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Canadian National List of Seed Orchards, 1981

D.F.W. Pollard

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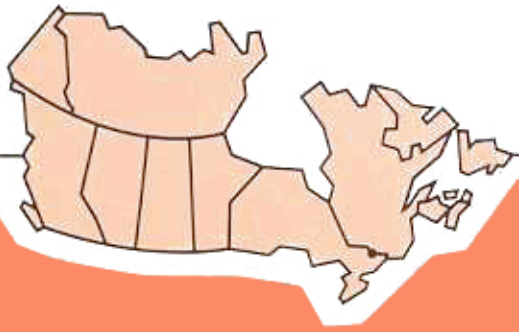

Cover photo: Saanichton Seed Orchard (Pacific Forest Products Ltd.) Saanichton, B.C.

CANADIAN NATIONAL LIST OF SEED ORCHARDS, 1981

by

D.F.W. Pollard

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ABSTRACT

One hundred and twenty nine forest tree seed orchards occupying 364 hectares are listed by province for Canada. The list identifies species, ownership, location, area (of orchard), objective (zones of intended seed use), composition (full sib, half sib or clonal), and year of establishment. This is the first national list of seed orchards and includes all known orchards existing and established by December 31, 1981.

RÉSUMÉ

Ce document énumère, par province, 129 vergers à graines qui occupent une superficie de 364 hectares au Canada. Pour chacun, on précise les essences, les propriétaires, l'emplacement, la superficie, les objectifs (zones prévues d'utilisation des graines), la composition (fratries, demi-fratries, clones) et l'année d'établissement. C'est le premier répertoire national des vergers; il comprend tous les vergers connus établis avant le 31 décembre 1981.

INTRODUCTION

The need for a national list of seed orchards arises principally from Canada's participation in the Organization for Economic Cooperation and Development (OECD) Scheme for the Control of Forest Reproductive Material Moving in International Trade. OECD regulations for this Scheme* call for each member country to establish and publish a National List of Approved Basic Material.

The term "Approved" implies that basic material, i.e. trees from which seeds are obtained, meet the standards laid down in the OECD regulations.

To apply the OECD Scheme in Canada, the Canadian Forestry Service (CFS) has established national regulations for the certification of source - identified tree seeds**. Since inception of the OECD Scheme in 1970, sources of seeds for export have been limited to wild stands in western Canada for which certification of source identity has been requested. However, the OECD Scheme includes three other categories (selected, untested seed orchard, and tested reproductive material). Certification for these latter categories, whose genetic specifications entail more than source identity, requires that the seed sources themselves meet OECD regulatory standards. The list of seed sources that meets these requirements will eventually become the National List of Approved Basic Material as called for by OECD. Future certification of these higher categories will depend, of course, on the demand placed on seed producers and exporters, on the availability of supplies for export, and on the development of Canadian regulations for these categories.

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* Anon. 1974. OECD Scheme for the control of forest reproductive material moving in international trade. Org. Economic Cooperation and Development, Directorate for Agriculture and Food, Paris. 24. p.

** Piesch, R.F., and Stevenson, R.E. 1976. Certification of source-identified Canadian tree seed under the OECD Scheme. Can. For. Ser., For. Tech. Rep. 19, 18 p. + map.

A separate but closely related issue is the establishment of Regulations for Forest Tree Seeds pertaining to the Seeds Act of Canada. Proposed regulations were drafted in January 1981† and were reviewed in 1982. The precise form of the regulations will depend on that review and on acceptance of revisions. An objective to be vigorously pursued will be the alignment of Canadian national regulations with those of OECD so that a single, proven scheme can be administered for both national and international movements. Implicit in the national regulations, therefore, will be a scheme for the certification of seeds according to categories comparable with those of OECD. Seed sources, including seed orchards, meeting the certification requirements would be entered in a National Registry of Seed Sources. However, such alignments are only proposals at the time of writing.

This first national list of seed orchards could serve several purposes in the near future:

provide a comprehensive list of seed orchards for case studies of individual species currently conducted by OECD

provide a data base for the development of a National List of Approved Basic Material for submission to the OECD secretariat

provide a data base for the development of a Canadian National List of Seed Sources under the supervision of a Registrar (as proposed under Regulations for Forest Trees Seeds)

provide a data base for the assessment of seed production potential and availability for domestic forest renewal with genetically-improved stock (from data compiled on the OECD Seed Orchard Registration Form; see Appendix 1).

