles fumiferanae Vier. (Hymenoptera: Braconidae) on spring dispersal and changes in the distribution of larvae of the spruce budworm (Lepidoptera: Tortricidae). Can. Entomol. 119:141-146.

- Ouellette, G.B.; Benhamou, N. 1987. Use of monoclonal antibodies to detect molecules of fungal plant pathogens. Can. J. Plant Pathol, 9:167-176.
- Quednau, F.W.; Remaudière, G. 1987. Révision des espèces du sous-genre Castaneomyzocallis subg. nov. du genre Myzocallis trouvées sur les châtaigniers (Castanea) en Amérique du Nord (Homoptera: Aphididae). Can. Entomol. 119:339-354. Régnière, J. 1987. Temperature-dependent devel-
- opment of eggs and larvae of Choristoneura fumiferana (Clem.) (Lepidoptera: Tortricidae) and simulation of its seasonal history. Can. Entomol. 119:717-728.
- Rioux, D.; Ouellette, G.B. 1987. Histopathology of various nonhost plants inoculated with Ophiostoma ulmi. Can. J. Plant Pathol. 9:285. (Abstract).
- Roberge, M.R. 1987. Managing northern hardwoods by clearcutting 30 m wide strips: 10-year results. For, Chron. 63(3):169-173.
- Turgeon, J.J.; Régnière, J. 1987. Development of sampling techniques for the spruce budmoth, Zeiraphera canadensis Mut. and Free. (Lepidoptera: Tortricidae). Can. Entomol. 119:239-249.
- Ung, C.-H.; Bertrand, F. 1987. Analyse qualitative des équations différentielles d'un modèle de croissance pour l'érablière à sucre. Can. J. For. Res. 17:588-593.
- Zarnovican, R.; Trencia, J. 1987. Croissance de l'érable à sucre et du hêtre à grandes feuilles selon la position sociale dans le peuplement. Ann. Sci. For. 44(2):211-226.

Symposium Proceedings / Actes de symposiums

- Archambault, L. 1987. Classification of oak ecosystems in southern Michigan, USA/Classification des écosystèmes de chênes du sud du Michigan. USA. Page 103 in Proc. 4th Annual Forestry Graduate Student Conference, Duchesnay Forest Station, Québec, Feb. 1987. Univ. Laval, Québec, Qué.
- Beaubien, J. 1987. Méthodologie d'accentuation des images TM pour une meilleure discrimination des couverts forestiers. Pages 227-237 in P.J. Howarth, ed., Compte rendu du onzième Symp. Can. Télédétection, Waterloo (Ontario), 22-25 juin 1987. Inst. aéronautique et spatial du Canada, Ottawa.
- Beaulieu, J.; Corriveau, A.; Daoust, G. 1987. Productivité et stabilité phénotypique de l'épi-nette rouge au Québec. Page 344 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé). Boutin, R.; Robitaille, G. 1987. Effects of endogen-
- ous and exogenous sources of acidification on the chemical properties of a podzol. Pages 429-436 in R. Perry, R.M. Harrison, J.N.B. Bell, and J.N.
 Lester, eds., Acid Rain: Scientific and Technical Advances. Publ. Div., Selper Ltd, London.
 Corriveau, A.; Beaulieu, J.; Daoust, G. 1987. Tree genetics and improvement at CFS Quebec 1985-1987.
- 1987. Pages 51-55 in Proc. Twenty-first meeting Can. Tree Improvement Assoc., Part 1, Truro,

N.S., August 17-21 1987. Can. For. Serv., Can. Tree Improvement Assoc., Ottawa.

- Daoust, G.; Beaulieu, J.; Corriveau, A. 1987. Aptitudes au bouturage d'épicéas communs (Picea abies (L.) Karst.) d'origines différentes et agés de 19 ans. Page 345 in 55" congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).
- Desrochers, P.; Benhamou, N.; Ouellette, G.B. 1987. Inhibition d'Ophiostoma ulmi par l'anamorphe d'un Ascomycète. Page 52 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).
- Jobin, L.J. 1987. The gypsy moth (Lymantria dispar [L.]): situation, experiences and control in Eastern Canada. Pages 18-32 in Proc. Information Symposium, Robson Media Centre, Vancouver, B.C., Nov. 5, 1985. Juneau, A. 1987. Pulvérisation aérienne de Bacillus
- thuringiensis en forêt privée dans l'est du Québec. Résultats, saison 1987. Présenté au 15^{*} colloque annuel sur la lutte contre les ravageurs forestiers, Ottawa, 17-19 novembre 1987.
- Ouellet, D.; Zarnovican, R. 1987. Application de la classification de IUFRO à un bas-perchis: Analyse des données dendrométriques. Page 345 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé)
- Ouellette, G.B.; Benhamou, N.; Méthot, N. 1987. Ultrastructure and cytochemistry of microhyphae produced by Ophiostoma ulmi, the Dutch elm disease pathogen. In Mycol. Soc. An. Newsletter, vol. 38 (Abstract). MSA/CFS Meeting, June 1987, Ottawa.
- Rioux, D.; Ouellette, G.B. 1987. Étude histologique comparative de Ulmus americana et de plantes non hôtes inoculés avec Ophiostoma ulmi, causant la maladie hollandaise de l'orme. Page 51 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).
- Roberge, M.R. 1987. Nos sols forestiers ne se sont pas acidifiés et la croissance de nos érablières n'a pas diminué au cours des derniers 25 ans. Page 344 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).
- Roberge, M.R. 1987. Nos sols forestiers ne se sont pas acidifiés et la croissance de nos érablières n'a pas diminué au cours des derniers 25 ans. In Communications présentées dans le cadre des sciences forestières, 55° congrès de l'ACFAS, Univ. d'Ottawa.
- Roberge, M.R. 1987. L'aménagement et les insectes des érablières. Pages 16-32 in Colloque régional sur l'érable, 11 février 1987, Érablière La Grillade, Saint-Alphonse-de-Granby. Min. Agric. Pêch. Aliment. Qué.
- Ung, C.-H. 1987. Analyse de la forme des tiges du hêtre à grandes feuilles et de l'érable à sucre provenant d'une jeune futaie. Page 342 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987.

Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).

- Valéro, J.R.; Langlois, D.S. 1987. Similitudes et possibilités de recombinaison entre le virus de la polyédrie nucléaire de la tordeuse des bourgeons de l'épinette (VPN-TBE) et celui de la tordeuse du cerisier (VPN-TC). Page 221 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).
- Valéro, J.R.; Villeneuve, C.; Tremblay, J.P. 1987. Dispersions aériennes de BT-Futura à un très faible volume par hectare pour réprimer la tordeuse des bourgeons de l'épinette (TBE). 114* Assemblée Ann. Soc. Entomol. Qué. Montréal, oct. 87.
- Zarnovican, R.; Ouellet, D. 1987. Classification des arbres de IUFRO: Analyse des critères et particulièrement celui de la tendance évolutive des arbres. Page 345 in 55° congrès ACFAS, Univ. d'Ottawa, 19-22 mai 1987. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 55. (Résumé).

Other Publications / Autres publications

- Gosselin, M. 1987. Le contrat d'approvisionnement et d'aménagement forestier. For. Conserv. 53(8): 29-30.
- Hardy, Y; Mainville, M.; Schmitt, D.M. 1987. Atlas de la défoliation causée par la tordeuse des

bourgeons de l'épinette dans le nord-est de l'Amérique du Nord de 1938 à 1980.

- Insectes et maladies des arbres: Québec, 1986. 1987. Supplément de Forêt Conservation, 53(10), 34 p.
- Jobin, L. 1987. Réseau de pièges à phéromone pour la surveillance des populations de la tordeuse des bourgeons de l'épinette. Pages 5-6 in Insectes et maladies des arbres: Québec 1986. Forêt Conserv. 53(10) Suppl.
- Lachance, D. 1987. Nématode du pin, Bursaphelenchus xylophilus. Pages 21-22 in Insectes et maladies des arbres: Québec 1986. Forêt Conserv. 53(10) Suppl.
- Lachance, D., Monnier, C. 1987. Relevé spécial sur le sapin baumier. Pages 25-26 in Insectes et maladies des arbres: Québec 1986. Forêt Conserv. 53(10) Suppl.
- Laflamme, G. 1987. La protection des forêts papillonne. L'Aubelle (février-mars):8-9.

Revue des programmes 1986-1987. 53 p.

- Program review 1986-1987. 53 p.
- Valéro, J. 1987. Diprion de Swaine, Neodiprion swainei Midd. Pages 21-22 in Insectes et maladies des arbres: Québec 1986. Forêt Conserv. 53(10) Suppl.
- Vézina, P.E.; Roberge, M.R. 1987. Mise en terre des plants à racines nues. Forêt Conserv. 53(9):25.
- Vézina, P.E.; Roberge, M.R. 1987. Qu'est-ce au juste qu'une forêt? For. Conserv. 54(1):34.

Petawawa National Forestry Institute Institut forestier national de Petawawa

Information Reports / Rapports d'information

- Berry, A.B. 1987. Plantation white spruce variable density volume and biomass yield tables to age 60 at the Petawawa National Forestry Institute. Inf. Rep. PI-X-71.
- Berry, A.B. 1987. Tables du volume et de la biomasse à densité variable pour l'épinette blanche en plantation à l'Institut forestier national de
- Petawawa jusqu'à 60 ans. Rapp. d'inf. PI-X-71F. Coleman, M.N.; Nieman, T.C.; Boyle, T.J. 1987. Growth of inland and coastal provenances of balsam fir. Inf. Rep.PI-X-73
- Coleman, M.N.; Nieman, T.C.; Boyle, T.J. 1987. Taux de croissance et de survie et forme de la tige des individus de 22 ans d'épinette de Norvège soumis à un test de provenance. Rapp. d'inf. PI-X-73F.
- Newnham, R.M. 1987. FIRFOR A simple forest management model. Inf. Rep. PI-X-72.
- Newnham, R.M. 1987. FIRFOR Modèle simple d'aménagement forestier. Rapp. d'inf. PI-X-72F.
- Nietman, K. 1987. Catalogue of Canadian forest inventory publications and manuals. Inf. Rep. PI-X-76E.
- Nietman, K. 1987. Catalogue des manuels et publications de l'inventaire des forêts du Canada. Rapp. d'inf. PI-X-76F
- Power, J.M.; Williams, D.H. 1987. A national Geographic Information System for the Forest Insect and Disease Survey - requirements and selection. Inf. Rep. PI-X-75.
- Power, J.M.; Williams, D.H. 1987. Un système national d'information géographique pour le Relevé des insectes et des maladies des arbres ---
- analyse des besoins. Rapp. d'inf. PI-X-75F. Yapa, A.C., Mitchell, M.H. 1987. Biblio 1979-1985. Inf. Rep. PI-X-70. 1987. Bibliography
- Yapa, A.C., Mitchell, M.H. 1987. Liste des publications pour les années 1979-1985. Rapp. d'inf. PI-X-70F.

Journal Articles / Articles de revues scientifiques

- Ahern, F.J.; Leckie, D.G. 1987. Digital remote sensing for forestry: requirements and capabilities,
- today and tomorrow. Geocarto Int. 3:43-52. Barrett, J.W.; Cheliak, W.M.; Knowles, P.H. 1987. Variation in the PGI/AAT linkage group between populations of black spruce. Can. J. For. Res. 17:756-758.
- Barrett, J.W.; Knowles, P.; Cheliak, W.M. 1987. The mating system in a black spruce clonal seed orchard. Can. J. For. Res. 17(5):379-382.
- Bird, G.A.; Rachar, D.B.; Chartarpaul, L. 1987. Increased skeletonization of leaf litter under snow following timber harvest. Ecology 68 (1):221-223.

- Bonnor, G.M.; Magnussen, S. 1987. Forest inventories in Canada: a framework for change. For. Chron. 63(3): 193-198.
- Bousquet, J.; Cheliak, W.M.; Lalonde, M. 1987. Allozyme variability in natural populations of green alder (Alnus crispa) in Quebec. Genome 29(2):345-352.
- Bousquet, J.; Cheliak, W.M.; Lalonde, M. 1987. Genetic differentiation among 22 mature populations of green alder (Alnus crispa) in central Quebec. Can. J. For. Res. 17(3):219-227.
- Bousquet, J.; Cheliak, W.M.; Lalonde, M. 1987. Genetic diversity within and among 11 juvenile populations of green alder (Alnus crispa) in Canada. Physiol. Plant. 70:311-318. Boyle, T.J.B. 1987. A diallel cross in black spruce.
- Genome 29:180-186.
- Boyle, T.J.B.; Morgenstern, E.K. 1987. Some aspects of the population structure of black spruce in central New Brunswick. Silvae Genet. 36:53-60.
- Brand, D.G.; Weetman, G.F.; Rehsler, P. 1987. Growth analysis of perennial plants: the relative production rate and its yield components. Ann. Bot. 59:45-53.
- Burgess, D.; Peterson, R.L. 1987. Development of Alnus japonica root nodules after inoculation with Frankia strain HFPArI3. Can. J. Bot. 65(8):1647-1657.
- Burgess, D.; Peterson, R.L. 1987. Effect of nutrient conditions on root nodule development in Alnus japonica. Can. J. Bot. 65(8):1658-1670.
- Cheliak, W.M.; Skrøppa, T.; Pitel, J.A. 1987. Genetics of the polycross: 1. Experimental results from Norway spruce. Theor. Appl. Genet. 73:321-329.
- Cheliak, W.M.; Yeh, F.C.H.; Pitel, J.A. 1987. Use of electrophoresis in tree improvement programs. For. Chron. 63(2):89-96.
- Harrington, J.B. 1987. Climatic change: A review of causes. Can. J. For. Res. 17(11): 1313-1339.
- Hendrickson, O. 1987. Winter branch nutrients in Northern conifers and hardwoods. For. Sci. 33(4): 1068-1074.
- Hendrickson, O.Q.; Burgess, D.M.; Chatarpaul, L. 1987. Biomass and nutrients in Great Lakes-St. Lawrence forest species: implications for wholetree conventional harvest. Can. J. For. Res. 17(3): 210 - 218.
- Hurly, T.A.; Yeatman, C.W.; Robertson, R.J. 1987. Maturity and viability of seed from squirrel-cut pine cones. For. Chron. 63(4):268-271.
- Kourtz, P. 1987. Expert system dispatch of forest fire control resources. AI Applic. 1(1):1-8.
- Kourtz, P. 1987. The need for improved forest fire detection. For. Chron. 63(4):272-277.
- Leckie, D.G. 1987. Factors affecting defoliation assessment using airborne multispectral scanner

data. Photogram. Eng. Remote Sens. 53:1665-1674.

- Magnussen, S.; Yeatman, C.W. 1987. Adjusting for inter-row competition in a jack pine provenance trial. Silvae Genet. 36:206-214.
- Magnussen, S.; Yeatman, C.W. 1987. Early testing of jack pine. II. Variance and repeatability of stem and branch characters. Can. J. For. Res. 17(6):460-465.
- Mittal, R.K.; Singh, P; Wang, B.S.P. 1987. Botrytis: a hazard to reforestation: a literature review. Europ. J. For. Pathol. 17(6):369-384.Mittal, R.K.; Wang, B.S.P. 1987. Fungi associated
- Mittal, R.K.; Wang, B.S.P. 1987. Fungi associated with seeds of eastern white pine and white spruce during cone processing and seed extraction. Can. J. For. Res. 17(9):1026-1034.
- Mittal, R.K.; Wang, B.S.P.; Harmsworth, D. 1987. Effects of extended prechilling on laboratory germination and fungal infection in seeds of white spruce and eastern white pine. Tree Planters' Notes 38(4):6-9.
- Monty, J. 1987. What do cells have to do with forest resource statistics? For. Chron. 63(1):20-22.
- Périnet, P.; Tremblay, F.M. 1987. Commercial micropropagation of five Alnus species. New Forests 3:225-230.
- Pitel, J.A.; Cheliak, W.M.; Barrett, J. 1987. Inheritance of allozymes in a black spruce diallel cross. Sylvae Genet. 36:149-153.
- Shoen, D.J.; Cheliak, W.M. 1987. Genetics of the polycross: 2. Male fertility variation in Norway spruce, *Picea abies* (L.) Karst. Theor. Appl. Genet. 74:554-559.
- Weber, M.G. 1987. Decomposition, litter fall, and forest floor nutrient dynamics in relation to fire in eastern Ontario jack pine ecosystems. Can. J. For. Res. 17(12): 1496-1506.
- Weber, M.G.; Monte Hummel; Van Wagner, C.E. 1987. Selected parameters of fire behavior and *Pinus banksiana* Lamb. regeneration in eastern Ontario. For. Chron. 63(4):340-346.

Symposium Proceedings / Actes de symposiums

- Boyle, T.J.B. 1987. Future breeding strategies and the need for early testing in black spruce. Pages 65-72 in Demeritt, M.E. Jr., Ed., Proc. 30th NE Forest Tree Improv. Conf., School of Forest Res., Univ. of Maine, Orono, July 22-24, 1986.
- Boyle, T.J.B.; Yeh, F.C. 1987. Within-population genetic variation — Implications for selection and breeding. Pages 20-42 in Proc. 21st meeting of the Canadian Tree Improvement Association, Truro, Nova Scotia, Aug. 17-21, 1987.
 Chatarpaul, L. 1987. Biological and nutritional im-
- Chatarpaul, L. 1987. Biological and nutritional implications of harvesting biomass: A central Ontario perspective. Pages 139-145 in Z.-Z. Stastsny, Ed., Proc. 6th Canadian Bioenergy R. & D. Seminar, Richmond, B.C., Feb. 16-18, 1987.
- Cheliak, W.M. 1987. Biotechnology in tree improvement. Pages 57-61 in Galloway, R.L. et al., eds., Primeval Improvement: The New Forestry Age. Proc. Symp. COJFRC 0-P-15.

- Daffern, J.G.; Poland, J.S.; Van Loon, G.W. 1987. Nutrient cycling and biomass distribution in plantations of hybrid poplar. Pages 129-133 in Z.-Z. Stastsny, Ed., Proc. 6th Canadian Bioenergy R. & D. Seminar, Richmond, B.C., Feb. 16-18, 1987.
 Flanigan, M.D.; Harrington, J.B. 1987. A study of
- Flanigan, M.D.; Harrington, J.B. 1987. A study of the relationship of meteorological variables to monthly provincial area burned by wildfire in Canada 1953-80. Pages 229-234 in the Preprint Volume, Ninth Conference ont Fire and Forest Meteorology, April 21-24, 1987, San Diego, CA. Published by the American Meteorological Society, Boston, MA.
- Harrington, J.B.; Flanigan, M.D. 1987. Drought persistence at forested Canadian stations. Pages 204-206 in the Preprint Volume, Ninth Conference ont Fire and Forest Meteorology, April 21-24, 1987, San Diego, CA. Published by the American Meteorological Society, Boston, MA.
- Joliffe, P.A.; Brand, D.G.; Hawkins, C.D.B. 1987. Plant Growth Analysis: Application to vegetation management research. Pages 72-75 in E. Hamilton and S. Watts, compilers, Proc. Third Annual Vegetation Management Workshop: Vegetation Competition and Responses.
- Kimmins, J.P.; Scoullar, K.A. 1987. Simulation of the yield, the sustainability of yield, the economics and the energy efficiency of biomass production in forestry and agroforestry using the flexible, ecosystem management modelling framework FORCYTE-11. Pages 146-149 in Z.-Z. Stastsny, Ed., Proc. 6th Canadian Bioenergy R. & D. Seminar, Richmond, B.C., Feb. 16-18, 1987.
- Kimmins, J.P.; Scoullar, K.A.; Comeau, P.G.; Kurz, W.A.; Apps, M.J.; Chatarpaul, L. 1987. Forcyte-II: An example of the hybrid simulation approach to predicting the consequences for production, yield, economics, soil fertility, nutrient and organic matter reserves, and energy efficiency of alternative crop production systems. Pages 305-314 in Ek, A.R. et al., eds., Proc. IUFRO Conf. Forest Growth Modelling and Prediction, Vol. 1. Minneapolis, Minn. Soc. Am. For. Publ. SAF 87.12.
- Leckie, D.G.; Kneppeck, I.D. 1987. A trial of oblique imagery from a low cost video camera system for defoliation assessment. Pages 919-926 in Proc. 10th Can. Symp. on Remote Sensing. Edmonton, Alta, May 1986.
- Magnussen, S.; Yeatman, C.W. 1987. Four years height growth of 25 jack pine (*Pinus banksiana* Lamb.) families in an accelerated nursery trial. Pages 47-64 in Demeritt, M.E. Jr., Ed., Proc. 30th NE Forest Tree Improv. Conf., School of Forest Res., Univ. of Maine, Orono, July 22-24, 1986.
- Res., Univ. of Maine, Orono, July 22-24, 1986. Magnussen, S.; Yeatman, C.W. 1987. Theoretical basis for early testing in genetic improvement programs. Pages 53-67 in Proc. 21st meeting of the Canadian Tree Improvement Association, Truro, Nova Scotia, Aug. 17-21, 1987.
- Péch, G. 1987. Moisture code and fire spread index for reindeer lichen. Pages 80-82 in the Preprint Volume, Ninth Conference on Fire and Forest Meteorology, April 21-24, 1987, San Diego, CA.

Published by the American Meteorological Society, Boston, MA.

- Smith, N.J.; Brand, D.G. Compatible growth models and stand density diagrams. Pages 636-643. in Ek, A.R. et al., eds., Proc. IUFRO Conf. Forest Growth Modelling and Prediction, Vol. 2. Minneapolis, Minn. Soc. Am For. Publ. SAF 87 12
- Growth Modelling and Prediction, Vol. 2. Minneapolis, Minn. Soc. Am. For. Publ. SAF 87.12.
 Todd, B.; Denglin, C.; Leckie, D.G. 1987. Production of enhanced LANDSAT imagery for forest fire fuel type mapping of Northeastern China. Page 225-237 in Proc. Beijing Intl. Symp. Remote Sensing, Beijing, China, November 18-22, 1986.
 Van Wagner, C.E. 1987. A moisture content model
- Van Wagner, C.E. 1987. A moisture content model for medium-sized logging slash. Pages 34-40 in Proc. Ninth Conference on Fire and Forest Meteorology, San Diego, CA, April 21-24, 1987.
- Meteorology, San Diego, CA, April 21-24, 1987. Van Wagner, C.E. 1987. Forest fire research – Hindsight and foresight. Pages 115-120 in Gen. Tech. Rep. PSW 101, Pacific Southwest Forest and Range Experiment Station, Forest Service, USDA.
- Wang, B.S.P. 1987. The beneficial effects of stratification on tree seed germination. Pages 56-75 in Proc. Nurserymen's Meeting, Dryden, Ont., June 15-19, 1987. Ont. Min. Nat. Res.

- Association canadienne pour l'amélioration des arbres. Constitution et règlements.
- Bonnor, G.M.; Nietmann, K. 1987. Metric units in forestry: What do they mean? 10 p.
- Bonnor, G.M.; Nietmann, K. 1987. Les unités métriques en foresterie: Comment s'y retrouver? 10 p.
- Canada's forest inventory. 1987. Poster (with text).
- Canadian Tree Improvement Association. Constitution and bylaws.
- Comité canadien de l'inventaire forestier: Les dix premières années. 27 p.
- Haddon, B.D. 1987. Canadian Forest Inventory Committee: the first ten years. 26 p.
- Inventaire des forêts du Canada. 1987. Poster (avec texte).
- Program review 1985-1987. 70 p.
- Recent achievements at PNFI.
- Réalisations récentes à Petawawa.
- Revue des programmes 1986-1987. 70 p.
- Tree Distribution in Canada/Répartition des arbres au Canada. 1987. (Poster/Affiche)

Forest Pest Management Institute Institut pour la répression des ravageurs forestiers

Information Reports / Rapports d'information

- Payne, N; Feng, J.; Reynolds, P. 1987. Off-target deposit measurements and buffer zones required around water for various aerial applications of glyphosate. Inf. Rep. FPM-X-80.
- Payne, N; Feng, J.; Reynolds, P. 1987. Mesure du dépôt hors cible et détermination des zones tampons nécessaires autour d'étendues d'eau pour des épandages aériens de glyphosate Rapp. d'inf. FPM-X-80F.
- Sundaram, K.M.S. 1987. Distribution, dissipation and, persistence of aminocarb in aquatic components of the forest environment after aerial application of two Matacil[®] 180F formulations. Inf. Rep. FPM-X-78.
- Sundaram, K.M.S. 1987. Distribution, évaporation et persistance de l'aminocarbe en milieu aquatique forestier après application aérienne de deux formulations de Matacil[®] 180F. Rapp. d'inf. FPM-X-78F.
- Wilson, G.G. 1987. Observations on the level of infection and intensity of Nosema fumiferanae (microsporida) in two different field populations of the spruce budworm, Choristoneura fumiferana. Inf. Rep. FPM-X-79.
- Wilson, G.G. 1987. Observations sur le pourcentage d'infection par Nosema fumiferanae (microsporida) et l'intensité de l'infection sur le terrain chez deux populations différentes de la tordeuse des bourgeons de l'épinette (Choristoneura fumiferana). Rapp. d'inf. FPM-X-79F.

Journal Articles / Articles de revues scientifiques

- Cadogan, B.L. 1987. Experimental aerial application of Matacil flowable insecticide to control spruce budworm (Lepidoptera: Tortricidae). Crop Prot. 6(2):130-135.
- Grant, G.G. 1987. Copulatory behavior of spruce budworm, Choristoneura fumiferana (Lepidoptera: Tortricidae): Experimental analysis of the role of the sex pheromone and associated stimuli. Ann. Entomol. Soc. Am. 80:78-88.
- Grant, G.G.; Frech, D.; MacDonald, L.; Slessor, K.N.; King, G.G.S. 1987. Copulation releaser pheromone in body scales of female whitemarked tussock moth, Orgyia leucostigma (Lepidoptera: Lymantriidae): Identification and behavioral role. J. Chem. Ecol. 13(2):345-356.
- Grant, G.G.; Prévost, Y.H.; Slessor, K.N.; King, G.G.S.; West, R.J. 1987. Identification of the sex pheromone of the spruce coneworm, *Dioryctria reniculelloides* (Lepidoptera: Pyralidae). Environ. Entomol. 16:905-909.
- Himel, C.M.; Sundaram, A.; Sundaram, K.M.S.; Cadogan, B.L.; Villaveces, A. 1987. Assessment

of aerial deposits in a spruce forest using inflight microencapsulation technique. J. Environ. Sci. Health B22:195-219.

- Kingsbury, P.D.; Kreutzweiser, D.P. 1987. Permethrin treatments in Canadian forests. Part 1. Impact on stream fish. Pestic. Sci. 19:35-48.
- Kreutzweiser, D.P.; Kingsbury, P.D. 1987.
 Permethrin treatments in Canadian forests. Part 2. Impact on stream fish. Pestic. Sci. 19:49-60.
 Percy-Cunningham, J.; Nicholson, D.; Retnakaran,
- Percy-Cunningham, J.; Nicholson, D.; Retnakaran, A. 1987. The effect of ingested benzoylphenylurea on the ultrastructure of the cuticle deposited during the last larval instar of *Choristoneura* fumiferana Clem. (Lepidoptera: Tortricidae). Can. J. Zool. 65:2715-2723.
- Sundaram, A. 1987. Influence of temperature on physical properties of non-aqueous pesticide formulations and spray diluents: Relevance to ULV applications. Pestic. Sci. 20:105-118.
- Sundaram, A.; Kotlyar, L.; Sparks, B.D. 1987. Influence of surfactants and polymeric adjuvants on physicochemical properties, droplet size spectra and deposition of fenitrothion and *Bacillus thuringiensis* formulations under laboratory conditions. J. Environ. Sci. Health B22:691-702.
- conditions. J. Environ. Sci. Health B22:691-702. Sundaram, A.; Leung, J.W.; Curry, R.D. 1987. Influence of adjuvants on physiochemical properties, droplet size spectra and deposit patterns: relevance in pesticide applications. J. Environ. Sci. Health B22:310-346.
- Sundaram, A; Retnakaran, A. 1987. Influence of formulation properties on droplet size spectra and ground deposits of aerially-applied pesticides. Pestic. Sci. 20:241-257.
- Sundaram, A.; Sundaram, K.M.S.; Leung, J.W.; Holmes, S.B.; Cadogan, B.L. 1987. Influence of physical properties on droplet size spectra and deposit patterns of two mexacarbate formulations, following spray applications under laboratory and field conditions. Pestic. Sci. 20:179-191.
- Sundaram, K.M.S.; Boyonoski, N.; Feng, C. 1987. Degradation and metabolism of mexacarbate in two types of forest litters under laboratory conditions. Environ. Sci. Health B22(1):29-54. Sundaram, K.M.S.; De Groot, P.; Sundaram, A.
- Sundaram, K.M.S.; De Groot, P.; Sundaram, A. 1987. Permethrin deposits and airborne concentrations downwind from a single swath application using a back pack mist blower. Environ. Sci. Health B22(2):171-193.
- Sundaram, K.M.S.; Raske, A.G.; Retnakaran, A.; Sundaram, A.; West, R.J. 1987. Effect of formulation properties on ground and foliar deposits of two insecticides in flushed and one-year-old balsam fir needles following aerial application. Pestic. Sci. 21:105-118.
- Sundaram, K.M.S.; Sundaram, A. 1987. Influence of formulation on spray deposit patterns, dislodgeable and penetrated residues, and persistence

characteristics of fenitrothion in conifer needles. Pestic. Sci. 18:259-271.

- Sundaram, K.M.S.; Szeto, S.Y. 1987. Distribution and persistence of carbaryl in some terrestrial and aquatic components of a forest environment. J. Environ. Sci. Health B22:579-599.
- Turgeon, J.J.; Nelson, N.; Kettela, E.G. 1987. Reproductive biology of the spruce budmoth, Zeiraphera canadensis Mut. & Free. (Lepidoptera: Tortricidae: Olethreutinae), in New Brunswick. Can. Entomol. 119:361-364.
- Turgeon, J.J.; Régnière, J. 1987. Development of sampling techniques for spruce budmoth, Zeiraphera canadensis Mut. and Free. (Lepidoptera: Tortricidae). Can. Entomol. 119:239-249.
- van Frankenhuyzen, K. 1987. Effect of wet foliage on efficacy of *Bacillus thuringiensis* spray against the spruce budworm, *Choristoneura fumiferana* Clem. (Lepidoptera: Tortricidae). Can. Entomol. 119:955-956.
- van Frankenhuyzen, K.; Geen, G.H. 1987. Effects of low pH and nickel on growth and survival of the shredding caddisfly, *Clistoronia magnifica* (Limnephilidae). Can. J. Zool. 65:1729-1732.
- van Frankenhuyzen, K.; Nystrom, C.W. 1987. Effect of temperature on mortality and recovery of spruce budworm (Lepidoptera: Tortricidae) exposed to Bacillus thuringiensis Berliner. Can. Entomol. 119:941-954.

Symposium Proceedings / Actes de symposiums

Kingsbury, P.D.; Trial, J.G. 1987. Buffer zones: Their application to forest insect control operations. Proc. of the Buffer Zone Workshop, Quebec, Qc., 16-17 April 1986. Sponsored by the Eastern Spruce Budworm Council's Environmental Committee. 124 p.

- Bulletin de l'Institut pour la répression des ravageurs forestiers 1987. 6:1. 11 p.
- Bulletin de l'Institut pour la répression des ravageurs forestiers 1987. 6:2. 13 p.

- Forest Pest Management Institute Newsletter. 1987. 6:1. 11 p. Forest Pest Management Institute Newsletter.
- Forest Pest Management Institute Newsletter. 1987. 6:2. 13 p.
- Kaupp, W.; Nicholson, D. 1987. The highlighting of nuclear polyhedrosis virus inclusion bodies embedded in thick sections using naphthalene black 12B. Technical Note No. 8. 2 p.
 MacDonald, J.A.; Kaupp, W.J. 1987. An insect
- MacDonald, J.A.; Kaupp, W.J. 1987. An insect cuticle preparation method for light microscopy. Technical Note No. 6. 2 p.
- Technical Note No. 6. 2 p. Obarymskyj, A.; de Groot, P. 1987. Adaption of a personnel lift for use in forestry. Technical Note 9. 8 p.
- Program Review 1986-87. 64 p.
- Retnakaran, A.; Wright, J.E. 1987. Control of insect pest with benzoylphenyl ureas. Dr. W. Junk Publ., The Netherlands.
- Revue des programmes 1986-1987. 64 p.
- Sundaram, A. 1987. Intermolecular interactions in aqueous pesticide formulations from viscositytemperature, viscosity-volatility, and viscosityshear rate relationships. Pages 48-67 in Pesticide Formulation and Applications Systems: Sixth Volume, ASTM STP 943, Am. Soc. Test. Mat., Philadelphia, PA.
- Sundaram, A. 1987. Optimizing physical properties of diluent oils for maximum target deposition of ultralow-volume spray droplets under laboratory conditions. Pages 101-122 in Pesticide Formulation and Applications Systems: Sixth Volume ASTM STP 943, Am. Soc. Test. Mat., Philadelphia, PA.
- Sundaram, A.; Retnakaran, A.; Raske, A.G.; West, R.J. 1987. Effect of application rate on droplet size spectra and deposit characteristics of Dimilin spray mixtures in an aerial spray trial. Pages 104-115 in Pesticide Formulation and Applications systems: Seventh Volume, ASTM STP 968, Am. Soc. Test. Mat., Philadelphia, PA.
- Sundaram, K.M.S.; Sundaram, A. 1987. Role of formulation ingredients and physical properties on droplet size spectra, deposition, and persistence of aerially sprayed aminocarb and mexacarbate in forest litter and soil samples. Pages 139-151 in Pesticide Formulation and Applications Systems: Seventh Volume, ASTM STP 968, Am. Soc. Test. Mat., Philadelphia, PA.

Great Lakes Forestry Centre Centre de foresterie des Grands Lacs

Information Reports / Rapports d'information

- Ballak, A.J.F. 1987. Bibliography of reports produced under the assessment program of the Canada-Ontario Forest Management Subsidiary Agreement, 1978-1986. Inf. Rep. O-X-386. Fleming, R.L.; Mossa, D.S.; Burns, T.R. 1987. Sca-
- Fleming, R.L.; Mossa, D.S.; Burns, T.R. 1987. Scarification trials for direct seeding on upland black spruce sites in northwestern Ontario. Inf. Rep. O-X-385. 43 p. + Appendices.
- Groot, A. 1987. Silvicultural consequences of forest harvesting on peatlands: site damage and slash conditions. Inf. Rep. O-X-384.
- Johnson, J.D.; Smyth, J.H. 1987. Harvesting and renewal costs of stripcutting relative to those of clearcutting on shallow-soil upland black spruce sites in north central Ontario. Inf. Rep. O-X-380.
- sites in north central Ontario. Inf. Rep. O-X-380. Leblanc, J.-D.; Sutherland, B.J. 1987. Comparative evaluation of seven site preparation tools in a residual poplar mixedwood stand in Saskatchewan. Inf. Rep. O-X-381.
- Lysyk, T.J.; Sanders, C.J. 1987. A method for sampling endemic populations of the spruce budworm (Lepidoptera: Tortricidae) based on proportion of empty sample units. Inf. Rep. O-X-382.
- Plexman, C.A. 1987. Bibliography of Great Lakes Forestry Centre publications 1983–1987. Inf. Rep. O-X-388.
- Puttock, G. D.; Smith, C. R. 1987. Evaluation of site preparation with Young's Teeth on sites with dense residual poplars. Inf. Rep. O-X-379.
- Scarratt, J.B. 1987. Containerized seedling production statistics for Ontario, 1985. Joint Report No. 10.
- Sutton, R.F. 1987. Plantation establishment in boreal Ontario: A study of spring planting and mechanization. Inf. Rep. O-X-383.
- Smyth, J.H.; Campbell, K.L. 1987. Selected forestry statistics, Ontario: 1987. Inf. Rep. O-X-387.

Journal Articles / Articles de revues scientifiques

- Foster, N.W.; Morrison, I.K. 1987. Alternate strip clearcutting in upland black spruce. II. Projected nutrient removals associated with harvesting. For. Chron. 63(6):451-456.
- Jeglum, J.K. 1987. Alternate strip clearcutting in upland black spruce. II. Factors affecting regeneration in first-cut strips. For. Chron. 63(6):439-445.
- Lysyk, T.J.; Axtell, R.C. 1987. A simulation model of house fly (Diptera: Muscidae) development in poultry manure. Can. Entomol. 119:427-437.
- Morrison, I.K.; Foster, N.W. 1987. Limits on cation leaching of weakly podzolized forest soils: an

empirical evaluation. NATO ASI Series G16:378-385.

- Nealis, V. 1987. The number of instars in jack pine budworm, Choristoneura pinus pinus Free. (Lepidoptera: Tortricidae), and the effect of parasitism on head capsule width and development time. Can. Entomol. 119:773-777.
- Nealis, V.G.; Smith, S.M. 1987. Interaction of Apanteles fumiferanae (Hymenoptera: Braconidae) and Nosema fumiferanae (Microsporidia) parasitizing spruce budworm, Choristoneura fumiferana (Lepidoptera: Tortricidae). Can. J. Zool 65:2047-2050.
- Nordin, J.H.; Mason, T.L.; Smith, L.L.; Willmann, P.A.; Richards, W.C.; Takai, S. 1987. Use of an enzyme-linked immunosorbent assay with murine ascitic antibodies to screen microorganisms for production of cerato-ulmin, a toxin of *Ceratocyctis* ulmi. Phytopathology 77:96-100.
- Robinson, F.C. 1987. Alternate strip clearcutting in upland black spruce. I. An introduction. For. Chron. 63(6):435-438.
- Sanders, C.J.; Meighen, E.A. 1987. Controlledrelease sex pheromone lures for monitoring spruce budworm populations. Can. Entomol. 119:305-313.
- Sims, R.A.; Wickware, G.M.; Cowell, D.W. 1987. A study of coastal vegetation at a site on Hudson Bay near Winisk, Ontario. Can. Field-Nat. 101(3):335-345.
- Stocks, B.J. 1987. Fire behavior in immature jack pine. Can. J. For. Res. 17:80-86.
- Stocks, B.J. 1987. Fire potential in the spruce budworm-damaged forests of Ontario. For. Chron. 63(1):8-14.
- Sutton, R.F. 1987. Root growth capacity and field performance of jack pine and black spruce in boreal stand establishment in Ontario. Can. J. For. Res. 17:794-804.
- Wood, J.E.; Raper, R. 1987. Alternate strip clearcutting in upland black spruce. III. Regeneration options for leave strips. For. Chron. 63(6):446-450.

Symposium Proceedings / Actes de symposiums

- Galloway, R.L.; Greet, R.M.; McGowan, D.W.J.; Walker, J.D., Co-chairmen. 1987. Primeval improvement: The new forestry age. Proceedings of a symposium sponsored by the Ontario Ministry of Natural Resources and the Great Lakes Forestry Centre, Thunder Bay, Ont., 21-23 October, 1986. 134 p.
- October, 1986. 134 p. Haavisto, V.F.; Wearn, V.H. 1987. Intensifying forestry use of peatlands with drainage in Ontario. Pages 249-256 in C.D.A. Rubec and R.P.

Overend, Comp., Proc. Symposium '87 Wetlands/ Peatlands, 23-27 August 1987, Edmonton, Alta.

- Jeglum, J.K. 1987. The use of twinspan, tabular analysis and Finnish/Swedish concepts in classifying wooded peatlands in Ontario. Pages 383-391 in C.D.A. Rubec and R.P. Overend, Comp., Proc. Symposium '87 Wetlands/Peatlands, 23-27 August 1987, Edmonton, Alta.
- McRae, D.J.; Stocks, B.J. 1987. Large-scale convection burning in Ontario. Pages 23-30 in the Preprint Volume, Ninth Conference on Fire and Forest Meteorology, April 21-24, 1987, San Diego, CA. Published by the American Meteorological Society, Boston, MA.
- Nicolson, J.A. 1987. Contributions of acid deposition to streamwater chemistry in three Precambrian Shields basins. Pages 89-98 in Foresty Hydrology and Watershed Management, Proc. Vancouver Symposium, Aug. 1987. IAHS Publ. 167.
- Sims, R.A.; Wickware, G.M.; Cowell, D.W. 1987. Wetlands of the southern Hudson Bay coast in Ontario. Pages 435-442 in C.D.A. Rubec and R.P. Overend, Comp., Proc. Symposium '87 Wetlands/ Peatlands, 23-27 August 1987, Edmonton, Alta. Stocks, B.J.; Flannigan, M.D. 1987. Analysis of the behaviour and associated weather for a 1986
- Northwestern Ontario Wildfire: Red Lake # 7. Pages 94-100 in Proc. Ninth Conference on Fire and Forest Meteorology, San Diego, CA., April 21-24, 1987. American Meteorological Society, Boston, MA.
- von Althen, F.W. 1987. Site preparation and weed control in hardwood afforestation in Ontario. Paper presented at the Sixth Central Hardwood Forest Conference, Knoxville, TN, February 24-26, 1987.