Quite apart from its expressed purposes, this first list of Canadian seed orchards will provide a single reference source for tree breeders, forest managers and others, both in Canada and abroad. The list will be updated periodically and will serve to record progress on the establishment of approved lists for OECD and domestic purposes.

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† Pollard, D.F.W., Edwards, D.G.W., and Wang, B.S.P. "Forest Tree Seeds Regulations." Can. For. Serv. Unpub. manus. Jan. 15, 1981. 29 p.

CANADIAN NATIONAL LIST OF SEED ORCHARDS, 1981

The following list of seed orchards in Canada was compiled at the Pacific Forest Research Centre from information gathered in 1981 by staff of Regional and National Forest Research Centres of the CFS. In most instances, provincial government departments responsible for forestry were the chief sources of information, because seed orchards are usually established and administered under their authority or through a council or cooperative in which they perform a leading role.

CANADIAN NATIONAL LIST OF SEED ORCHARDS
DECEMBER 1981

Species	Ownership	Location	Area (ha)	Objective (seed orchard planning zone; elevations in m)	Composition	Year est.
ALBERTA						
None						
BRITISH COLUMBIA						
Coastal Region						
Ps me	BCMF-Quinsam	Campbell R.	7.80	EVI 450-610	C,S, 1/2 S	1963
Ps me	PFP	Saanich	1.80	EVI 0-450	C, 1/2 S	1964
Ps me	PFP	Saanich	3.40	EVI 550+	C	1964
Ps me	Tahsis "C"	Saanich	3.50	WVI 0-450	C,S, 1/2 S	1969-75
Ps me	BCMF-Koksilah	Duncan	3.20	SCM, CIT 450-640	1/2 S	1970
Ps me	BCMF-Snowdon	Campbell R.	4.00	JS 0-300	C, 1/2 S	1971
Ps me	CFP	Sechelt	2.40	EVI, JS 450-610	C	1971
Pic si	Tahsis	Saanich	0.90	WVI 0-450	C	1973
Ps me	MB	Yellow Pt.	1.60	High	C	1977
Ps me	BCMF-Dewdney	Saanich	7.20	CIT 760-1070	C, 1/2 S	1975
Ps me	PFP	Saanich	6.00	EVI 550+	S	1976
Ps me	MB	Harmac	1.20	Dry Mid	C	1976-78
Ps me	MB	Harmac	1.00	Dry Mid	C	1976-78
Ps me	MB	Harmac	0.50	Dry Low	C	1976
Ps me	MB	Harmac	1.00	Wet Low	C	1976
		Total	45.50			
Central Interior Region						
Pin co	BCMF	Red Rock	4.40	Omenica-Pinchi	C	1974
Pin co	BCMF	Red Rock	1.70	Dawson-Peace	C	1978
Pin co	BCMF	Red Rock	3.20	Willow-Bowron	C	1978
Pin co	BCMF	Red Rock	5.50	Smithers	C	1979

Canadian National List of Seed Orchards (Continued)

Species	Ownership	Location	Area (ha)	Objective (seed orchard planning zone; elevations in m)	Composition	Year est.
Central Interior (Cont'd)						
Pic	BCMF	Skimikin	4.00	Central Plateau Low	C	1979
Pic	BCMF	Skimikin	3.20	Central Plateau High	C	1979
Pic	BCMF	Skimikin	2.90	Bulkley Low	C	1980
Pic	BCMF	Skimikin	3.30	Bulkley High	C	1980
		Total	28.20			
Southern Interior Region						
Pic	BCMF	Skimikin	1.20	West Kootenay Low	C	1980
Pic	BCMF	Skimikin	3.00	West Kootenay High	C	1980
		Total	4.20			
		PROVINCE TOTAL	77.90			
MANITOBA						
Pin ba	CFS	Oakbank	0.30	SEM	1/2 S	1972
Pin re	MDNR	Hadashville	0.10	49-50°N	C	1972
Pic gl	MDNR	Hadashville	0.13	49-52°N	C	1980
Pic gl	MDNR	Hadashville	0.20	49-52°N	1/2 S	1981
Pic ma	MDNR	Hadashville	0.20	49-54°N	1/2 S	1981
Pic ma	MDNR	Hadashville	0.20	49-54°N	C	1982
Pin ba	MDNR	Hadashville	0.20	SEM	C	1982
Pin gl	MDNR	The Pas	0.20	52-54°N	C	1982
		Total	1.53			
NEW BRUNSWICK						
La de	CFS	Macdonalds Cor.	0.50	SNB	1/2 S	1974
La	CFS	Macdonalds Cor.	0.50	SNB	C, 1/2 S	1974
La le	VFP	Canterbury	0.50	SNB	C	1977