- Applejohn, M.J.; Howse, G.M. 1987. Survey bulletin. Spring 1987. 11 p.
- Biggs, W.D.; Sajan, R.J.; Brodersen, H. 1987. Results of forest insect and disease surveys in the Central Region of Ontario, 1986. Misc. Rep. No. 53.
- Brodersen, H.; Biggs, W.D. 1987. Results of forest insect and disease surveys in the Southwestern Region of Ontario, 1986. Misc. Rep. No. 54.
- Constable, D.C.; Czerwinski, E.J. 1987. Results of forest insect and disease surveys in the Northwestern Region of Ontario, 1986. Misc. Rep. No. 48.
- Evans, H.J.; Payne, S.G. 1987. Results of forest insect and disease surveys in the North Central Region of Ontario, 1986. Misc. Rep. No. 49.
- Evans, H.J.; Payne, S.G. 1987. Results of forest insect and disease surveys in the North Central Region of Ontario, 1986. Misc. Rep. No. 56.
- Forest Insect and Disease Conditions in Ontario. Survey Bulletin, Summer 1987. 31 p.
- Forest Insect and Disease Conditions in Ontario. Survey Bulletin, Fall 1987. 34 p.
- Forestry Newsletter. Winter 1987. 15 p. Jones, C.G. 1987. Results of forest insect and disease surveys in the Eastern Region of Ontario, 1986. Misc. Rep. No. 55.
- MacLeod, L.S.; Jansons, V.; Keizer, A.J. 1987. Re-sults of forest insect and disease surveys in the Northern Region of Ontario, 1986. Misc. Rep. No. 50.
- Program Review, 1985-86.
- Program Review 1986-87. 68 p.
- Sajan, R.J.; Smith, B.C. 1987. Results of forest insect and disease surveys in the Algonquin Region of Ontario, 1986. Misc. Rep. No. 52.
- Sykes, G.E., Comp. 1987. Job development program, Ontario Region - Forestry sector. Misc. Rep. No. 56.

Who's who at the Great Lakes Forestry Centre 1987.

Northern Forestry Centre Centre de foresterie du Nord

Information Reports / Rapports d'information

- Grewal, H. 1987. Bibliography of lodgepole pine literature. Inf. Rept. NOR-X-291.
- Harvey, E.M. 1987. Proceedings of the 1986 Prairie Federal-Provincial Nurserymen's Meeting. Inf. Rep. NOR-X-287.
- Hillman, G.R. 1987. Improving wetlands for forestry in Canada. Inf. Rep. NOR-X-288.
- Hiratsuka, Y. 1987. Forest tree diseases of the prairie provinces. Inf. Rep. NOR-X-286.
- Moore, W.C.; Chow, W. 1987. A mapping and analysis of resources system application. Inf. Rep. NOR-X-285.
- Radvanyi, A. 1987. Snowshoe hares and forest plantations: A literature review and problem analysis. Inf. Rept. NOR-X-290.
- analysis. Inf. Rept. NOR-X-290. Singh, T. 1987. Estimating downed-dead roundwood fuel volumes in central Alberta. Inf. Rep. NOR-X-289.

Journal Articles / Articles de revues scientifiques

- Apps, M.J.; Duke, M.J.M.; Turner, B.V. 1987. Fission track mapping of uranium in black spruce (*Picea mariana*) twigs. J. Radioanal. Nucl. Chem. 110(1):245-252.
- Baker, J. 1987. Distribution of N in a simulated profile of a podsolic gray luvisol following urea fertilization. Can. J. Soil Sci. 67:271-280.
- Bella, I.E.; Navratil, S. 1987. Growth losses from winter drying (red belt damage) in lodgepole pine stands on the east slopes of the Rockies in Alberta. Can. J. For. Res. 17:1289-1292.
- Bernier, P.Y. 1987. Microwave remote sensing of snowpack properties: potential and limitations. Nordic Hydrol. 18:1-20.
- Bernier, P.Y. 1987. Regeneration and growth of lodgepole pine in small openings in the Alberta foothills. Can. J. For. Res. 17(7):758-759.
- Blenis, P.V.; Hiratsuka, Y.; Mallett, K.I. 1987. Armillaria root rot in Alberta. Univ. Alberta, Edmonton, Alb. Agric. For. Bull. 10(1):4-5.
- Chakravarty, P.; Sidhu, S.S. 1987. Effect of glyphosate, hexazinone, and triclopyr on in vitro growth of five species of ectomycorrhizal fungi. Eur. J. For. Pathol. 17:204-210.
- Chakravarty, P.; Sidhu, S.S. 1987. Effect of hexazinone (Pronone^{**} 5G) on the seedling growth and mycorrhizal incidence of *Pinus contorta* var. *latifolia* and *Picea glauca*. Eur. J. For. Pathol. 17:282-291.
- Feng, J.C. 1987. Persistence, mobility and degradation of hexazinone in forest silt loam soils. J. Environ. Sci. Health B22(2):221-233.
- Hiratsuka, Y.; Blenis, P.; Chang, K. 1987. The role of biotic and climatic factors in the epidemiology

of western gall rust. Univ. Alberta, Edmonton, Alb. Agric. For. Bull. 10(1):11-13.

- Jozsa, L.A.; Powell, J.M. 1987. Some climatic aspects of biomass productivity of white spruce stem wood. Can. J. For. Res. 17:1075-1079. Kennedy, K.A.; Addison, P.A. 1987. Some con-
- Kennedy, K.A.; Addison, P.A. 1987. Some considerations for the use of visual estimates of plant cover in biomonitoring. J. Ecol. 75:151-157.
- Khan, A.A.; Malhotra, S.S. 1987. Effects of vanadium, nickel and sulphur dioxide on polar lipid biosynthesis in jack pine. Phytochemistry. 26(6):1627-1630.
- Maynard, D.G.; Kalra, Y.P.; Radford, F.G. 1987. Extraction and determination of sulfur in organic horizons of forest soils. Soil Sci. Soc. Am. J. 51 (3):801-806.
- Singh, T. 1987. Heat of combustion and energy potential of tree species in western Canada. Natl. Woodlands 10(4):8-9.
- Singh, T. 1987. Wood density variations in thirteen Canadian tree species. Wood Fibre Sci. 19(4):362-369.
- Wu, J.; Wong, H.R. 1987. Colonization of lodgepole pine stumps by ants (Hymenoptera: Formicidae). Can. Entomol. 119:397-398.
- Zoltai, S.C. 1987. Peatlands and marshes in the wetland regions of Canada. Mem. Entomol. Soc. Can. 140:5-13.

Symposium Proceedings / Actes de symposiums

- Alexander, M.E.; Lanoville, R.A. 1987. Wildfires as a source of fire behavior data: a case study from Northwest Territories, Canada. Pages 86-93 in Preprint Vol. Ninth Conf. Fire For. Meteorol., April 21-24, 1987, San Diego, CA. Am. Meteorol. Soc., Boston, MA.
- Bernier, P.Y. 1987. Snow evaporation and the aerodynamic properties of an artificial juvenile lodgepole pine stand. Pages 213-215 in Prepr. Vol., 18th Conf. Agric. For. Meteorol., and 8th Conf. Biometeor. Aerobiol., Sept 14-18, 1987, Lafayette, ID. Publ. by Am. Meteorol., Soc., Boston, MA.
- Brace, L.G. 1987. Forest vegetation management research and development. Pages 82-92 in Industrial vegetation management: in pursuit of excellence. Proc. Semin., March 18, 1987. Chris Campbell Consulting Services, Calgary, Alb. De Franceschi, J.P.; Boylen, D.M. 1987. Costs and
- De Franceschi, J.P.; Boylen, D.M. 1987. Costs and benefits of precommercial thinning: an overview and case study. Pages 252-268 in Proc. Int. Union. For. Res. Organ. Int. Interdiv. Conf. Thinning. Moscow and Riga, Sept. 9-17, 1985. Part II. Int. Union. For. Res. Organ., Vienna, Austria.
- Dymock, I.J.; Dendwick, F.W. 1987. Monitoring viability of overwintering container stock. Pages

21-35 in E.M. Harvey, comp., Proc. 1986 Prairie Fed. Prov. Nurserymen's Meet. The Pas. Manitoba, Sept. 9-11, 1986. Can. For. Serv. North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-287.

- Edwards, I.K. 1987. Nutrient regimes and cold hardiness in conifer seelings. Pages 14-17 in E.M. Harvey, comp., Proc. 1986 Prairie Fed.-Prov. Nurserymen's Meet. The Pas, Manitoba, Sept. 9-11, 1986. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-287.
- Grewal, H.S. 1987. Biomass productivity in twoyear-old aspen cutovers near Calling Lake and Slave Lake, Alberta. Pages 124-128 in Z. Stiasny, ed., Proc. Sixth Can. Bioenergy R&D Semin. Richmond, B.C., Febr. 1987. Elsevier Applied Science Publishers, New York. Harvey, E.M. 1987. Methods of stock quality
- monitoring for the prairie provinces. Pages 1-7 in E.M. Harvey, comp., Proc. 1986 Prairie Fed. Prov. Nurserymen's Meet. The Pas, Manitoba, Sept. 9-11, 1986. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-287.
- Harvey, E.M. 1987. Report on the National Tree Nursery Weed Control Association Workshop. Pages 42 in E.M. Harvey, comp., Proc. 1986 Prairie Fed. Prov. Nurserymen's Meet. The Pas, Manitoba, Sept. 9-11, 1986. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-287.
- Kurz, W.A.; Apps, M.J.; Chan, Y.H. 1987. PROBE: a program to facilitate user-friendly gaming with FORCYTE. Pages 160-164 in Z. Stiasny, ed., Proc. Sixth Can. Bioenergy R&D Semin. Richmond, B.C., Febr. 1987. Elsevier Applied Science Publishers, New York. Lee, B.S.; Pickford, S.G. 1987. An expert system for
- use in dispatching suppression ressources to wildfires. Pages 245-248 in Preprint. Vol. Ninth Conf. Fire For. Meteorol., San Diego, CA, April 21-24, 1987. Am. Meteorol. Soc., Boston, MA.
- Lewis, V.R.; Volney, W.J.A.; Milstead, J.E. 1987. Modelling the distribution of leaves, oakworms and damaged foliage for the coast live oak. Pages 127-131 in Proc. Symp. Multiple-use Manage. Calif. Hardwood Resour., San Luis Obispo, CA., Nov. 12-14, 1986. U.S. Dep. Agric., For. Serv., Pac. Southwest For. Range Exp. Stn., Berkeley, CA. Gen. Tech. Rep. PSW-100. McAlpine, R.S. 1987. LAPFWI and LAPFBP: two
- 'BASIC' computer programs to assess fire danger and potential fire behavior. Pages 243-244 in Preprint Vol. Ninth Conf. Fire For. Meteorol., San Diego, CA., Apr. 21-24, 1987. Am. Meteorol Soc., Boston, MA.
- Milstead, J.E.; Volney, W.J.A.; Lewis, V.R. 1987. Environmental factors influencing California oakworm feeding on California live oak. Pages 132-138 in Proc. Symp. Multiple-use Manage. Calif. Hardwood Resour., San Luis Obispo, CA., Nov. 12-14, 1986. U.S. Dep. Agric., For. Serv., Pac. Southwest For. Range Exp. Stn., Berkeley, CA. Gen. Tech. Rep. PSW-100.

- Pickford, S.G. 1987. Using the "WNDCOM" wind prediction model in a fire dispatching system. Pages 222-226 in Preprint Vol. Ninth Conf. Fire For. Meteorol., San Diego, CA, April 21-24, 1987. Am. Meteorol. Soc., Boston, MA.
- Singh, T. 1987. Prediction error in tree biomass regression functions for western Canada. Pages 199-208 in Estimating tree biomass regressions and their error. Proc. Workshop Tree Biomass Regression Funct. Contrib. Error For. Inventory Estimates, Syracuse, NY, May 26-30, 1986. U.S. Dep. Agric., For. Serv., Northeast. For. Exp. Stn., Agric., For. Serv., Northeast. For. Exp. Stn., Broomall, PA. Gen. Tech. Rep. NE-117. The Kastesher M.M. 1987.
- Singh, T.; Kostecky, M.M. 1987. Energy potential from Manitoba forest biomass. Pages 101-105 in Z. Stiasny, ed., Proc. Sixth Can. Bioenergy R&D Semin. Richmond, B.C., Febr. 1987. Elsevier
- Applied Science Publishers, New York. Swanson, R.H. 1987. Applying hydrologic principles to the management of subalpine forests for water supply. Pages 79-85 in Management of Subalpine Forest: Building on 50 Years of Research. Proc. Tech. Conf., Silver Creek, CO, July 6-9, 1987. U.S. Dep. Agric., For. Serv., Rocky Mtn. For. Range Exp. Stn., Fort Collins, CO. Gen. Tech.
- Rep. RM-149. Zoltai, S.C.; Johnson, J.D. 1987. Relationships between nutrients and vegetation in peatlands of the prairie provinces. Pages 535-542 in C.D.A. Rubec and R.P. Overend, comps., Proc. Symp. Wetlands/Peatlands, Edmonton, Alb., Aug. 23-27, 1987.

- Ascher, A., editor. 1987. Timberlines. No. 2, Spring 1987. No. 3, Summer 1987. No. 4, Autumn 1987. Can. For. Serv., North. For. Cent., Edmonton, Alb.
 Bohning, R.A. 1987. Tables and facts in J.K. Samoil, ed., Manitoba's Forests. Can. For. Serv., New York, State Structure, Structu North. For. Cent., Edmonton, Alb. For. Rep. 32.
- Canada-Alberta Forest Resource Development Agreement. 1987. Directory of secondary woodusing industries in Alberta - 1986. 147 p.
- Chrosciewicz, Z. 1987. Evaluation of postburn seeding of jack pine in central Saskatchewan.
- Forest Management Note 41. 3 p. De Groot, W.J. 1987. Examples of Canadian Forest Fire Behavior Prediction System fuel types in Saskatchewan. Can. For. Serv., Sask. Dist. Off., Prince Albert, Sask. Poster with text.
- Delisle, G.P.; Hall, R.J. 1987. Forest fire history maps of Alberta, 1931 to 1983. 55 p. + 6 maps.
- Denyer, W.B.G. 1987. Urban home garden composting. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. M 1-75. Revised.
- Denyer, W.B.G. 1987. What's wrong with my tree? Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 4-75. Revised.
- Drouin, J. 1987. Pear slug. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 2-75. Revised.
- Drouin, J. 1987. Poplar bud gall mite. Can. For.

Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 13-76. Revised.

- Drouin, J. 1987. Spruce budworm. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 20-77. Revised.
- Drouin, J. 1987. To spray or not to spray. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 6-75. Revised.
- Drouin, J. 1987. A willow shoot-boring sawfly. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 24-78. Revised.
- Emond, F.J.; Wong, H.R. 1987. Common insects attacking poplar stooling beds in the Prairie Provinces. Forest Management Note 42. 3 p.
- Hildahl, V. 1987. Fall cankerworm. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 3-75. Revised.
- Hildahl, V. 1987. Forest tent caterpillar. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 17-77. Revised.
- Hildahl, V. 1987. Yellow-bellied sapsucker. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 7-75. Revised. Kusch, D.S. 1987. Lilac leaf miner. Can. For. Serv.,
- Kusch, D.S. 1987. Lilac leaf miner. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 9-76. Revised.
- Kusch, D.S. 1987. Spruce needle miner. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 8-76. Revised.

- Kusch, D.S. 1987. Wasps. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 19-77. Revised.
- Kusch, D.S. 1987. Yellow-headed spruce sawfly. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 5-75. Revised. McAlpine, R.S. 1987. Two BASIC programs for fire
- McAlpine, R.S. 1987. Two BASIC programs for fire danger and fire behavior computations. Forest Management Note No. 43. 3 p.
- Merrill, D.F.; Alexander, M.E. editors. 1987. Glossary of forest fire management terms, 4th edition. Natl. Res. Counc. Can., Comm. For. Fire Manage., Ottawa, Ont. NRCC 26516.
- Program review 1986-87. 68 p.
- Samoil, J.K., ed. 1987. Manitoba's forests. Forestry Report No. 32. 16 p.
- Samoil, J.K.; Boughton, B. 1987. Saskatchewan's forests. Forestry Report No. 33. 16 p.
- Stevenson, R.E. 1987. Ticks. Pest Leaflet.
- Still, G.N. 1987. Ugly-nest caterpillar. Can. For. Serv., North. For. Cent., Edmonton, Alb. Pest Leafl. PL 11-76. Revised.
- Walker, N.R.; Ball, W.J. 1987. Container seedling field performance after 10 years. Forest Management Note 44. 3 p.
- Woodard, P.M.; Delisle, G.P. 1987. Biomass regression equations for common tree seedlings and shrubs in Jasper National Park, Alberta. Univ. Alberta, Dep. For. Sci., Edmonton, Alb. For. Notes 1.

Pacific Forestry Centre Centre de foresterie du Pacifique

Information Reports / Rapports d'information

- Fraser, G.A.; Howard, W.G. 1987. Economic and social aspects of tree planting in British Columbia: a survey of workers and contractors. Inf. Rep. BC-X-291.
- McDaniels, T.L.; Manning, G.H. 1987. Estimation of the supply of forest biomass for energy conversion in British Columbia. Inf. Rep. BC-X-294.
- McMullen, L.H.; Thomson, A.J.; Quenet, R.V. 1987. Sitka spruce weevil (*Pissodes strobi*) population dynamics and control: A simulation model based on field relationships. Inf. Rep. BC-X-288.
- on field relationships. Inf. Rep. BC-X-288. Nagle, G.S.; Massie, M.R.C.; Robinson, G.; Oakley, P.; Manning, G.H. 1987. The economics of residual fuel and fibre production on the B.C. coast. Inf. Rep. BC-X-289.
- Pottie, M. A.; Sinclair, A.W.J. 1987. Design and testing of a prototype rock separator for sortyard debris. Inf. Rep. BC-X-292.
- Reports and publications 1986. 1987. Inf. Rep. BC-X-290.
- Safranyik, L.; Linton, D.A. 1987. Line intersect sampling for the density and bark area of logging residue susceptible to the spruce beetle, *Dendroc*tonus rufipennis (Kirby). Inf. Rep. BC-X-295.
- Stanek, W.; Orloci, L. 1987. Some silvicultural ecosystems in the Yukon. Inf. Rep. BC-X-293.
- Wood, C.S.; Van Sickle, A. 1987. Forests insect and disease conditions: British Columbia & Yukon 1986. Inf. Rep. BC-X-287.
- Wood, C.S.; Van Sickle, A.; Humble, G.A. 1987. Forest insect and disease conditions: British Columbia & Yukon 1987. Inf. Rep. BC-X-296.

Journal Articles / Articles de revues scientifiques

- Alfaro, R.I.; Taylor, S.; Wegwitz, E.; Brown, G.B. 1987. Douglas-fir tussock moth damage in British Columbia. For. Chron. 63:351-355.
- Barclay, H.J. 1987. Combining methods of pest control: complementarity of methods and a guiding principle. Nat. Res. Model. 2(2):299-323.
- Barclay, H.J. 1987. Models for pest control: Complementary effects of periodic releases of sterile pests and parasitoids. Theor. Popul. Biol. 31(1):76-89.
- Barclay, H.J. 1987. Models for pest control using food-baited traps and either insecticides or chemosterilants. Agric. Ecosyst. Environ. 19:41-54.
- Barclay, H.J. 1987. Models for pest control using sex pheromones and chemosterilants. Insect Sci. Applic. 8(2):187-196.
- Barclay, H.J. 1987. Models of sterile insect releases for populations under attack by parasitoids. Ecol. Model. 36:155-169.

Bloomberg, W.J. 1987. Computers in forest disease

research, application and technology transfer. Can. J. Plant Pathol. 9:334-342.

- Bonnor, G.M.; Magnussen, S. 1987. Forest inventories in Canada: a framework for change. For Chron. 63(3):193-198.
- Duncan, B. 1987. An illustrated guide to the identification and distribution of the species of *Dendroctonus Erichson* (Coleoptera: Scolytidae) in British Columbia. J. Entomol. Soc. Brit. Columbia 84:101-113.
- Eis, S. 1987. Root systems of older immature hemlock, cedar, and Douglas-fir. Can. J. For. Res. 17:1348-1354.
- El-Kassaby, Y.A.; Meagher, M.D.; Parkinson, J.; Portlock, F.T. 1987. Allozyme inheritance, heterozygosity and outcrossing rate among *Pinus* monticola near Ladysmith, British Columbia. Heredity 58:173-181.
- Funk, A. 1987. Monilia versiformia sp. nov. (Hyphomycetes) from a perennial Douglas-fir canker. Can. J. Bot. 65:23-25.
- Funk, A. 1987. Stigmina zilleri sp. nov., associated with brown leaf spot of broadleaf maple. Can. J. Bot. 65:482-483.
- Griffin, M.S.; Sutherland, J.R.; Dennis, J.J. 1987. Blight of conifer seedlings caused by Colletotrichum gloeosporioides. New Forests 1:81-88.
- Honer, T.G. 1987. New definitions and Canadian measurements units for stacked roundwood. For. Chron. 63(4):266-267.
- Hopkins, J.; Funk, A. 1987. Apostrasseria lunata associated with seedling mortality of western white pine and Douglas-fir in British Columbia. Can. Plant Dis. Surv. 67(1):23.
- Hulme, M.A.; Harris, J.W.E.; Dawson, A.F. 1987. Exploiting adult girth to separate *Pissodes strobi* (Peck) (Coleoptera: Curculionidae) from associated insects in leaders of *Picea sitchensis* (Bong.) Carr. Can. Entomol. 119:751-753.
- Hunt, R.S.; Ying, C.C.; Ashbee, D. 1987. Variation in damage among *Pinus contorta* provenances caused by the needle cast fungus *Lophodermella* concolor. Can. J. For. Res. 17:594-597.
- Lee, Y.J. 1987. Application of aerial photography in forest inventory. Sen Lin Diao Cha 2:38-45 (in Chinese).
- Lee, Y.J. 1987. Lecture to the National Remote Sensing Centre in China. Yunnan Lane Diaocha Guihoa 3:16 (in Chinese).
- Linton, D.A.; Safranyik, L.; McMullen, L.H.; Betts, R. 1987. Field techniques for rearing and marking mountain pine beetle for use in dispersal studies. J. Entomol. Soc. B.C. 84:53-58.
- Moser, J.C.; Smiley, R.L.; Otvos, I.S. 1987. A new Pyemotes (Acari: Pyemotidae) reared from the Douglas-fir cone moth. Internat. J. Acarol. 13(2):141-147.

- Otvos, I.S.; Cunningham, J.C.; Alfaro, R.I. 1987. Aerial application of nuclear polyhedrosis virus against Douglas-fir tussock moth, Orgyia pseudotsugata (McDunnough) (Lepidoptera: Lymantriidae): II. Impact 1 and 2 years after application. Can. Entomol. 119:707-715.
- Otvos, I.S.; Cunningham, J.C.; Friskie, L.M. 1987. Aerial application of nuclear polyhedrosis virus against Douglas-fir tussock moth, Orgyia pseudotsugata (McDunnough) (Lepidoptera: Lymantriidae); I. Impact in the year of application. Can. Entomol. 119:697-706.
- Pang, P.C.; Barclay, H.J.; McCullough, K. 1987. Above-ground nutrient distribution within trees and stands in thinned and fertilized Douglas-fir. Can. J. For. Res. 17(11):1379-1384.
- Safranyik, L.; Linton, D.A. 1987. Patterns of landing of spruce beetles, *Dendroctonus rufipennis* (Coleoptera: Scolytidae), on baited lethal trap trees. J. Entomol. Soc. B. C. 84:21-32.
- Sahota, T.S.; Peet, F.G.; Ibaraki, A. 1987. Manipulation of egg-gallery length to vary brood density in spruce beetle, *Dendroctonus refipennis* (Coleoptera: Scolytidae): Effects on brood survival and quality. J. Entomol. Soc. Brit. Columbia 84:59-63.
- Schreuder, H.T.; Bonnor, G.M. 1987. Forest inventories in the United States and Canada. For. Chron. 63(6): 431-434.
- Shore, T.L.; McLean, J.A.; Zanuncio, J.C. 1987. Reproduction and survival of the ambrosia beetle *Trypodendron lineatum* (Oliv.) (Coleoptera: Scolytidae) in Douglas-fir and western hemlock logs. Can. Entomol. 119:131-139.
- Summers, D.; Ruth, D.S. 1987. Effect of Diatomaceous earth, malathion, dimethoate and permethrin on *Leptoglossus occidentalis* (Hemiptera: Coreidae): A pest of conifer seed. J. Entomol. Soc. B.C. 84:-33-38.
- Thomson, A.J. 1987. Comparison of lodgepole pine yield tables. Can. J. For. Res. 17(9):1110-1114.
- Trofymow, J.A.; Coleman, D.C.; Cambardella, C. 1987. Rates of rhizodeposition and ammonium depletion in the rhizosphere of axenic oat roots. Plant Soil. 97:333-344.
- Whitney, H.S.; Bandoni, R.J.; Oberwinkler, F. 1987. Entomocorticium dendroctoni gen. et sp. nov. (Basidiomycotina), a possible nutritional symbiote of the mountain pine beetle in lodgepole pine in British Columbia. Can. J. Bot. 65:95-102.
- Ying, C.C.; Hunt, R.S. 1987. Stability of resistance among *Pinus contorta* provenances to *Lophodermella concolor* needle cast. Can. J. For. Res. 17:1596-1601.

Symposium Proceedings / Actes de symposiums

Alfaro, R.I. 1987. Defoliation damage to interior Douglas-fir. Pages 96-104 in F. Barber, ed., Proc. Dry-belt Timber Management: A Review for Practitioners Workshop, Williams Lake, B.C., October 6-7, 1987. Sponsored by the Northern Silviculture Committee, B.C. Min. of Forests and Lands. 106 p.

- Bonnor, G.M. 1987. Canada's biomass inventory: lessons to be learned for fuelwood inventories. Pages 286-288 in H.G. Lund, M. Caballero-Deloya, and R. Villarreal-Canton, eds., Proc. Conference on Land and Resource Evaluation for National Planning in the Tropics, Chetumal, Mexico, Jan. 25-31, 1987.
- Bonnor, G.M. 1987. Inventory of forest biomass in Canada. Pages 116-118 in Z.Z. Stiasny, Ed., Canadian Bioenergy, R & D Seminar (6th, 1987), Richmond, B.C.
- Bonnor, G.M.; Magnussen, S. 1987. Predicting stem diameter distributions from growth probability equations. Pages 192-200 in Ek, A.R. et al., eds., Proc. IUFRO Conf. Forest Growth Modelling and Prediction, Vol. 1. Minneapolis, Minn. Soc. Am. For. Publ. SAF 87.12.
- Bonnor, G.M.; Magnussen, S. 1987. Some applications of probability matrices in growth and yield modelling. Pages 56-64 in Proc. Second Canadian Forestry Service Modelling Workshop, Pacific Forestry Centre, Sept. 1986.
- Hetherington, E.D. 1987. Carnation Creek, Canada — Review of a west coast fish/forestry watershed impact project. Pages 531-538 in Forest Hydrology and Watershed Management, Proc. Vancouver Symposium, August 1987. IAHS Publ. no. 167.
- Hetherington, E.D. 1987. The importance of forests in the hydrological regime, Chapter 7. Pages 179-211 in M.C. Healey and R.R. Wallace, eds., Canadian Aquatic Resources. Can. Bull. Fish. Aquat. Sci. 215.
- Peet, F.G.; Sahota, T.S. 1987. A digital image processing system for entomological studies. Pages 258-263 in Proc. IEEE Pacific Rim Conference on Communications, Computers and Signal Processing, Victoria, June 4-5, 1987.
- Pollard, D.F.W. 1987. Forestry and climate change: facing uncertainty. E.B. Eddy Distinguished Lecture Series, Faculty of Forestry, Univ. Toronto, Nov. 1987, 18-39.
- Preston, C.M. 1987. Review of solution NMR of humic substances. Pages 3-32 (Chapter 2) in R.L. Wershaw and M.A. Mikita, eds., NMR of Humic Substances and Coal. Proc. Eighth Rocky Mountain Regional American Chemical Society Meeting, Denver, CO, June 8-10, 1986. Lewis Publishers, Chelsea, MI.
- Shore, T.L. 1987. Hazard rating for insect infestations. Page 35 in Proc. Thirty-eight Annual Western Forest Insect Work Conference, Park City, UT, March 2-5, 1987.
 Trofymow, J.A. 1987. Roots in forest soils: biology
- Trofymow, J.A. 1987. Roots in forest soils: biology and symbioses. Introduction. Pages ii-iii in B. Dancik, ed., Papers from the Meeting of the IUFRO Working Party on Root Physiology and Symbioses, University of Victoria, August 4-8, 1987. Can. J. For. Res. 17(8).
- Van Sickle, G.A. 1987. Pacific Region Status of important forest pests and experimental control projects. In B. Moody, comp., Proc. 15th Annual Pest Control Forum, Ottawa, Nov. 18-20, 1987. Forestry Canada.

- Andrews, R.J. 1987. Engraver beetle attack in stands adjacent to logged areas in the western portion of the Williams Lake TSA. Forest Insect and Disease Survey Pest Report. Andrews, R.J. 1987. Forest insect and disease con-
- ditions, Cariboo forest region, 1986. Forest Insect and Disease Survey Report 88-1. 18 p.
- Andrews, R.J. 1987. Maps of major forest insect infestations, Cariboo forest region, 1913-1986. Forest Insect and Disease Survey Report 87-9. 42 p.
- Anon. 1987. Detection of balsam woolly aphid. Forest Insect and Disease Survey Fact Sheet. 4 p.
- Bonnor, G.M. 1987. Forest Biomass Inventory. Pages 47-73 in Biomass - Regenerable Energy. Wiley.
- Canada-British Columbia Forest Resource Development Agreement. 1987. Annual Report 1986/87. 17 p.
- Canadian Forestry Service. 1987. Canadian Forest Fire Danger Rating System - Users' Guide. Produced by the Can. For. Serv. Fire Danger Group. Three-ring binder (unnumbered publication).
- Edwards, D.G.W. 1987. Methods and procedures for testing tree seeds in Canada. Forestry Technical Report 36, 31 p. Edwards, D.G.W. 1987. Méthode de contrôle des
- semences forestières au Canada. Rapport tech-
- nique de foresterie 36. 34 p. Erickson, R.D. 1987. Maps of major forest insect infestations, Kamloops forest region, 1912-1986. Forest Insect and Disease Survey Report 87-8. 68 p.
- Erickson, R.D. 1987. Western spruce budworm infestations, Kamloops and Neskainlith Indian Reserves, 1987. Forest Insect and Disease Survey Pest Report.
- Erickson, R.D.; Loranger, J. 1987. Forest insect and disease conditions, Kamloops forest region, 1986. Forest Insect and Disease Survey Report 88-2. 37 p.
- Erickson, R.D.; Wood, C. 1987. Predicted defoliation of Douglas-fir by western spruce budworm in the Kamloops region in 1987 based on egg masses and overwintering larvae. Forest Insect and Disease Survey Pest Report.
- Federal Forestry Research Funds; Do you qualify? 1987. Inf. Leafl.
- Ferris, R.L. 1987. A canker fungus, Nitschkia molnarii in association with a bark miner, Laspeyresia pseudotsugae in young Douglas-fir near Campbell River. Forest Insect and Disease Survey Pest Report.
- Ferris, R.L. 1987. Balsam woolly aphid, Adelges piceae, extends beyond the regulation area in Vancouver forest region. Forest Insect and Disease Survey Pest Report.
- Ferris, R.L. 1987. Balsam woolly aphid, Adelges piceae, on West Thurlow Island near Campbell River, 1987. Forest Insect and Disease Survey Pest Report.

- Ferris, R.L. 1987. Winter moth, Operophtera brumata egg hatch in Victoria, B.C. Forest Insect and Disease Survey Pest Report.
- Ferris, R.L.; Duncan, R. 1987. A new record of a gall midge infesting yellow cedar in coastal British Columbia, 1987. Forest Insect and Disease Survey Pest Report.
- Garbutt, R.; Turnquist, R. 1987. Forest insect and disease conditions, Prince George forest region, 1986. Forest Insect and Disease Survey Report
- 88-4. 34 p.
 Garbutt, R. 1987. Forest insect and disease conditions, Yukon Territory, 1986. Forest Insect and Disease Survey Report 88-7. 9 p.
- Glover, M.M.; Sutherland, J.R.; Leadem, C.I.; Shrimpton, G. 1987. Efficacy and phytotoxicity of fungicides for control of botrytis gray mould on container-grown conifer seedlings. FRDA Rep. 012.
- Humphreys, N. 1987. History of population fluctuations and infestations of important forest insects in the Vancouver forest region 1911-1986. Revised and updated. Forest Insect and Disease Survey (unnumbered)
- Humphreys, N.; Ferris, R.L. 1987. Forest insect and disease conditions, Vancouver forest region, 1986. Forest Insect and Disease Survey Report 88-6. 35 p.
- Indian Forest Lands Program. 1987. Treetalk No. 3. FRDA.
- Indian Forest Lands Program. 1987. Treetalk No. 4. FRDA
- Koot, H.P.; Vallentgoed, J. 1987. Forest insect and disease conditions, Nelson forest region, 1986. Forest Insect and Disease Survey Report 88-3. 39 p.
- LePage, P.; Pollack, J.C. 1987. An all-season container and bareroot planting trial of lodgepole pine and white spruce: 14-year results. FRDA
- Rep. 004. 28 p. Marshall, V.G.; Reeves, R.M.; Norton, R.A. 1987. Catalogue of the Oribatida (Acari) of continental United States and Canada. Publication sold by the Entomological Society of Canada (\$20.00, non members).
- Pacific Forestry Centre. Who's Who at the Pacific Forestry Centre 1987. 24 p.
- Stewart, A. 1987. Current defoliation of western hemlock and predictions for 1988 on the Queen Charlotte Islands, B.C. Forest Insect and Disease Survey Pest Report.
- Sutherland, J.R.; Miller, T.; Quinard, R.S. 1987. Cone and seed diseases of North American conifers. North American Forestry Commission Publication No. 1.
- Teske, E. 1987. Program review 1986-87. 64 p.
- Teske, E. 1987. Information forestry Newsletter 14:1. 8 p.
- Teske, E. 1987. Information Forestry Newsletter 14:2.
- Teske, E. 1987. Information Forestry Newsletter 14:3.
- Timber. No. 5, Winter 1987-88. 8 p.

Publications 1987

- Turnquist, R. 1987. Maps of major forest insect infestations, Prince George forest region, 1944-1986. Forest Insect and Disease Survey Report 87-11. 36 p.
- Turnquist, R. 1987. Status of spruce beetle on the Haines Road, Prince Rupert Region. Forest Insect
- and Disease Survey Special Report. Unger, L.; Stewart, A. 1987. Forest insect and disease conditions, Prince Rupert forest region, 1986. Forest Insect and Disease Survey Report 88-6, 50 p.
- Vallentgoed, J. 1987. Larch casebearer in the Nelson region with defoliation predictions for 1987. Forest Insect and Disease Survey Pest Report.
- Vallentgoed, J. 1987. Maps of major forest insect infestations, Nelson forest region, 1928-1986.

Forest Insect and Disease Survey Report 87-10. 68 p.

- Van Sickle, G.A. 1987. Host responses. Pages 57-70 in Western Spruce Budworm. USDA For. Serv. Tech. Bull. 1694.
- Wood, C.S. 1987. Status of western spruce budworm populations in British Columbia, July 1987. Forest Insect and Disease Survey Pest Report. Wood, C.S. 1987. Tent caterpillars in B.C., 1987.
- Forest Insect and Disease Survey Pest Report.
- Wood, C.S. 1987. Western spruce budworm in B.C. in 1987 and forecast for 1988. Forest Insect and Disease Survey Pest Report.
- Wood, C.S.; Van Sickle, G.A. 1987. Forest pest conditions in the Pacific region: a midseason summary. Forest Insect and Disease Survey Special Report. 19 p.

III. 1988

Forestry Canada — Headquarters Forêts Canada — Administration centrale

Information Reports / Rapports d'information

- Jacques, R. 1988. Impact of forestry activity on the economy of Canada and its provinces: An input-output approach. Inf. Rep. E-X-39. Jacques, R. 1988. L'impact de l'activité forestière
- sur l'économie du Canada et de ses provinces: une approche intersectorielle. Rapp. d'inf. E-X-39F.
- Pharand, N.L. 1988. Forest sector-dependent communities in Canada: A demographic profile. Inf. Rep. DPC-X-23.
- Pharand, N.L. 1988. Les collectivités canadiennes dont l'économie repose sur le secteur forestier: Un
- profil démographique. Rapp. d'inf. DPC-X-23F. Selected Forestry Statistics Canada 1987. 1988. Inf. Rep. E-X-40.
- Recueil de statistiques forestière canadiennes 1987. 1988. Rapp. d'inf. E-X-40F.

Journal Articles / Articles de revues scientifiques

Huber, J.T.; Rajakulendran, V.K. 1988. Redescription of and host-induced antennal variation in Anaphes iole Girault (Hymenoptera: Mymaridae), an egg parasite of Miridae (Hemiptera) in North America. Can. Entomol. 120:893-901.

Other Publications / Autres publications

Canada's forests 1987. 1988. Statistics Leaflet.

- Conseil consultatif de la recherche forestière du
- Canada. 1988. Rapport annuel 1987. 11 p. Digest des rapports d'information. 1987. Publica-tion bimensuelle. Vol. 9, nºª 1 à 6. 63 p. Focus on FORSTATS. 1988. March 1988. 5 p.
- Forest Research Advisory Council of Canada. 1988. Annual report 1987. 11 p.
- FORSTATS au point. 1988. Mars 1988. 5 p.
- Haddon, D.B., ed. 1988. Forest inventory terms in Canada, 3rd edition. 109 p.
- Haddon, D.B., comp. 1988. Terminologie de l'inventaire des forêts du Canada, 3ª édition. 113 p.
- Huber, J.T. 1988. The species groups of Gonatocerus Nees in North America with a revision of the Sulphuripes and Ater groups (Hymenoptera: Mymaridae). Memoirs of the Entomological Society of Canada, no. 141. 109 p.
- Information Reports Digest. 1988. Bi-monthly Publication. Vol. 9, No. 1 to 6. 63 p.
- Les forêts du Canada 1987. 1988. Brochure de statistiques.
- McGuffin, W.C. Guide to the Geometridae of Canada (Lepidoptera); III, IV and V: Subfamilies Archiea-rinæ, Œnochrominæ, and Geometrinæ. 1988. Memoirs of the Entomological Society of Canada, no. 145. 56 p.

Newfoundland Forestry Centre Centre de foresterie de Terre-Neuve

Information Reports / Rapports d'information

- Clarke, L.J.; Carew, G.C. 1988. Forest insect and disease conditions in Newfoundland and Labrador in 1987. Inf. Rep. N-X-265.
- Langor, D.W.; Raske, A.G. 1988. Annotated bibliography of the eastern larch beetle, Dendroctonus simplex LeConte (Coleoptera: Scolytidae). Inf. Rep. N-X-266.
- Milne, G.R. 1988. Alternative measures of valuing commercial forest resources in Newfoundland. Inf. Rep. N-X-258.
- Milne, G.R. 1988. Strategic forest sector issues in Newfoundland and potential CFS program initiatives. Inf. Rep. N-X-267. Newton, P.F. 1988. Initial response of partially de-
- foliated black spruce trees to precommercial thin-ning. Inf. Rep. N-X-264.

Journal Articles / Articles de revues scientifiques

- Hall, J.P. 1988. Using the Pilodyn tester in selecting plus trees. North. J. Appl. For. 5:170-171.
- Langor, D.W.; Raske, A.G. 1988. Mortality factors and life tables of the eastern larch beetle, Dendroctonus simplex (Coleoptera: Scolytidae), in Newfoundland. Environ. Entomol. 17(6):959-963.
- Lavigne, M.B. 1988. Growth and net assimilation rates in thinned and unthinned stands of balsam fir. Can. J. For. Res. 19(9):1205-1210.
- Lavigne, M.B. 1988. Stem growth and respiration of young balsam fir trees in thinned and unthinned
- stands. Can. J. For. Res. 18(5):483-489. Mallik, A.U.; Newton, P.F. 1988. Inhibition of black spruce seedling growth by forest-floor substrates of central Newfoundland. For. Ecol. Manage. 23:273-283.
- Newton, P.F.; Smith, V.G. 1988. Diameter distributional trends within mixed black-spruce/balsamfir and pure black-spruce stand types. For. Ecol. Manage. 25: 123-138.