Canadian National List of Seed Orchards (Continued)

Species	Ownership	Location	Area (ha)	Objective (seed orchard planning zone; elevations in m)	Composition	Year est.
NEW BRUNSWICK (Cont'd)						
Pic ma	Fraser	Green River	2.00	NWNB	1/2 S	1978
Pic gl	NBDNR	Pokiok	7.65	SNB	1/2 S	1978
Pic gl	NBDNR	Pokiok	0.50	SNB	1/2 S	1979
Pic ma	NBDNR	Pokiok	6.00	SNB	1/2 S	1979
Pic ba	NBDNR	Cains River	5.40	CNB	1/2 S	1979
Pic ma	Fraser	Three Brooks	4.00	NWNB	1/2 S	1979
Pic ma	Irving	Black Brook	4.00	NWNB	1/2 S	1979
Pin ba	Irving	Dube Settlement	5.40	SNB	1/2 S	1979
Pic ma	NBIP	Levesque Rd.	4.00	NNB	1/2 S	1979
Pic ma	NBDNR	Pokiok	1.50	SNB	1/2 S	1980
Pic ma	NBDNR	Bettsburg Rd.	6.00	CNB	1/2 S	1980
Pic ma	Fraser	Three Brooks	3.80	NWNB	1/2 S	1980
Pic ma	Irving	Black Brook	2.80	NWNB	1/2 S	1980
Pic ma	NBIP	Levesque Rd.	4.00	NNB	1/2 S	1980
Pic ma	GP	Magaguadavic	2.30	SNB	1/2 S	1980
Pic ma	NBDNR	Bettsburg Rd.	4.60	CNB	1/2 S	1981
Pin ba	NBDNR	Cains River	2.60	CNB	1/2 S	1981
Pic ma	Fraser	Three Brooks	4.00	NWNB	1/2 S	1981
Pic ma	Irving	Deersdale	4.00	CNB	1/2 S	1981
Pin ba	Irving	Blackbrook	4.00	NWNB	1/2 S	1981
Pic ma	GP	Magaguadavic	2.20	SNB	1/2 S	1981
Pic ma	GP	Magaguadavic	2.00	SNB	1/2 S	1981
		Total	84.25			
NOVA SCOTIA						
Pic ru	NSLF	Lawrence Town	1.60	NS	C	1977
Pic gl	NSLF	MacQuarrie Lake Rd.	3.60	NS	1/2 S	1978
Pic gl	NSLF	East Mines	1.20	NS	C	1981
Pic ru	NSLF	Waterville	0.76	NS	C	1981
Pic ab	NSLF	Debert	0.98	NS	C	1981
Pin st	NSLF	Debert	1.05	NS	C	1981
		Total	9.19			

Canadian National List of Seed Orchards (Continued)

Species	Ownership	Location	Area (ha)	Objective (seed orchard planning zone; elevations in m)	Composition	Year est.
NEWFOUNDLAND						
	None					
ONTARIO						
Pin st	OMNR	Nepean	0.80	ER Ottawa Dis.	1/2 S	1947
Pic gl	KC	Longlac	0.40	NER (3W)	C	1958-78
Pic ma	KC	Longlac	0.40	NER (3W)	C	1958-78
Pin re	OMNR	Grenfell	9.30	NR Kirkland Lake Dis.	1/2 S	1959-67
Pin sy	OMNR	Midhurst	0.60	CR	1/2 S	1960
Bet all	OMNR	Angus	0.04	CR	1/2 S	1960
Pin sy	OMNR	Angus	0.08	CR	1/2 S	1960
Pin st	OMNR	Orono	7.40	CR	1/2 S	1963-71
Pin re	OMNR	Forest Station	0.80	NCR Thunder Bay Dis.	1/2 S	1964
Pin re	OMNR	Gurd	5.70	NER North Bay Dis.	1/2 S	1964-71
Pin st	OMNR	Gurd	3.00	NER North Bay Dis.	1/2 S	1964-71
Pic gl	OMNR	Mattawin	3.60	NCR Thunder Bay Dis.	1/2 S	1966-71
Pic ma	OMNR	Mattawin	3.60	NCR Thunder Bay Dis.	1/2 S	1966-72
Pic gl	OMNR	Midhurst	1.80	CR	1/2 S	1966-72
Ro ps	OMNR	St. Williams	*	SWR	C	1969
Pic gl	OMNR	Pearson	0.80	NCR Thunder Bay Dis.	1/2 S	1971
Ac sa	OMNR	Orono	0.30	CR	1/2 S	1966-72
La de	OMNR	Orono	0.08	CR	1/2 S	1971
Pic ma	OMNR	Glencairn	5.40	CR Huronia Dis.	1/2 S	1972-79
Pic gl	OMNR	O'Connor	1.60	NCR Thunder Bay Dis.	1/2 S	1973-79
Pic ma	OMNR	O'Connor	2.00	NCR Thunder Bay Dis.	1/2 S	1973-79
Pic gl	OMNR	Glencairn	6.50	CR Huronia Dis.	1/2 S	1973-79
Ac sa	OMNR	Glencairn	0.50	CR Huronia Dis.	1/2 S	1974
Pic gl	OMNR	Aubrey	1.40	NWR Dryden Dis.	1/2 S	1975-79
Pic ma	OMNR	Aubrey	2.00	NWR Dryden Dis.	1/2 S	1975-79
Pic ma	OMNR	Pearson	0.40	NCR Thunder Bay Dis.	1/2 S	1975