- Sundaram, A.; West, R.J.; Raske, A.G.; Retnakaran, A. 1988. Spray atomization and deposition patterns of one newtonian and two pseudoplastic formulations after aerial application over a mature conifer forest in Newfoundland. J. Environ. Sci. Health B23(1):85-99.
- Thompson, I.D. 1988. Habitat needs of furbearers in relation to logging in boreal Ontario. For. Chron. 64(3):251-261.
- Thompson, I.D.; Peterson, R.O. 1988. Does wolf predation alone limit the moose population in Pukaskwa park?: A comment. J. Wildl. Manage. 52(3):556-559.
- Thompson, I.D.; Porter, M.S.; Walker, S.L. 1987. A key to the identification of some small boreal mammals of central Canada from guard hairs. Can. Field-Nat. 101(4): 614-616.

Symposium Proceedings / Actes de symposiums

- Dobesberger, E.J. 1988. Modelling growth impact of defoliated balsam fir by spruce budworm in Newfoundland. In Proceedings XVIII Interna-tional Congress of Entomology, Vancouver, B.C.,
- July 3-9, 1988. Abstract. Raske, A.G.; Dobesberger, E.J. 1988. Variation in spruce budworm-caused tree mortality of balsam fir and black spruce by tree and stand parameters. In Proceedings XVIII International Congress of Entomology, Vancouver, B.C., July 3-9, 1988. Abstract.
- West, R.J.; Raske, A.G. 1988. Aerial application of Bacillus thuringiensis var. Kurstaki formulations against the hemlock looper: Protocols for maximum efficacy. Paper presented at the national meeting of the Entomological Society of America, Louisville, KY, Dec. 1988.

Other Publications / Autres publications

Program Review 1987-88. 59 p. Program Plan 1988-89. 235 p.

Forestry Canada — Maritimes Forêts Canada — Maritimes

Information Reports / Rapports d'information

- Estabrooks, G.F. 1988. Culture du sapin baumier dans des champs et en forêt pour la production d'arbres de Noël. Forêts Canada - Maritimes. Rapp. d'inf. M-X-164F.
- Fowler, D.P.; Park, Y.S. 1988. A provenance test of yellow birch in New Brunswick. Inf. Rep. M-X-169.
- Magasi, L. P. 1988. Forest pest conditions in the
- Maritimes 1987. Inf. Rep. M-X-166. Maliondo, S.M. 1988. Possible effects of intensive harvesting on continuous productivity of forest lands. Forestry Canada - Maritimes. Inf. Rep. M-X-171.
- Salonius, P.O.; Beaton, K.P.; van Raalte, G.D.; Mahendrappa, M.K.; Glen, W.M. 1988. Mortality in semi-mature white spruce on Prince Edward Island: age-related foliar nutrient studies. For-
- estry Canada Maritimes. Inf. Rep. M-X-172. Simpson, J.D.; Smith, R.F. 1988. A manual for forest tree seed orchard management in the Maritimes. Inf. Rep. M-X-167.
- Varty, I.W.; Holmes, S.E. 1988. Heterogeneity of spray deposit and efficacy within a single swath applied by aircraft over forest infested with spruce budworm, Choristoneura fumiferana (Clem.). Forestry Canada — Maritimes. Inf. Rep. M-X-168.

Journal Articles / Articles de revues scientifiques

- Bergh, J.C.; Eveleigh, E.S.; Seabrook, W.D. 1988. The mating status of field-collected male spruce budworm, Choristoneura fumiferana (Clem.) (Lepidoptera: Tortricidae), in relation to trap location, sampling method, sampling date, and adult emergence. Can. Entomol. 120:821-830. Cox, R.M. 1988. Sensitivity of forest plant repro-
- duction to long-range transported air pollutants: the effects of wet deposited acidity and copper on reproduction of Populus tremuloides. New Phytol. 110:33-38.
- Cox, R.M. 1988. Sensitivity of pollen from various coniferous and broad-leaved trees to combinations of acidity and trace metals. New Phytol. 109:193-201
- Cuff, W.R.; Hardman, J.M.; Muerji, M.K. 1988. Research planning and technology transfer: two case studies in support of the wheat industry. Mem. Entomol. Soc. Can. 143:19-27. Eidt, D.C.; Bacon, G.B.; DeGraeve, G.M.; Mallet,
- V.N. 1988. Fate and short-term persistence of the insecticide aminocarb in a New Brunswick (Canada) headwater stream. Arch. Environ. Contam. Toxicol. 17:817-829.

Fowler, D.P.; Park, Y.S.; Gordon, A.G. 1988. Ge-

netic variation of red spruce in the Maritimes. Can. J. For. Res. 18:703-709.

- Fowler, D.P.; Simpson, J.D.; Park, Y.S.; Schneider, M.H. 1988. Yield and wood properties of 25-yearold Japanese larch of different provenance in eastern Canada. For. Chron. 64(6):475-479.
- Leckie, D.G.; Ostaff, D.P. 1988. Classification of airborne multispectral scanner data for mapping current defoliation caused by the spruce budworm. For. Sci. 34(2):259-275.
- Leckie, D.G.; Teillet, P.M.; Fedosejevs, G.; Ostaff, D.P. 1988. Reflectance characteristics of cumulative defoliation of balsam fir. Can. J. For. Res. 18(8):1008-1016.
- Lees, J.C. 1988. Enrichment of hardwood regeneration on contemporary clearcuts by transplanting white ash sapling. Northern J. Appl. For. 5(3): 200-203.
- MacDougall, R.G.; MacLean, D.A.; Thompson, R.G. 1988. The use of electrical capacitance to determine growth and vigor of spruce and fir trees and stands in New Brunswick. Can. J. For. Res. 18: 587-594.
- Park, Y.S.; Fowler, D.P. 1988. Geographic variation of black spruce tested in the Maritimes. Can. J. For. Res. 18:106-114.
- Percy, K.E.; Baker, E.A. 1988. Effects of simulated acid rain on leaf wettability, rain retention and uptake of some inorganic ions. New Phytol. 108:75-82.
- Strongman, D.B.; Strunz, G.M.; Giguère, P.; Yu, C.-M.; Calhoun, L. 1988. Enniatins from Fusa-rium avenaceum isolated from balsam fir foliage and their toxicity to spruce budworm larvae, Choristoneura fumiferana (Clem.) (Lepidoptera: Tortricidae). J. Chem. Ecol. 14(3):753-764.
- Strunz, G.M.; Yu, C.M. 1988. On the crossed-aldol reaction of cyclohexane-1,2-dione with acetone, and the preparation of pyrroline derivatives from the product. Can. J. Chem. 66(5):1081-1083.
- von Aderkas, P.; Bonga, J.M. 1988. Formation of haploid embryoids of Larix decidua: Early embryogenesis. Am. J. Bot. 75(5): 690-700.

Symposium Proceedings / Actes de symposiums

Smith, R.F. (Compiler) 1988. Proceedings of the 1st Annual Maritime Seed Orchard Managers Workshop. Forestry Canada - Maritimes. Misc. Rep.

- Beckett, D. 1988 Maritimes Forestry Statistics. Forestry Canada — Maritimes. Brochure.
- Beckett, D.; Julien, F. 1988. Forestry Report New Brunswick, No. 4.

- Beckett, D.; Julien, F. 1988. Forestry Report Prince Edward Island. No. 5.
- Bonga, J.M.; von Aderkas, P. 1988. Attempts to micropropagate mature *Larix decidua* Mill. In M.R. Ahuja, ed., Somatic Cell Genetics of Woody Plants. Martinus-Nijhoff, Dordrecht, The Netherlands.
- Bonga, J.M.; von Aderkas, P.; James, D. 1988. Potential application of haploid cultures of trees species. In J.W. Hanover and D.E. Keathley, eds, Genetics Manipulation of Woody Plants, Plenum Publ. Co.
- Cormier, J.R. 1988. Forest insects and diseases in Kouchibouguac National Park in 1987. Tech. Note 192.
- Dobson, C.M.B. 1988. Forest insects and diseases in Prince Edward Island National Park in 1987. Tech. Note 193.
- Eidt, D.C.; Hollebone, J.E.; Lockhart, W.L.; Kingsbury, P.D.; Gadsby, M.C.; Ernst, W.R. 1988. Pesticides in forestry and agriculture: effects on aquatic habitats. Chapter 16 in J.A. Nriagu, ed., Aquatic Toxicology and Water Quality Management, Vol. 22, Advances in Environmental Science and Technology. John Wiley & Sons Inc., New York.
- Hallet, R.D.; Lanteigne, L.J.; Burns, T.W. 1988. Forest nursery production and shipments in the Maritimes, 1987. Tech. Note 197.
- Jamnick, M.S.; Clements, S.E. 1988. Modelling NIPF wood supply in the Maritimes — description and analysis. Forestry Canada — Maritimes Misc. Rep.
- Julien, F.; Beckett, D. 1988. Nova Scotia's forestry sector. Can. For. Ser. — Mar. For. Rep. no. 6.

- Lees, J.C.; West, R.C. 1988. A strategy for growing black ash in the Maritime provinces. Tech. Note 201.
- MacKay, A.W. 1988. Forest insects and diseases in Cape Breton Highlands National Park in 1987. Tech. Note 194.
- MacKay, A.W. 1988. Forest insects and diseases in Kekimkujik National Park in 1987. Tech. Note 195.
- Magasi, L.P. 1988. A synopsis of forest pest conditions in the Maritimes in 1987. Tech. Note 189.
- Magasi, L.P. 1988. Highlights of forest pest conditions in the Maritimes in mid-June 1988. Tech. Note 196.
- Magasi, L.P. 1988. Highlights of forest pest conditions in the Maritimes at the end of June 1988. Tech. Note 198.
- Magasi, L.P. 1988. Highlights of forest pest conditions in the Maritimes in mid-September 1988. Tech Note 200.
- Magasi, L.P. 1988. Highlights of forest pest conditions in the Maritimes at the end of July 1988. Tech. Note 199.
- Manley, A.; Linfield, G. 1988. Needs assessment and feasibility study for a microcomputer-based system for large landowners/group ventures. Contract report funded through the Canada/Nova Scotia Forest Resource Development Agreement.
- Meikle, O.A. 1988. Forest insects and diseases in National Fundy Park in 1987. Tech. Note 191.
- von Aderkas, P.; Bonga, J.M. 1988. Morphological definition of phenocritical period for initiation of haploid embryogenic tissue from explants of *Larix decidua*. In M.R. Ahuja, ed., Somatic Cell Genetics of Woody Plants. Martinus-Nijhoff, Dordrecht, The Netherlands.
- drecht, The Netherlands. West, R. 1988. Fill-planting and inter-planting in the Maritimes. Tech. Note 190.

Laurentian Forestry Centre Centre de foresterie des Laurentides

Information Reports / Rapports d'information

- Gonzalez, A.; D'Aoust, A.L. 1988. Observations et mesures concernant la culture de semis d'épinette noire en conteneurs. Rapp. d'inf. LAU-X-79.
- Gonzalez, A.; D'Aoust, A.L. 1988. Observations and measurements of containerized black spruce seedlings growing in a greenhouse. Inf. Rep. LAU-X-79E.
- Lethiecq, J.-L.; Régnière, J. 1988. Description des sites d'étude du SCF sur les populations de la TBE. Rapp. d'inf. LAU-X-83F.
- Lethiecq, J.-L.; Régnière, J. 1988. CFS spruce budworm population studies: Site descriptions. Inf. Rep. LAU-X-83.
- Roberge, M.R. 1988. Évolution d'une érablière à bouleau jaune soumise à différents traitements en 1966. Rapp. d'inf. LAU-X-82B.
- Roberge, M.R. 1988. Development of sugar mapleyellow birch stand following various treatments in 1966. Inf. Rep. LAU-X-82B.
- Roberge, M.R. 1988. Vingt ans d'aménagement par groupes d'une bétulaie à érables. Rapp. d'inf. LAU-X-81B.
- Roberge, M.R. 1988. Twenty years of group management in a yellow birch-sugar maple stand. Inf. Rep. LAU-X-81B.
- Zarnovican, R.; Ouellet, D.; Gendron, S. 1988. Computerized data acquisition of radial growth. Inf. Rep. LAU-X-80E.
- Zarnovican, R.; Ouellet, D.; Gendron, S. 1988. Saisie informatisée de la croissance radiale. Rapp. d'inf. LAU-X-80.

Journal Articles / Articles de revues scientifiques

- Beauce, E.; Hardy, Y. 1988. Effects of drainage and severe defoliation on the rawfiber content of balsam fir needles and growth of the spruce budworm (Lepidoptera: Tortricidae). Environ. Entomol. 17(4):671-674.
- Benoit, P.; Blais, R. 1988. The effects of defoliation by the larch casebearer on the radial growth of tamarack. For. Chron. 64(3):190-192.
- Bernier, P.Y. 1988. Low-cost wind speed measurements using naphthalene evaporation. J. Atmosph. Oceanic Tech. 5(5):662-665.
- Garceau, C.; Coderre, D.; Popovich, S. 1988. Impact du labour-hersage sur la communauté lombricienne, en plantation récente de feuillus. Can. J. Zool. 66(8):1777-1782.
- Labrecque, M.; Popovich, S. 1988. Use of polyethylene-covered greenhouses to improve the growth of *Quercus rubra* seedlings for reforestation. For. Chron. 64(5): 404-407.
- Laflamme, G. 1988. Description et distribution du chancre scléroderrien sur Picea mariana (Mill.)

B.S.P. Eur, J. For. Path. 18:230-239.

- Laflamme, G.; Blais, R. 1988. Vérification de la qualité des travaux de contrôle du chancre scléroderrien en plantation. For. Chron. 64:12-17.
- Lavallée, A. 1988. Réduction de la déformation des tiges de pin blanc attaquées par le charançon du pin blanc. Phytoprotection 69(3):131. (Résumé).
- pin blanc. Phytoprotection 69(3):131. (Résumé). Lavallée, R.; Hardy, Y. 1988. Étude en laboratoire du développement du *Choristoneura fumiferana* sur l'Abies balsamea, le Picea glauca et le Picea rubens. Phytoprotection 69: 79-86.
- Lavallée, R.; Morissette, J. 1988. Note sur la comparaison des captures d'adultes du Zeiraphera canadensis avec trois modèles de piège Multi-Pher[®]. Phytoprotection 69:87-89.
- Lavallée, R.; Régnière, J.; Morissette, J. 1988. L'influence de la température et des précipitations sur le vol des mâles du Zeiraphera canadensis en plantations d'épinettes blanches. Phytoprotection 69:99-103.
- Ouellet, D.; Zarnovican, R. 1988. Cultural treatment of young yellow birch (*Betula alleghaniensis* Britton) stands: tree classification and stand structure. Can. J. For. Res. 18:1581-1586.
- Perry, D. 1988. Germination of Erynia bullata resting spores. J. Invertebr. Pathol. 51:161-162 (Notes).
- Petrini, O.; Petrini, L.; Laflamme, G.; Ouellette, G.B. 1988. Précisions sur la taxonomie des genres Gremmeniella et Ascocalyx. Phytoprotection 69:132. (Résumé).
- Quednau, F.W.; Shaposhnikov, G. Ch. 1988. A list of drepanosiphine aphids from the Soviet Far East, with descriptions of new species (Homoptera: Aphidoidea). Can. Entomol. 120:1017-1032.
- Régnière, J.; Boulet, G.; Turgeon, J.J. 1988. Sequential sampling plan with two critical levels for spruce budmoth (Lepidoptera: Tortricidae). J. Econ. Entomol. 81: 220-224.
- Remaudière, G.; Quednau, F.W. 1988. Description de deux Pterasthenia nouveaux et révision des Pterastheniinae subfam. nov. (Homoptera: Aphididae). Ann. Soc. Entomol. Fr. 24:47-57.
- Remaudière, G.; Quednau, F.W.; Heie, O.E. 1988. Un nouveau *Tinocallis* sur *Ulmus*, originaire d'Asie centrale et semblable à *T. sultans* (Nevsky) (Homoptera: Aphididae). Can. Entomol. 120:211-219.
- Roberge, M.R. 1988. Effects of thinning, patch, clearcutting, site preparation, and planting on development of yellow birch in Québec. North. J. Appl. For. 5:248-251.
- Tousignant, S.; Coderre, D.; Popovich, S. 1988. Effet du labour-hersage sur la mésofaune du sol en plantation de feuillus. Pedobiologia 31:283-291.
- Ung, C.-H.; Végiard, S.; Ouellet, D. 1988. Variance asymptotique des estimateurs en régression non linéaire. Can. J. For. Res. 18:739-744.

- Ung, C.-H.; Végiard, S. 1988. Problèmes d'inférence statistique reliés à la transformation logarithmique en régression. Can. J. For. Res. 18:733-738.
- Zarnovican, R.; Ouellet, D. 1988. Inventaire forestier: utilisation d'un compas forestier électronique. Ann. Sci. For. 45(4):413-416.

Symposium Proceedings / Actes de symposiums

- Benhamou, N.; Ouellette, G.B. 1988. Ultrastructural and cytochemical characterization of Ascocalyx abietina. Pages 21-36 in E. Donaubauer, and B.R. Stephan, comp., Recent Research on Scleroderris Canker of Conifers. IUFRO Working Party S2.06-02, Canker Diseases-Scleroderris. Mitt. Forstl. Bundesversuchsanst, 162. Österreichischer Agrarverlag, Wien, Austria.
 Boutin, R.; Robitaille, G. 1988. Impact de la
- Boutin, R.; Robitaille, G. 1988. Impact de la fertilisation sur le lessivage des éléments nutritifs dans une érablière à tilleul de la plaine du St-Laurent. Page 210 in 56^e Congrès de l'ACFAS, Univ. de Moncton (N.-B.), 9-13 mai 1988. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 56. (Résumé).
- Corriveau, A.; Beaulieu, J.; Daoust, G. 1988. Phenotypic stability and productivity of central European Norway spruce populations in Quebec, Canada. IUFRO Working Party S2.02-11, Tjornarp, Sweden, September 4-10, 1988. 24 p. Girouard, R.M. 1988. Inoculation of container-
- Girouard, R.M. 1988. Inoculation of containergrown seedlings of three species of spruce with commercially produced inoculum of Laccaria bicolor. Pages 119-120 in M. Lalonde, and Y. Piché, eds., Canadian Workshop on Mycorrhizae in Forestry C.R.B.F., Université Laval, Sainte-Foy, Québec.
- Lachance, D.; Laflamme, G. 1988. Outbreak of Gremmeniella abietina, European race in the province of Quebec, Canada. Pages 53-58 in E. Donaubauer, and B.R. Stephan, comps., Recent Research on Scleroderris Canker of Conifers. IUFRO Working Party S2.06-02, Canker Diseases-Scleroderris. Mitt. Forstl. Bundesversuchsanst, 162. Österreichischer Agrarverlag, Wien, Austria.
- Laflamme, G. 1988. Description and symptoms of Gremmeniella abietina on Picea mariana. Pages 15-20 in E. Donaubauer, and B.R. Stephan, comps., Recent Research on Scleroderris Canker of Conifers. IUFRO Working Party S2.06-02, Canker Diseases-Scleroderris. Mitt. Forstl. Bundesversuchsanst, 162. Österreichischer Agrarverlag, Wien, Austria.
- Agrarverlag, Wien, Austria. Laflamme, G. 1988. Trial to control scleroderris canker in red pine plantations. Pages 151-156 in E. Donaubauer, and B.R. Stephan, comps., Recent Research on Scleroderris Canker of Conifers. IUFRO Working Party S2.06-02, Canker Diseases-Scleroderris. Mitt. Forstl. Bundesversuchsanst, 162. Österreichischer Agrarverlag, Wien, Austria.
- Ouellet, D. 1988. L'anastomose racinaire et la différenciation sociale du bouleau jaune (*Betula* alleghaniensis Britton). Page 214 in 56^{*} Congrès de l'ACFAS, Univ. de Moncton (N.-B.), 9-13 mai

1988. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 56. (Résumé).

- Ouellet, D. 1988. L'architecture des végétaux ligneux: une approche valable en sylviculture. Page 215 in 56" Congrès de l'ACFAS, Univ. de Moncton (N.-B.), 9-13 mai 1988. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 56. (Résumé).
- Ouellette, G.B.; Laflamme, G. 1988. Current research on scleroderris canker in North America. Page 362 in 5th Int. Congress Plant Pathology. Sec. X (4-10), Kyoto, Japan, August 14-27, 1988. (Abstract).
- Ouellette, G.B.; Benhamou, N.; Lecours, N.; Lachance, D. 1988. Investigations on new means of identifying races of Ascocalyx abietina. Pages 73-80 in E. Donaubauer, and B.R. Stephan, comps., Recent Research on Scleroderris Canker of Conifers. IUFRO Working Party S2.06-02, Canker Diseases-Scleroderris. Mitt. Forstl. Bundesversuchsanst, 162. Österreichischer Agrarverlag, Wien, Austria.
- Seuthé, C.; Beaubien, J.; Létourneau, J.P. 1988. Potentiel de l'imagerie SPOT comme outil de cartographie forestière au Québec. Pages 979-989 in Compte rendu du colloque international sur SPOT 1, utilisation des images, bilan, résultats, Paris, nov. 1987. CEPEDUES Editions, Toulouse (France).
- Ung, C.-H. 1988. Accroissement et qualité des tiges de deux jeunes futaies au Témiscouata. Page 216 in 56° Congrès de l'ACFAS, Univ. de Moncton (N.-B.), 9-13 mai 1988. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 56. (Résumé).
- Valéro, J. 1988. La lutte microbiologique contre les insectes nuisibles: Protection des plantes en agriculture et en foresterie. Pages 3-14 in Colloque sur la biotechnologie en biologie végétale. Biotechnologie et protection des végétaux: Un tandem de pointe dans une grande tradition de recherche. Univ. Laval, Sainte-Foy (Québec). Valéro, J.R.; Bellavance, M.; Langlois, D.S. 1988.
- Valéro, J.R.; Bellavance, M.; Langlois, D.S. 1988. Dispersions aériennes «expérimentales» de BT-Futura XLV à raison de 2,0 L/ha pour contrôler la tordeuse des bourgeons de l'épinette (TBE). Page 29 in 56* Congrès de l'ACFAS, Univ. de Moncton (N.-B.), 9-13 mai 1988. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 56. (Résumé).
- Zarnovican, R. 1988. Croissance en volume de quelques essences feuillus: Analyse des principales relations. Page 217 in 56^e Congrès de l'ACFAS, Univ. de Moncton (N.-B.), 9-13 mai 1988. Ann. ACFAS (Ass. can. fr. av. sci.) vol. 56. (Résumé).

- Bordeleau, C.; Guérin, D.; Innes, L.; Lachance, D.; Picher, R. 1988. Insectes et maladies des arbres, Québec, 1987. Forêt Conserv. 54(10), Suppl. 34 p.
- Laurentian Forest Research Centre 1960-1985. 1988. 32 p.
- Centre de foresterie des Laurentides 1960-1985. 1988. 35 p.
- Vézina, P.E.; Roberge, M.R. 1988. L'enseignement et la recherche en sylviculture. For.-Conserv. 54(9):28; 34.

Petawawa National Forestry Institute Institut forestier national de Petawawa

Information Reports / Rapports d'information

- Aldred, A.H.; Alemdag I.S. 1988. Guidelines for forest biomass inventory. Inf. Rep. PI-X-77.
- Aldred, A.H.; Alemdag I.S. 1988. Lignes directrices pour la prise d'inventaires de biomasse forestière. Rapp. d'inf. PI-X-77F.
- Brand, D.G.; Flannigan, M.D.; Janas, P.S. 1988. Using datalogger systems for environmental monitoring in forest research: an overview and case study. Inf. Rep. PI-X-81.
- Brand, D.G.; Flannigan, M.D.; Janas, P.S. 1988. Utilisation de systèmes d'enregistrement des données pour la surveillance environnementale en recherche forestière: Vue d'ensemble et étude de cas. Rapp. d'inf. PI-X-81F.
- Cheliak, W.M.; Yapa, A.C. 1988. Biotechnology in energy forestry: IEA symposium abstracts. Inf. Rep. PI-X-84.
- Cheliak, W.M.; Yapa, A.C. 1988. La biotechnologie et l'énergie forestière: Résumés des présentations au symposium de l'Agence internationale de l'énergie. Rapp. d'inf. PI-X-84F.
- Cheliak, W.M.; Yapa, A.C. 1988. Molecular genetics of forest trees. Inf. Rep. PI-X-80,
- Gillis, M. 1988. Gaps in Canada's forest inventory. Inf. Rep. PI-X-78.
- Gillis, M. 1988. Lacunes dans l'inventaire des forêts du Canada. Rapp. d'inf. PI-X-78F. Murray, W.G. 1988. The role of bird dog officers in
- aerial fire suppresion. Inf. Rep. PI-X-82
- Murray, W.G. 1988. Le rôle des aéropointeurs dans l'extinction aérienne des incendies. Rapp. d'inf. PI-X-82F.
- Newnham, R.M. 1988. A variable-form taper function. Inf. Rep. PI-X-83.
- Newnham, R.M. 1988. Mesure du défilement de la forme variable. Rapp. d'inf. PI-X-83F.
- Titus, S.J.; Morgan, D.J. 1988. Theory and methodology of single tree volume estimation. Inf. Rep. PI-X-85.
- Titus, S.J.; Morgan, D.J. 1988. Théorie et méthodes d'estimation du volume individuel des arbres. Rapp. d'inf. PI-X-85F.

Journal Articles / Articles de revues scientifiques

- Alemdag, I.S. 1988. A ratio for calculating stem volume to variable merchantable limits, and associated taper equations. For. Chron. 64(1):18-26.
- Alemdag, I.S. 1988. Site index equations for white spruce in the Northwest Territories, Canada. For. Ecol. Manage. 23:61-71.
- Bird, G.A.; Chatarpaul, L. 1988. Effect of forest harvest on decomposition and colonization of maple leaf litter by soil microarthropods. Can. J. Soil Sci. 68:29-40.

- Baskerville, G.; Moore, T. 1988. Forest information systems that really work. For. Chron. 64(2):136-140.
- Brand, D.G. 1988. A systematic approach to assess forest regeneration. For. Chron. 64(5):414-420. Brand, D.G.; Janas, P.S. 1988. Growth and acclima-
- tion of planted white pine and white spruce seedlings in response to environmental conditions. Can. J. For. Res. 18 (3):320-329.
- Brand, D.G.; Magnussen, S. 1988. Asymmetric, twosided competition in even-aged monocultures of red pine. Can. J. For. Res. 18(7):901-910.
- Chakravarty, P.; Chatarpaul, L. 1988. The effects of Velpar L (Hexazinone) on seedling growth and ectomycorrhizal symbiosis of Pinus resinosa. Can. J. For. Res. 18:917-921
- Cheliak, W.M.; Murray, G. Pitel, J.A. 1988. Genetic effects of phenotypic selection in white spruce. For. Ecol. Manage. 24:139-149.
- Cheliak, W.M.; Wang, J.; Pitel, J.A. 1988. Population structure and genic diversity in tamarack, Larix laricina (Du Roi) K. Koch. Can. J. For. Res. 18(10): 1318-1324.
- Flannigan, M.D.; Harrington, J.B. 1988. A study of the relation of meteorological variables to monthly provincial area burned by wildfire in Canada (1953-80). J. Appl. Meteor. 27(4):441-452.
- Gillis, M.D. 1988. Estimating change from successive static forest inventories. For. Chron. 64(4): 352-354.
- Hendrickson, O.Q. 1988. Biomass and nutrients in regenerating woody vegetation following wholetree and conventional harvest in a northern mixed
- forest. Can. J. For. Res. 18(11):1427-1436. Hendrickson, O.Q. 1988. Use of acetylene reduction for estimating nitrogen fixation in woody debris. Soil Sc. Soc. Am. J. 52(3):840-844.
- Janas, P.S.; Brand, D.G. 1988. Comparative growth and development of planted and natural stands of jack pine. For. Chron. 64(4):320-328.
- Leckie, D.G.; Ostaff, D.P. 1988. Classification of airborne multispectral scanner data for mapping current defoliation caused by the spruce budworm. For. Sc. 34(2) 259-275.
- Leckie, D.G.; Teillet, P.M.; Fedosejevs, G.; Ostaff, D.P. 1988. Reflectance characteristics of cumulative defoliation of balsam fir. Can. J. For. Res. 18(8):1008-1016.
- Leckie, D.G.; Teillet, P.M., Ostaff, D.P.; Fedosejevs, G. 1988. Sensor band selection for detecting current defoliation caused by the spruce budworm. Rem. Sens. Environ. 26:31-50.
- Magnussen, S. 1988. Minimum age-to-age correla-
- tion in early selections. For. Sci. 34(4):928-938. Magnussen, S.; Yeatman, C.W. 1988. Height growth and survival of within- and betweenprovenance crosses in jack pine. Can. J. For. Res. 18(9):1145-1151.

- Newnham, R.M. 1988. A modification of the Ek-Payandeh nonlinear regression model for site index curves. Can. J. For. Res. 18 (1):115-120.
- Périnet, P.; Vallée, G.; Tremblay, F.M. 1988. In vitro propagation of mature trees of Alnus incana (L.) Mœnch. Plant Cell Tissue Organ Cult. 15:85-89.
- Pitel, J.A.; Cheliak, W.M. 1988. Metabolism of enzymes with imbibition and germination of seeds of jack pine (Pinus banksiana). Can. J. Bot. 66(3):542-547.
- Pitel, J.A.; Wang, B.S.P. 1988. Improving germination of basswood (Tilia americana L.) seeds with gibberellic acid. Seed Sci. Technol. 16:273-280.
- Power, J.M. 1988. Decision support systems for the forest insect and disease survey and for pest management. For. Chron. 64(2):132-135.
- Stiell, W.M. 1988. Consistency of cone production in
- individual red pine. For. Chron. 64(6):480-485. Van Wagner, C.E. 1988. Effect of slope on fires spreading downhill. Can. J. For. Res. 18(6):818-820
- Van Wagner, C.E. 1988. The historical pattern of annual burned area in Canada. For, Chron. 64(3):182-185.
- Wang, B.S.P. 1988. Review of new developments in tree seeds. Seed Sci. Technol. 16:215-225.

Symposium Proceedings / Actes de symposiums

Boyle, T.J.B. 1988. Proceedings of the twenty-first meeting of the Canadian Tree Improvement Association: Part 1 .: Minutes and members' reports. Held in Truro, N.S., August 17-21, 1987. 161 p.

- Boyle, T.J.B. 1988. Comptes rendus de la vingt et unième conférence de l'Association canadienne pour l'amélioration des arbres: 1^{re} partie: Procès-verbaux et rapports des membres. Truro (N.-É.), du 17 au 21 août 1987. 161 p. Klimaszewska, K.; Cheliak, W.M. 1988. Selection
- for glyphosate-tolerant cell cultures in poplar. Pages 17-23 in Ferm, A., ed., Proc. IEA Task II Meet. Cell Culture and Coppicing. Bull. Finn. Res. Inst. Kannus.
- Larocque, G.; Marshall, P.L. 1988. Improving single-tree distance-dependent growth models. Pages 94-101 in Ek, A.R. et al., eds., Proc. IUFRO Conf., Minneapolis, MN. USDA Forest Serv. Gen. Tech. Rep. NC-120.
- Morgenstern, E.K.; Boyle, T.J.B. 1988. Proceedings of the twenty-first meeting of the Canadian Tree Improvement Association: Part 2 .: Symposium on tree improvement—Progressing together. Held in Truro, N.S., August 17-21, 1987. 213 p. Morgenstern, E.K.; Boyle, T.J.B. 1988. Comptes
- rendus de la vingt et unième conférence de l'Association canadienne pour l'amélioration des arbres: 2" partie: Colloque sur l'amélioration des arbres — Un effort collectif. Truro (N.-É.), du 17 au 21 août 1987. 213 p.

Other Publications / Autres publications

Recent achievements at Petawawa.

- Réalisations récentes à l'INFP
- Weber, M.G. 1988. Fire and ecosystem dynamics in eastern Canadian Pinus banksiana forests. Pages 93-105 in Verhoeven, J.T.A., et al., eds., Vegetation Structure in Relation to Carbon and Nutrient Economy. SPB Academic Publishing. The Hague, The Netherlands.

Forest Pest Management Institute Institut pour la répression des ravageurs forestiers

Information Reports / Rapports d'information

- Feng, J.; Feng, C. 1988. Determination of hexazinone residues and their fate in a New Brunswick forest. Inf. Rep. FPM-X-81.
- forest. Inf. Rep. FPM-X-81. Feng, J.; Feng, C. 1988. Détermination des résidus d'hexazinone et de son devenir dans une forêt du Nouveau-Brunswick. Rapp. d'inf. FPM-X-81F.
- Nouveau-Brunswick. Rapp. d'inf. FPM-X-81F. Kaupp, W.J.; Cunningham, J.C.; Meating, J.H.; Howse, G.M.; Denys, A. 1988. Aerial spray trials with Disparvirus in Ontario in 1986. Inf. Rep. FPM-X-82.
- Kaupp, W.J.; Cunningham, J.C.; Meating, J.H.; Howse, G.M.; Denys, A. 1988. Pulvérisations aériennes expérimentales au Disparvirus en Ontario en 1986. Rapp. d'inf. FPM-X-82F.
- Millikin, R.L. 1988. A comparison of spot, transect and plot methods for measuring the impact of forest pest control strategies on forest songbirds. Inf. Rep. FPM-X-83.
- Millikin, R.L. 1988. Comparaison des méthodes par points, par transect et par placette pour mesurer l'impact des stratégies de lutte contre les insectes ravageurs des forêts sur les oiseaux chanteurs des forêts. Rapp. d'inf. FPM-X-83F.

Journal Articles / Articles de revues scientifiques

- Cunningham, J.D. 1988. Baculoviruses: their status compared to *Bacillus thuringiensis* as microbial insecticides. Outlook on Agriculture 17.
- Payne, N.J.; Helson, B.V.; Sundaram, K.M.S.; Fleming, R.A. 1988. Estimating buffer zone widths for pesticide applications. Pestic. Sci. 24:147-161.
- Sparks, B.D.; Sundaram, A.; Kotlyar, L.; Leung, J.W.; Curry, R.D. 1988. Physicochemical properties, atomization and deposition patterns of

some newtonian spray mixtures of glyphosate containing two spray modifier adjuvants. J. Environ. Sci. Health B23:235-266. Retnakaran, A.; Raske, A.G; West, R.J.; Lim, K.P.; Sundaram, A. 1988. Evaluation of Diflubenzuron

- Retnakaran, A.; Raske, A.G; West, R.J.; Lim, K.P.; Sundaram, A. 1988. Evaluation of Diflubenzuron as a control agent for hemlock looper (Lepidoptera: Geometridae). J. Econ. Entomol. 81:1698-1705.
- Sundaram, A.; West, R.J.; Raske, A.G.; Retnakaran, A. 1988. Spray atomization and deposition patterns of one newtonian and two pseudoplastic formulations after aerial application over a mature conifer forest in Newfoundland. J. Environ. Sci. Health B23:85-99.
- Sundaram, K.M.S. 1988. High performance liquid chromatographic determination of three tracer dyes used in forestry spray formulations. J. Environ. Sci. Health B23:53-68.
- Turgeon, J.J.; Grant, G.G. 1988. Response of Zeiraphera canadensis (Lepidoptera: Tortricidae: Olethreutina) to candidate sex attractants and factors affecting trap catches. Environ. Entomol. 17:442-447.
- Tyrrell, D. 1988. Survival of Entomophaga aulicae in dried insect larvae. J. Invert. Pathol. 52:187-188.

- Forest Pest Management Institute Newsletter. Anniversary Edition. February 1988. 18 p.
- Forest Pest Management Institute Newsletter. 1988. 7:2. 9 p.
- Bulletin de l'Institut pour la répression des ravageurs forestiers 1988. 7:2. 9 p.
- Bulletin de l'Institut pour la répression des ravageurs forestiers. 1988. Édition anniversaire. 23 p.

Great Lakes Forestry Centre Centre de foresterie des Grands Lacs

Information Reports / Rapports d'information

- Payandeh, B. 1988. Preliminary yield functions and tables for spruce-fir stands of northwestern Ontario. Inf. Rep. O-X-389.Scarratt, J.B.; Wood, J.E. 1988. Nine-year results of
- Scarratt, J.B.; Wood, J.E. 1988. Nine-year results of a black spruce and white spruce paperpot planting trial in boreal Ontario. Inf. Rep. O-X-391.
- Smith, C.R.; Oerlemans, W.J.A.M. 1988. Ten-year growth response and financial evaluation of commercial strip thinning of jack pine: A case study. Inf. Rep. O-X-396.
- Sutherland, B.J. 1988. Evaluation of the Tetra multifunctional semi-automatic tree planter on two sites in Quebec. Inf. Rep. O-X-394.Syme, P.D.; Nystrom, K.L. 1988. Insects and mites
- Syme, P.D.; Nystrom, K.L. 1988. Insects and mites associated with Ontario forests: classification, common names, main hosts, and importance. Inf. Rep. O-X-392.
- Wood, J.E.; Sutton, R.F.; Weldon, T.P.; Rissanen, H. 1988. Jack pine establishment: effect of stock type, Bräcke scarification, mounding, and chemical site preparation. Inf. Rep. O-X-393.
- von Althen, F.W.; Nolan, J.D. 1988. Performance of black walnut-white pine plantations in southwestern Ontario. Joint Rep. 13.

Journal Articles / Articles de revues scientifiques

- Foster, N.W.; Nicholson, J.A. 1988. Acid deposition and nutrient leaching from deciduous vegetation and podzolic soils at the Turkey Lakes Watershed. Can. J. Fish. Aquat. Sc. 45(Suppl. 1):96-100
- Can. J. Fish. Aquat. Sc. 45(Suppl. 1):96-100. Haavisto, V.F.; Fleming, R.L.; Skeates, D.A. 1988. Potential and actual yields of seed from black spruce cones. For. Chron. 64(1):32-34.
- Hogan, G.D.; Morrison, I.K. 1988. Distribution of trace metals within the aboveground phytomass of Acer saccharum Marsh. and Betula alleghaniensis Britt. at the Turkey Lakes Watershed. Can. J. Fish. Aquat. Sc. 45(Suppl. 1):101-106.
- Fish. Aquat. Sc. 45(Suppl. 1):101-106.
 Johnson, J.D.; Smyth, J.H.; 1988. Alternate strip clearcutting in upland black spruce. VI. Harvesting and renewal costs of stripcutting relative to those of clearcuting. For. Chron. 64(1):59-63.
 Lysyk, T.J.; Nealis, V.G. 1988. Temperature re-
- Lysyk, T.J.; Nealis, V.G. 1988. Temperature requirements for development of the jack pine budworm (Lepidoptera: Tortricidae) and two of its parasitoids (Hymenoptera). J. Econ. Entomol. 81(4):1045-1051.
- Morrow, L.D. 1988. Alternate strip clearcutting in upland black spruce. VII. Planning and implementation. For. Chron. 64(1):64-69.
- Nealis, V.G.; Fraser, S. 1988. Rate of development, reproduction, and mass-rearing of Apanteles fumiferanae Vier. (Hymenoptera: Braconidae) under controlled conditions. Can. Entomol. 120:197-204.

- Nicolson, J.A. 1988. Alternate strip clearcutting in upland black spruce. V. The impact of harvesting on the quality of water flowing from small basins in shallow-soil boreal ecosystems. For. Chron. 64(1):52-58.
- Payandeh, B. 1988. An assessment of the structural method of deriving a black spruce site equation: Discussion. Can. J. For. Res. 18:1351.
- Payandeh, B.; Wood, J.E. 1988. Identifying factors affecting plantation performance in boreal forests of Ontario. New Forests 2:73-87.
 Richards, W.C.; Takai, S. 1988. Production of
- Richards, W.C.; Takai, S. 1988. Production of cerato-ulmin in white elm following artificial inoculation with *Ceratocystis ulmi*. Physiol. Molec. Plant Pathol. 33:279-285.
- Sanders, C.J. 1988. Monitoring spruce budworm population density with sex pheromone traps. Can. Entomol. 120:175-183.
- Sims, R.A.; Towill, W.D. 1988. Alternate strip clearcutting in upland black spruce. VIII. Shallow-soil ecosystems and their classification. For. Chron. 64(1): 70-75.
- Stocks, B.J. 1988. Forest fire close to home: Terrace Bay fire no. 7/86. In W.C. Fischer and S.F. Arno, comps., Proc. Symp. Protecting people and homes from wildfire in the interior West. USDA For. Serv., Intermountain Research Stn., Gen. Tech. Rep. No. 251. 213 p.
- Von Ålthen, F.W. 1988. Effects of spatial arrangement in mixed-species hardwood plantations. North J. Appl. For. 5(3):203-207.
 Whitney, R.D. 1988. Armillaria root rot damage in
- Whitney, R.D. 1988. Armillaria root rot damage in softwood plantations in Ontario. For. Chron. 64(4): 345-351.
- Wood, J.E.; Dominy, S.W.J. 1988. Mechanical site preparation and early chemical tending in white spruce: 19-year results. For. Chron. 64(3):177-181.

Symposium Proceedings / Actes de symposiums

von Althen, F.W. 1988. Hardwood plantation establishment on former farmland in southern Ontario. Paper presented at the seminar on reforestation methods after harvesting, May 9-13, 1988, Eberswalde, German Democratic Republic.

- Anon. 1988. Technical papers presented at the fourteenth session of the North American Forestry Commission, Sault Ste. Marie, Ont., Oct. 13-17, 1987. Joint Rep. 12.
- Applejohn, M.J.; Howse, G.M. 1988. Forest Insect and disease conditions in Ontario; Spring 1988. Survey Bulletin. 11 p.

- Biggs, W.D.; Sajan, R.J.; Brodersen, H. 1988. Results of forest insect and disease surveys in the central region of Ontario, 1987. Misc. Rep. 75.
- Brodersen, H.; Biggs, W.D. 1988. Results of forest insect and disease surveys in the southwestern region of Ontario, 1987. Misc. Rep. 80.
- Colombo, S.J.; Wood, J.E. 1988. Containerized tree seedling research and development in Ontario:
- 1984-1985. Joint Rep. 11. Constable, D.C.; Ingram, W.A.; MacLeod, L.S.; Melbourne, S. 1988. Results of forest insect and disease surveys in the northeastern region of Ontario, 1987. Misc. Rep. 76.
- Evans, H.J.; Melbourne, S. 1988. Results of forest insect and disease surveys in the north central region of Ontario, 1987. Misc. Rep. 79.
- Forest insect and disease conditions in Ontario. Summer 1988. 37 p.
- Forestry Newsletter. Spring 1988. 11 p. Jones, C.G.; Czerwinski, E.J. 1988. Results of forest insect and disease surveys in the northwestern region of Ontario, 1987. Misc. Rep. 77.
- Keizer, A. 1988. Results of forest insect and disease surveys in the eastern region of Ontario, 1987. Misc. Rep. 81.

- MacLeod, L.S.; Jansons, V.; Payne, S. 1988. Results of forest insect and disease surveys in the northern region of Ontario, 1987. Misc. Rep. 78.
- Sajan, R.J.; Smith, B.E. 1988. Results of forest insect and disease surveys in the Algonquin region of Ontario, 1987. Misc. Rep. 74.
- Thomson, M.J.; Constable, D.C.; Jones, C.G.; MacLeod, L.S. 1988. A review of important forest insect and disease problems in the Fort Frances District of Ontario, 1950-1980. Misc. Rep. 66.
- Weir, H.J.; Thomson, M.J.; Constable, D.C.; Jones, C.G. 1988. A review of important forest insect and disease problems in the Gogama district of Ontario, 1950-1980. Misc. Rep. 57.
- Weir, H.J.; Thomson, M.J.; Constable, D.C.; Jones, C.G. 1988. A review of important forest insect and disease problems in the Timmins District of
- Ontario, 1950-1980. Misc. Rep. 59. Whitney, R.D. 1988. The hidden enemy; Root rot technology transfer. For practical use in the field: A forester's guide to identification and reduction of major root rots in Ontario.
- Whitney, R.D. 1988. L'ennemi caché. Transfert de technologie concernant les pourridiés. Pour usage sur le terrain: Guide du forestier servant à identifier et à enrayer les principaux pourridiés en Ontario.

Northern Forestry Centre Centre de foresterie du Nord

Information Reports / Rapports d'information

- Chrosciewicz, Z. 1988. Forest regeneration on burned, planted, and seeded clear-cuts in central Saskatchewan. Inf. Rep. NOR-X-293.
- Hiratsuka, Y.; Powell, J.M.; Van Sickle, G.A. 1988. Impact of pine stem rusts of hard pines in Alberta and the Northwest Territories. Inf. Rep. NOR-X-299.
- Ives, W.G.H.; Wong, H.R. 1988. Tree and shrub insects of the prairie provinces. Inf. Rep. NOR-X-292.
- Samoil, J.K. 1988. Management and utilization of northern mixedwoods. Proceedings of a symposium held April 11-14, 1988 in Edmonton, Alberta. Inf. Rep. NOR-X-296.
- Samoil, J.K.; Turtle, G.B. 1988. Northern Forestry Centre publications, 1980-86. Inf. Rep. NOR-X-297.
- Singh, T. 1988. Current applied climatological research in Alberta. Inf. Rep. NOR-X-294.
- Steele, T.W.; Boylen, D.M.; Baumgartner, A. 1988. Saskatchewan's forest industry, 1985. Inf. Rep. NOR-X-295.

Journal Articles / Articles de revues scientifiques

- Ali, M.W.; Zoltai, S.C.; Radford, F.G. 1988. A comparison of dry and wet ashing methods for the elemental analysis of peat. Can. J. Soil Sci. 68:443-447.
- Allen, E.A.; Blennis, P.V. 1988. Axenic culture of Endocronartium harknessii. Mycologia 80(1):120-123.
- Apps, M.J.; Duke, M.J.M.; Stephens-Newsham, L.G. 1988. A study of radionuclides in vegetation on abandoned uranium tailings. J. Radioanal. Nucl. Chem. 123(1):133-147.
- Bella, I.E.; Navratil, S. 1988. Western-gall rust dynamics and impact in young lodgepole pine stands in west-central Alberta. Can. J. For. Res. 18:1437-1442.
- Bernier, P.Y. 1988. Low-cost wind speed measurements using naphthalene evaporation. J. Atmos. Oceanic Technol. 5(5):663-665.
- Chrosciewicz, Z. 1988. Jack pine regeneration following postcut burning under seed trees in central Saskatchewan. For. Chron. 64(4):315-319.
- Corns, I.G.W. 1988. Compaction by forestry equipment and effects on coniferous seedling growth on four soils in the Alberta foothills. Can. J. For. Res. 18:75-84.
- Feng, J.C.; Stornes, V.; Rogers, R. 1988. Release of haxazinone from PRONONE 10G granules exposed to simulated rainfall under laboratory conditions. J. Environ. Sci. Health B23(3):267-

278.

- Heit, M.J.; Bohning, R.A. 1988. Secondary forest products industry in Alberta, 1986. For. Chron. 64:461-463.
- Hillman, G.R.; Verschuren, J.P. 1988. Simulation of the effects of forest cover, and its removal, on subsurface water. Water Resour. Res. 24:305-314.
- Hiratsuka, Y. 1988. Ontogeny and morphology of teliospores (probasidia) in Uredinales and their significance in taxonomy and phylogeny. Mycotaxon 31(2):517-531.
- Kennedy, K.A.; Addison, P.A.; Maynard, D.G. 1988. Effect of elemental sulphur on the vegetation of a lodgepole pine stand. Environ. Pollut. 51:121-130.
- lodgepole pine stand. Environ. Pollut. 51:121-130. Mallett, K.I.; Hiratsuka, Y. 1988. Inoculation studies of lodgepole pine with Alberta isolates of the Armillaria mellea complex. Can. J. For. Res. 18(3):292-296.
- Spencer, R.D.; Hall, R.J. 1988. Canadian large-scale aerial photographic systems (LSP). Photogramm. Eng. Remote Sensing 54(4):475-482.
- Swanson, R.H. 1988. The Alberta Watershed Research Program — a model to emulate or to avoid? Natl. Res. Counc. Can., Assoc. Comm. Hydrol. Hydrol. Events 13(2):6-8.
- Swanson, R.H. 1988. Measurement of transportation — a hydrological and physiological process. Natl. Res. Counc. Can., Assoc. Comm. Hydrol. Hydrol, Events 13(2):9-10.
 Swanson, R.H. 1988. WRENSS — a model-based
- Swanson, R.H. 1988. WRENSS a model-based procedure for estimating the annual evapotranspiration from forested and partially forested catchments. Natl. Res. Counc. Can., Assoc. Comm. Hydrol. Hydrol, Events 13(2):8-9.
- Volney, W.J.A. 1988. Analysis of historic jack pine budworm outbreaks in the prairie provinces of Canada. Can. J. For. Res. 18:1152-1158.
- Yang, R.C.; Wang, E.I.C.; Micko, M.M. 1988. Effects of fertilization on wood density and trancheid length of 70-year-old lodgepole pine in westcentral Alberta. Can. J. For. Res. 18:954-956.
- Zakrzewski, W.T.; Bella, I.E. 1988. Two new height models for volume estimation of lodgepole pine stands. Can. J. For. Res. 18(2):195-201.
 Zoltai, S.C. 1988. Distribution of base metals in peat
- Zoltai, S.C. 1988. Distribution of base metals in peat near a smelter at Flin Flon, Manitoba. Water Air Soil Pollut. 37:217-228.

Symposium Proceedings / Actes de symposiums

Alexander, M.E. 1988. Help with making crown fire hazard assessments. Pages 147-156 in W.C. Fischer and S.F. Arno, comps., Protecting People and Homes from Wildfire in the Interior West: Proc. Symp. and Workshop. U.S. Dep. Agric., For. Serv., Intermt. Res. Stn., Ogden, UT. Gen. Tech. Rep. INT-251.

- Brace, L.G.; Bella, I.E. 1988. Understanding the understory: dilemma and opportunity. Pages 69-86 in J.K. Samoil, ed., Management and Utilization of Northern Mixedwoods. Proc. Symp., Edmonton, Alb., Apr. 11-14, 1988. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-296.
- Corns, I.G.W. 1988. Site classification and productivity in the boreal mixedwood. Pages 61-69 in J.K. Samoil, ed., Management and Utilization of Northern Mixedwoods. Proc. Symp., Edmonton, Alb., Apr. 11-14, 1988. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-296.
 De Groot, W.J. 1988. Application of fire danger rating to the wildland/urban fire problem: a case
- De Groot, W.J. 1988. Application of fire danger rating to the wildland/urban fire problem: a case study of the Nisbet Provincial Forest, Saskatchewan. Pages 166-170 in W.C. Fischer and S.F. Arno, comps., Protecting People and Homes from Wildfire in the Interior West: Proc. Symp. and Workshop, U.S. Dep. Agric., For. Serv., Intermt. Res. Stn., Ogden, UT. Gen. Tech. Rep. INT-251.
- Windhife in the Internot West, Froc. Symp. and Workshop, U.S. Dep. Agric., For. Serv., Intermt. Res. Stn., Ogden, UT. Gen. Tech. Rep. INT-251.
 Hillman, G.R. 1988. Improving wetlands for forestry in Alberta. Pages 241-247 in Proc. Wetlands/Peatlands Symp. '87, Edmonton, Alb., Aug. 23-27, 1987. Environ. Can., Can. Comm. Ecol. Land Classif., Ottawa.
- Hillman, G.R. 1988. Preliminary effects of forest drainage in Alberta, Canada, on groundwater table levels and stream water quality. Pages 190-196 in Proc. Int. Symp. Hydrol. Wetlands Temp. Cold Reg., Joensuu, Finland, June 6-8, 1988. Vol. 1. Academy of Finland, Helsinki, Finland.
- Kiil, A.D. 1988. Closing remarks. Pages 147 in J.K. Samoil, ed., Management and Utilization of Northern Mixedwoods. Proc. Symp., Edmonton, Alb., Apr. 11-14, 1988. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-296.
- Kill, A.D. 1988. Introductory comments and welcome. Pages 1-2 in J.K. Samoil, ed., Management and Utilization of Northern Mixedwoods. Proc. Symp., Edmonton, Alb., Apr. 11-14, 1988. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-296.
- Kimmins, J.P.; Scoullar, K.A.; Comeau, P.G.; Kurz, W.A.; Apps, M.J.; Chatarpaul, L. 1988.
 FORCYTE-II: an example of the hybrid simulation approach to predicting the consequences for production, yield, economics, soil fertility, nutrient and organic matter reserves, and energy efficiency of alternative crop production systems. Pages 305-314 in A.R. Ek, S.R. Shifley, and I.E. Burk, eds., Forest Growth Modelling and Prediction. Vol. 1. Proc. Inc. Union For. Res. Organ. Conf., Minneapolis, MN, Aug. 23-27, 1987. U.S. Dep. Agric. For. Serv., North Cent. For. Exp. Stn., St. Paul, MN. Gen. Tech. Rep. NC-120.
- Klein, J.I. 1988. Selection and mating strategies in second generation breeding populations of conifer tree improvement programs. Pages 170-180 in E.K. Morgenstern and T.J.B. Boyle, eds., Tree Improvement — Progressing Together. Proc. 21st Meet. Can. Tree Improve. Assoc., Aug. 17-21, 1987, Truro, N.S. Can. For. Serv., Petawawa Natl. For. Inst., Chalk River, Ont.

- Navratil, S. 1988. The state of the art in mycorrhiza research in Alberta and Saskatchewan. Pages 15-23 in M. Lalonde and Y. Piché, eds., Proceedings of the Canadian Workshop on Mycorrhizae in Forestry. Laval University, Faculty of Forestry and Geodesy, Ste-Foy, Quebec. Ondro, W.J.; Bella, I.E. 1988. Market potential for
- Ondro, W.J.; Bella, I.E. 1988. Market potential for Alberta's poplar products. Pages 51-60 in B. Barkley and A. Drew, comps, Poplar Culture to the Year 2000. Proc. Poplar Counc. U.S. Can. Joint Meet., New York and Ontario, June 22-24, 1987. Ontario Minist. Nat. Resour., Toronto, Ont., and Suny Coll. Environ. Sci. For., Syracuse, NY.
- and Suny Coll. Environ. Sci. For., Syracuse, NY. Prasad, R.; Feng, J.C. 1988. Red pine release and residue persistence after hexazinone spotgun treatment in northern Ontario. Pages 107-115 in K.M.S. Sundaram, comp., Proc. XXth Annu. East. Can. Workshop Pestic. Residues Environ. Contam., Sault Ste. Marie, Ont., May 31 to June 3, 1988. Can. For. Serv., For. Pest Manage. Inst., Sault Ste. Marie, Ont.
- Singh, T.; Higginbotham, K.O. 1988. An overview of the effects of climatic change and climatic variability on forest vegetation in western Canada. Pages 255-273 in B.L. Magill and F. Geddes, eds., The Impact of Climate Variability and Change on the Canadian Prairies: Symposium/Workshop Proceedings, Sept. 9-11, 1987. Alberta Environ., Edmonton, Alb.
- Volney, W.J.A. 1988. Insects and diseases of the mixedwood forest: problems or opportunities? Pages 99-109 in J.K. Samoil, ed., Management and Utilization of Northern Mixedwoods. Proc. Symp., Edmonton, Alb., Apr. 11-14, 1988. Can. For. Serv., North. For. Cent., Edmonton, Alb. Inf. Rep. NOR-X-296.

- Alexander, M.E.; De Groot, W.J. 1988. Fire behavior in jack pine stands as related to the Canadian Forest Fire Weather Index (FWI) System. Poster (with text).
- Ascher, A. 1988. Timberlines. No. 5. Winter 1987-88. No. 6, Spring 1988. No. 7, Summer 1988. No. 8, Autumn 1988. Can. For. Serv., North. For. Cent., Edmonton, Alb.
- Delisle, G.P.; Woodard, P.M. 1988. Constants for calculating fuel loads in Alberta. Can. For. Serv., North. For. Cent., Edmonton, Alb. For. Manage. Note 45.
- Hirsch, K.G. 1988. Examples of Canadian forest fire behavior prediction system fuel types in Man. Can. For. Serv., Manitoba Dist. Off., Winnipeg, Manitoba. Poster with text.
- Hirsch, K.G. 1988. An overview of the 1987 Wallace Lake Fire, Manitoba. Fire Manage. Notes 49(2):26-27.
- Northern Forestry Centre. 1988. Program Review 1987-88. Can. For. Serv., North. For. Cent., Edmonton, Alb.
- Singh, T. 1988. Potential impacts of climatic change on forestry. Environ. Can., Can. Comm. Ecol. Land Classif., Ottawa. 17:4-5.

Publications 1988

- Schunke, E.; Zoltai, S.C. 1988. Earth hummocks (thufur). Pages 231-245 in M.J. Clark, ed., Advan-ces in Periglacial Morphology. John Wiley &
- Sons, Chichester, England. Tarnocai, C.; Zoltai, S.C. 1988. Wetlands of arctic Canada. Pages 29-53 in Wetlands of Canada. Polyscience Publication Inc., Montreal. Timber. No. 5, Winter 1987-88. 8 p. Zoltai, S.C. 1988. Ecoclimatic provinces of Canada
- and man-induced climatic change. Environ. Can., Can. Comm. Ecol. Land Classif., Ottawa. Newl. 17:12-15.
- Zoltai, S.C. 1988. Wetland environments and clas-Zoltai, S.C. 1988. Wetland environments and classification. Pages 1-26 in Wetlands of Canada. Polyscience Publication Inc., Montreal.
 Zoltai, S.C.; Tarnocai, C.; Mills, G.F.; Veldhuis, H. 1988. Wetlands of subarctic Canada. Pages 55-96
- in Wetlands of Canada. Polyscience Publication
- Inc., Montreal.
 Zoltai, S.C.; Taylor, S.; Jeglum, J.K.; Mills, G.F.;
 Johnson, J.D. 1988. Wetlands of boreal Canada.
 Pages 97-154 in Wetlands of Canada. Polyscience Publication Inc., Montreal.

Pacific Forestry Centre Centre de foresterie du Pacifique

Information Reports / Rapports d'information

- Appleby, P.W. 1988. Hog fuel availability in the south coastal region of British Columbia: 1985. Inf. Rep. BC-X-297.
- Edwards, D.G.W. 1988. Forest tree seed certification in Canada under the OECD scheme and ISTA rules: 1981–1985 summary report. Inf. Rep. BC-X-299. 16 p.
- Hiratsuka, Y., Powell, J.M.; Van Sickle, G.A. 1988. Impact of pine stem rusts of hard pines in Alberta and the Northwest Territories. Inf. Rep. NOR-X-299. 9 p.
- Linton, D.A.; Safranyik, L. 1988. The spruce beetle, Dendroctonus rufipennis (Kirby): An annotated bibliography 1885 – 1987. Inf. Rep. BC-X-298.
- McDaniels, T.L. 1988. An evaluation framework for forestry R&D: an application to the ENFOR program. Inf. Rep. BC-X-304. 54 p.
- Morrison, D.J.; Wallis, G.W.; Weir, L.C. 1988. Control of Armillaria and Phellinus root diseases: 20 year results from the Skimikin stump removal experiment. Inf. Rep. BC-X-302.
- Reports and publications 1987. 1988. Inf. Rep. BC-X-300.
- Schuerholz, G.; McNamee, P.; Massie, M.R.C. 1988. Estimation of the effect of intensive logging on ungulates (cervids) in the White River drainage. Inf. Rep. BC-X-303.
- Standish, J.T.; Commandeur, P.R.; Smith, R.B. 1988. Impacts of forest harvesting on physical properties of soils with reference to increased biomass recovery — A review. Inf. Rep. BC-X-301.

Journal Articles / Articles de revues scientifiques

- Alfaro, R.I. 1988. Laboratory feeding and colonization of non-host lodgepole pine by two populations of *Pissodes strobi* (Peck) (Coleoptera: Curculionidae). Can. Entomol. 120:167-173.
- Alfaro, R.I. 1988. Pest damage in forestry and its assessment. North West Environ. J. 4:279-300.
- Alfaro, R.I.; MacDonald, R.N. 1988. Effects of defoliation by the western false hemlock looper on Douglas-fir tree ring chronologies. Tree Ring Bull. 48:3-11.
- Alfaro, R.I.; Wegwitz, E. 1988. Western spruce budworm damage to sprayed and unsprayed young Douglas-fir. Western J. Appl. For. 3:44-46.
- Arnott, J.T.; Burdett, A.N. 1988. Early growth of planted western hemlock in relation to stock type and controlled-release fertilizer application. Can. J. For. Res. 18(6):710-717.
- Arnott, J.T.; Carr, W.W.; Waines, A.C. 1988. Establishing forest cover on winter landings in the Central Interior of British Columbia. For.

Chron. 64(2):121-126.

- Barclay, H.J.; Fitz-Earle, M.E. 1988. Maximum likelihood estimates of fitness in itoraparous species population replacement experiments using compound chromosomes. Genome 30:83-88.
- Barclay, H.J. 1988. Models for combining methods of pest control: food-baited and pheromone-baited traps containing either insecticide or chemosterilant. Bull. Entomol. Res. 78:573-590.
- sterilant. Bull. Entomol. Res. 78:573-590. Bartram, C.; Miller, G.E. 1988. Estimation of seed orchard efficiencies by multistage variable probability sampling. Can. J. For. Res. 18:1397-1404.
- Bloomberg, W.J. 1988. Computers in forest disease research, application and technology transfer. Can. J. Plant Pathol. 9:334-342.
- Bloomberg, W.J. 1988. Modelling applied to the analysis of crop-pest-management interactions. Mem. Entomol. Soc. Can. 143:29-37.
- Mem. Entomol. Soc. Can. 143:29-37.
 Bloomberg, W.J. 1988. Modeling control strategies for laminated root rot in managed Douglas-fir stands: Model development. Phytopathology 78: 403-409.
- Bloomberg, W.J.; Brix, H. 1988. Effect of root injury and auxin treatments on adventitious root development in second-growth Douglas-fir. Can. J. For. Res. 18:957-961.
- Bloomberg, W.J.; Reynolds, G. 1988. Equipment trials for uprooting root-rot-infected stumps. West. J. Appl. For. 3:80-82.
- Bose, R.; Edramoddoullah, A.K.M.; Kisil, F.T.; Sehon, A.H. 1988. Human and murine antibodies to rye grass pollen allergen *Lolp* IV share a common idiotope. Immunology 63:579-584. Edwards, D.G.W.; El-Kassaby, Y.A. 1988. Effect of
- Edwards, D.G.W.; El-Kassaby, Y.A. 1988. Effect of flowering phenology, date of cone collection, conestorage treatment and seed pretreatment on yield and germination of seeds from a Douglas-fir seed orchard. J. For. Ecol. and Manage. 25:17-29.
- and germination of seeds from a Doughts in seed orchard. J. For. Ecol. and Manage. 25:17-29.
 Edwards, D.G.W.; Pollard, D.F.W.; Wang, B.S.P. 1988. Guidelines for grading and labeling forest tree seeds in Canada. For. Chron. 64:334-344.
 Funk, A.; Dorworth, C.E. 1988. Mycosphaerella
- Funk, A.; Dorworth, C.E. 1988. Mycosphaerella mycopappi sp. nov. and its anamorphs on leaves of Acer macrophyllum. Can. J. Bot. 66:295-297.
- Funk, A.; Finck, K.E. 1988. Sydowia semenospora sp. nov. and its anamorph on amabilis fir. Can. J. Bot. 66:2128-2129.
- Hulme, M.A. 1988. The recent Canadian record in applied biological control of forest insect pests. For. Chron. 64:27-31.
- Hulme, M.A. 1988. Viscosimetric determination of carboxymethylcellulase activity. Methods Enzymol. 160:130-135.
- Hunt, R.S.; Funk, A. 1988. Parvacoccum pini gen. et sp. nov. (Rhytismataceae) on western white pine. Mycotaxon 33:51-55.
- Manville, J.F.; Sahota, T.S.; Hall, L.D.; Luck, S. 1988. In vitro pupae response to orientation

detected by proton magnetic resonance chemical microscopy. Comp. Biochem. Physiol. A 89(3): 449-454.

- Manville, J.F.; McMullen, L.H.; Reimer, K.J. 1988. Impact and role of Monosodium methanearsonate on attack and progeny production by the Douglasfir beetle (Coleoptera: Scolytidae) in lethal trap trees. J. Econ. Entomol. 1691-1697.
- Mitchell, L.A. 1988. A sensitive dot immunoassay employing monoclonal antibodies for detection of *Sirococcus strobilinus* in spruce seed. Plant Dis. 72:664-667.
- Moeck, H.A. 1988. A bucket emergence trap for corticolous insects. Can. Entomol. 120:855-858.
- Panesar, T.S.; Sutherland, J.R. 1988. Susceptibility of Finnish pine to North American pinewood nematodes. Phytopathology 78:1514 (Abstract). Peet, F.G.; Sahota, T.S. 1988. Image texture fea-
- Peet, F.G.; Sahota, T.S. 1988. Image texture features for cell nuclei based on absorbance surface curvature. Anal. Quant. Cytol. Histol. 10:171-175.
- Safranyik, L. 1988. Estimating attack and brood totals and densities of the mountain pine beetle in individual lodgepole pine trees. Can. Entomol. 120:323-333.
- Safranyik, L.; Linton, D.A. 1988. Distribution of attacks on spruce stumps by the spruce beetle, *Dendroctonus rufipennis* (Kirby) (Coleoptera: Scolytidae), and effects on the length of egg galleries. Can. Entomol. 120:85-94.
- Sahota, T.S.; Peet, F.G. 1988. Computer-assisted measurement and analysis of chromatin distribution patterns to determine quality differences among bark beetle (Scolytidae) populations. Mem. Entomol. Soc. Canada. 146:171-180.
- among bark beetle (Scolytidae) populations.
 Mem. Entomol. Soc. Canada. 146:171-180.
 Shepherd, R.F.; Bennett, D.D.; Dale, J.W.; Tunnock,
 S.; Dolph, R.D.; Thier, R.W. 1988. Evidence of synchronized cycles in outbreak patterns of Douglas-fir tussock moth, Orgyia Pseudotsugata (McDunnough) (Lepidoptera: Lymantriidae).
 Mem. Entomol. Soc. Can. 146:107-121.
- Shore, T.L.; McLean, J.A. 1988. The use of markrecapture to evaluate a pheromone-based mass trapping program for ambrosia beetles in a sawmill. Can. J. For. Res. 18:1113-1117.
- Shore, T.L.; Alfaro, R.I. 1988. Predicting Douglasfir defoliation from the percentage of buds infested by the Western Spruce Budworm. J. Entomol. Soc. B.C. 85:21-24.
- Shore, T.L.; Alfaro, R.I.; Harris, J.W.E. 1988. Comparison of binocular and cut-branch methods for estimating budworm defoliation of Douglas-fir. J. Entomol. Soc. B.C. 85:15-20.
- Stewart, G.A.; Turner, K.J.; Baldo, B.A.; Cripps, A.W.; Ford, A.; Seagroatt, V.; Lowenstein, H.; Ekramoddoulah, A.K.M. 1988. Standardization of rye-grass pollen (Lolium perenne) extract: an immunochemical and physicochemical assessment of six candidate international reference preparation. Int. Arch. Allergy Appl. Immnol. 86:9-18.
- Thomson, A.J.; Tudor, K.D.; Korelus, V.J.; Ralph, D.R. 1988. Detecting the response of Douglas-fir to nitrogen fertilization by regression of periodic

annual increment against basal area. Can. J. For. Res. 18:1343-1346.

Zhengwei, L.; Ekramoddoullah, A.K.M.; Kisil, F.T.; Hébert, J.; Mourad, W. 1988. Isolation and characterization of *Poa p* I allergens of Kentucky bluegrass pollen with a murine monoclonal anti-*Lol p* I antibody. Int. Arch. Allergy Appl. Immunol. 87:294-300.

Symposium Proceedings / Actes de symposiums

- Arnott, J.T.; Dunsworth, B.G.; O'Reilly, C. 1988. Effect of nursery culture on morphological and physiological development of western hemlock seedlings. Pages 38-44 in T.D. Landis, ed., Proc. Western Forest Nursery Council-Forest Nursery Association of British Columbia Combined Meeting, Vernon, B.C., Aug. 8-11, 1988. USDA For. Serv., Rocky Mtn. For. and Range Exp. Sta., Fort Collins, CO. Gen. Tech. Rep. RM-167.
- Brix, H.; Trofymow, J.A.; Mitchell, A.; Preston, C. 1988. Effects of phosphorus and sulphur fertilization on the growth of thinned and urea fertilized Douglas-fir at Shawnigan Lake, B.C. Pages 52-53 in H.N. Chappell and R.E. Miller, eds., Sulfur Nutrition and Fertilization of Western Conifers. Workshop Proc., Eatonville, WA, March 30-31, 1988. Regional Forest Nutrition Research Project #10, Univ. of Wash. Coll. Forest Res.
- Barclay, H.J. 1988. A principle for combining methods of pest control. Pages 266.1-266.12 in Proc. XIVth Int. Biom. Conf., Namur, Belgium, July 18-23, 1988.
- Edwards, D.G.W.; Leadem, C.L. 1988. The reproductive biology of western red cedar with some observations on nursery production and prospects for seed orchards. Pages 102-113 in N.J. Smith, ed., Western red cedar — does it have a future? Vancouver, B.C. July 1987. Univ. Brit. Columb., Forestry Publications.
- Grossnickle, S.C.; Arnott, J.T.; Major, J.E. 1988. A stock quality assessment procedure for characterizing nursery-grown seedlings. Pages 77-87 in T.D. Landis, ed., Proc. Western Forest Nursery Council-Forest Nursery Association of British Columbia Combined Meeting, Vernon, B.C., Aug. 8-11, 1988. USDA For. Serv., Rocky Mtn. For. and Range Exp. Sta., Fort Collins, CO. Gen. Tech. Rep. RM-167.
- Hetherington, E.D. 1988. Hydrology and logging in the Carnation Creek watershed — what have we learned? Pages 11-15 in T.W. Chamberlin, ed., Proc. Carnation Creek Workshop — Applying 15 Years of Carnation Creek Results. Pacific Biological Station, Nanaimo, B.C., Jan. 13-15, 1987.
- Hulme, M.A.; Miller, G.E. 1988. Potential for control of Barbara colfaxiana Kearfott (Lepidoptera: Olethreutidae) using Trichogramma species. Pages 483-388 in J. Voegele, J. Waage, and J. Van Lenteren, eds., Trichogramma and other egg parasites. INRA (Institute national de la recherche agronomique) publication, Versailles, France.

- Lee, Y.J. 1988. Delineation of clearcut area using Thematic Mapper data and a Perceptron image analysis system on an IBM microcomputer. Pages 237-241 in Proc. Second Forest Service Remote Sensing Applications Conference, Slidell, LA. American Society of Photogrammetric Engineering and Remote Sensing.
- Meagher, M.D. 1988. White pine plantation experience in British Columbia. Pages 27-31 in Proc. Western White Pine Manag. Symp. Nakusp, B.C., May 2-5, 1988.
- Meagher, M.D. 1988. Dry weight distribution in Tsuga heterophylla seedlings: evidence for genetic control. In Proc. Tenth North Am. Biol. Workshop, Vancouver, B.C., July 20-22, 1988. Morrison, D.J.; Hunt, R.S. 1988. Leptographium
- Morrison, D.J.; Hunt, R.S. 1988. Leptographium species associated with root disease of conifers in British Columbia. Pages 81-96 in T.C. Harrington and F.W. Cobb, Jr., eds., Leptographium Root Diseases on Conifers. American Phytopathological Society, St. Paul, MN, 149 p.
- O'Řeilly, C.; Öwens, J.N.; Arnott, J.T.; Dunsworth, B.G. 1988. Effect of nursery treatment on shoot length components of western hemlock seedlings during the first year of field establishment. Pages 188-194 in T.D. Landis, ed., Proc. Western Forest Nursery Council-Forest Nursery Association of British Columbia Combined Meeting, Vernon, B.C., Aug. 8-11, 1988. USDA For. Serv., Rocky Mtn. For. and Range Exp. Sta., Fort Collins, CO. Gen. Tech. Rep. RM-167.
- Preston, C.M. 1988. The application of NMR spectroscopy to organic soils and horizons. Pages 121-133 in Jan de Vries, coordinator and editor, Organic Soils and Horizons. Proc. 11th British Columbia Soil Science workshop, University of British Columbia, Vancouver, B.C., Feb. 19-20, 1987. B.C. Ministry of Agriculture and Fisheries, Victoria, B.C.
- Sahota, T.S.; Peet, F.G. 1988. Changes in the quality of scolytid populations: this determination and relation to scolytid outbreaks. Proc. XVIII International Congress of Entomology: 412. Senyk, J.P.; Wiken, E.B.; Ironside, G.R.; Pierce, T.W.
- Senyk, J.P.; Wiken, E.B.; Ironside, G.R.; Pierce, T.W. 1988. Generalized land capability for forestry, Yukon Territory. 1:1000 000 map, report and extended legend. Inland Waters and Lands Directorate, Conservation and Protection Service, Environment Canada, Ottawa.
- Senyk, J.P.; Smith, R.B. 1988. Forestry practices and soil degradation in B.C. Pages 115-119 in Preprint Book, 69th Canadian Pulp and Paper Association, Woodlands Section, Canadian Pulp and Paper Association, March 27-30, 1988. Montreal.
- Smith, R.B.; Hays, W.; King, R.K. 1988. Some applications of vegetative changes induced by forest management. Pages 93-98 in T.W. Chamberlin, ed., Proc. Carnation Creek Workshop — Applying 15 Years of Carnation Creek Results. Pacific Biological Station, Nanaimo, B.C., Jan. 13-15, 1987.
- Sturrock, R.N.; Dennis, J.J. 1988. Styroblock sanitization: results of laboratory assays from trials at

several British Columbia forest nurseries. Pages 149-154 in T.D. Landis, ed., Proc. Western Forest Nursery Council-Forest Nursery Association of British Columbia Combined Meeting, Vernon, B.C., Aug. 8-11, 1988. USDA For. Serv., Rocky Mtn. For. and Range Exp. Sta., Fort Collins, CO. Gen. Tech. Rep. RM-167.

- White, E.E. 1988. The potential of molecular biology in white pine tree improvement. Pages 37-38 in Hunt, R.S., ed., Proc. Western White Pine Management Symposium, Nakusp, B.C., May 2-5, 1988.
- White, E.E. 1988. Chloroplast DNA in western white pine. Western Forest Genetics Association Annual Meeting, Symposium on Forest Biotechnology, Davis, CA. July 26-28, 1988.

- Andrews, R.J. 1988. Forest insect and disease conditions, Cariboo forest region, 1987. Forest Insect and Disease Survey Report 88-1. 15 p.
- Insect and Disease Survey Report 88-1. 15 p. Banner, A.; Bebda, R.J.; Oswald, E.T.; Pojar, J.; Trowbridge, R. 1988. Wetlands of Pacific Canada. Pages 305-346 (Chapter 8) in Wetlands of Canada. National Wetlands Working Group, Canada Committee on Ecological Land Classification. Polyscience Publication Inc.
- Breadon, R.E. 1988. Site preparation equipment in British Columbia: current availability and future needs. FRDA Report 016.
- Canada-British Columbia Forest Resource Development Agreement Annual Report 1987-1988. 15 p.
- Erickson, R.D.; Loranger, J. 1988. Forest insect and disease conditions, Kamloops forest region, 1987. Forest Insect and Disease Survey Report 88-2. 37 p.
- Funk, A.; Duncan, R.; Clarke, D. 1988. Drought induced mortality of grand fir and western red cedar on southeast Vancouver Island. Forest Insect and Disease Survey Pest Report.
- Garbutt, R. 1988. Forest insect and disease conditions, Yukon forest region, 1987. Forest Insect and Disease Survey Report 88-7. 10 p.
- Garbutt, R. 1988. Seedling mortality by Rhizina root disease, British Columbia 1988. Forest Insect and Disease Survey Pest Report.
- Garbutt, R. 1988. Special report: pine root collar weevil in the coast transition zone of the Prince Rupert region, 1988. Forest Insect and Disease Survey Pest Report.
- Survey Pest Report. Garbutt, R.; Turnquist, R. 1988. Forest insect and disease conditions, Prince George forest region, 1987. Forest Insect and Disease Survey Report 88-4. 30 p.
- Hedin, I.B. 1988. Requirements and design parameters for lodgepole pine strip thinning equipment in British Columbia. FRDA Report 032.
- Holmsen, S.D.; Whitehead, R.J. 1988. Comparison of clearing-saw cutting attachments for weeding young conifer plantations. FRDA Report 032.
- young conifer plantations. FRDA Report 032. Humble, L.M.; Duncan, R.W. 1988. Insect and related pests of households, British Columbia.

Pages 68-69 in M.J. Sarazin, ed., The Canadian Agricultural Insect Pest Review, 1987.

- Humble, L.M.; Duncan, R.W. 1988. Insect and related pests of man and animals, British Columbia. Page 74 in M.J. Sarazin, ed., The Canadian Agricultural Insect Pest Review, 1987.
- Humble, L.M.; Duncan, R.W. 1988. Insect and related pests of ornamentals, British Columbia. Page 61 in M.J. Sarazin, ed., The Canadian Agricultural Insect Pest Review, 1987.
- Humble, L.M.; Duncan, R.W. 1988. Insect and related pests of stored products, British Columbia. Page 71 in M.J. Sarazin, ed., The Canadian Agricultural Insect Pest Review, 1987.
- Humphreys, N. 1988. Blackheaded budworm in British Columbia in 1988 and forecast for 1989. Forest Insect and Disease Survey Pest Report.
- Forest Insect and Disease Survey Pest Report. Humphreys, N.; Ferris, R.L. 1988. Forest insect and disease conditions, Vancouver forest region, 1987. Forest Insect and Disease Survey Report 88-6. 49 p.
- Indian Forest Lands Program. 1988. Treetalk No. 5. FRDA.
- Klinka, K.; Carter, R. 1988. Douglas-fir fertilization — decision making for industrial use — an establishment report. FRDA Report 033.
- lishment report. FRDA Report 033. Kurz, W.; Kimmins, J.P. 1988. The influence of site quality on tree resource allocation to fine roots and its effect on harvestable productivity of coastal Douglas-fir stands. FRDA Report 034.
- Koot, H.P. 1988. Status of Douglas-fir tussock moth. Forest Insect and Disease Survey Pest Report.
- Koot, H.P. 1988. Western spruce budworm in British Columbia — a forecast for 1989. Forest Insect and Disease Survey Pest Report.
- Insect and Disease Survey Pest Report. Koot, H.P.; Vallentgoed, J. 1988. Forest insect and disease conditions, Nelson forest region, 1987. Forest Insect and Disease Survey Report 88-3. 42 p.
- MacDonald, J. 1988. Productivity and profitability of the Madill 122 when grapple yarding B.C. coastal second-growth timber. FRDA Report 015.
- Massie, M.R.C. 1988. Utilization opportunities for western red cedar — a review. FRDA Report 017.
- Nawitka Resource Consultants. 1988. Impact of intensive forestry practices on net stand values in British Columbia. FRDA Report 014.
- Northern Lights College. 1988. Forestry or agriculture — a case for diversification. FRDA Report 042. 95 p.
- Peterson, M. 1988. Die-back of container-grown Douglas-fir seedlings: associated microclimate. FRDA Report 035.

- Peterson, M.J.; Sutherland, J.R.; Sturrock, R.N. 1988. Grey mould control on container-grown Douglas-fir seedlings: timing of fungicide application related to greenhouse environment. FRDA Report 051.
- Reid, Collins and Associates. 1988. Managing your woodland: a non-forester's guide to small-scale forestry in British Columbia. Published by FRDA.
- Sauder, E.A. 1988. Future equipment needs in coastal B.C. FRDA Report 027.
- Smith, S.M. 1988. Regeneration delays and natural yields on untreated backlog forest land in B.C. FRDA Report 043.
- Sullivan, T.P. 1988. Non-target impacts of the herbicide glyphosate: a compendium of references and abstracts. FRDA Report 013.
- Teske, E. 1988. Information Forestry Newsletter 15(2). 8 p.
- Teske, E. 1988. Program Review 1987-1988. 72 p.
- Unger, L.; Stewart, A. 1988. Forest insect and disease conditions, Prince Rupert forest region, 1987. Forest Insect and Disease Survey Report 88-5. 54 p.
- Utzig, G.; Walmsley, M. 1988. Evaluation of soil degradation as a factor affecting forest productivity in British Columbia: a problem analysis. FRDA Report 025.
- Van Sickle, G.A. 1988. Beneficial Insects, British Columbia. Page 79 in M.J. Sarazin, ed., The Canadian Agricultural Insect Pest Review, 1987.
- Walmsley, M.; Utzig, G.; Still, G. 1988. Analysis of change in timber values due to silviculture treatments under the Canada-British Columbia Forest Resource Development Agreement. FRDA Report 041.
- Wetton, C.E. 1988. A survey of private forest land owners in British Columbia. FRDA Report 044.
- Wood, C.; Koot, H.P. 1988. Predicted defoliation of Douglas-fir by western spruce budworm in the southern interior May 1988. Forest Insect and Disease Survey Pest Report.
- Wood, C.; Van Sickle, G.A. 1988. Western spruce budworm in British Columbia in 1988. Forest Insect and Disease Survey Pest Report.
- Wood, C.; Van Sickle, G.A. 1988. Forest pest conditions in the Pacific region: a midseason summary. Forest Insect and Disease Survey Special Report. 16 p.
- Woodbridge, Reed and Associates. 1988. The status and direction of the lumber remanufacturing sector in British Columbia. FRDA Report 045.