*Windbreaks

Canadian National List of Seed Orchards (Continued)

Species	Ownership	Location	Area (ha)	Objective (seed orchard planning zone; elevations in m)	Composition	Year est.
ONTARIO (Cont'd)						
Pic gl	OMNR	Gurd	0.80	NER North Bay Dis.	1/2 S	1976
Pic ab	OMNR	Glencairn	1.00	CR Huronia Dis.	1/2 S	1976
Pin st	OMNR	Glencairn	0.40	CR Huronia Dis.	1/2 S	1978
Pic gl	OMNR	Tovell	1.20	NWR Fort Frances Dis.	1/2 S	1979
Pic ma	OMNR	Tovell	1.20	NWR Fort Frances Dis.	1/2 S	1979
Pin ba	OMNR	Spoor Lake	3.00	Algonquin Region 5	1/2 S	1980-81
		Total	66.10			
*Windbreaks						
PRINCE EDWARD ISLAND						
Pic ma	PEIFB	48 Road, Kings Co.	5.00	PEI	1/2 S	1980
QUEBEC						
Pic ma	MER	Canton Hamilton	0.60	Zone 11	1/2 S	1973
Pic gl	MER	Canton Hamilton	1.10	Zone 11	1/2 S	1973
Pic ru	MER	Canton Hamilton	0.10	Zone 11	1/2 S	1973
Pic ab	MER	Seig. Madawaska	1.10	Zones 8, 10	1/2 S	1974
Pic gl	MER	Seig. Madawaska	1.00	Zones 8, 10	1/2 S	1974
Pic ma	MER	Canton Masson)			1/2 S	1974
Pic ab	MER	Canton Masson)			1/2 S	1974
Pic gl	MER	Canton Masson)			1/2 S	1974
Pic ru	MER	Canton Masson)	7.00	Zones 4.5	1/2 S	1974
Pin ba	MER	Canton Masson)			1/2 S	1974
Pin sy	MER	Canton Masson)			1/2 S	1974
La la	MER	Canton Masson)			1/2 S	1974
La de	MER	Canton Masson)			1/2 S	1974
La la	MER	Bonaventure	0.20	Baie des Chaleurs	C	1975
La de	MER	Vercheres	3.60	Haut-St-Laurent	1/2 S	1976

Canadian National List of Seed Orchards (Continued)

Species	Ownership	Location	Area (ha)	Objective (seed orchard planning zone; elevations in m)	Composition	Year est.
QUEBEC (Cont'd)						
Pic ab	MER	Seig. Batiscan	6.10	Zone 5	1/2 S	1976
Pic ab	MER	Seig. Beloeil	1.40	Zone 7	1/2 S	1976
La de	MER	Lotbiniere	0.60	Moyen St-Laurent	1/2 S	1976
La la	MER	Lotbiniere	0.60	Moyen St-Laurent	C	1977
Pin st	MER	Seig. Beloeil	4.50	Zone 7	1/2 S	1978
Pin ba	MER	Canton Briand	48.30	Zone 5	1/2 S	1978
Pin ba	MER	Canton Guigues	0.70	Zones 1.4	1/2 S	1978
La le	MER	Lotbiniere)	3.70	Haut-St-Laurent, Estrie	C	1979
La de	MER	Lotbiniere)	3.70	Haut-St-Laurent, Estrie	C	1979
La de	MER	Villeroy	2.00	Estrie	C	1979
Pic ma	MER	Canton Normandin	2.30	Zone 2	1/2 S	1979
Pin re	MER	Canton Normandin	3.50	Zone 2	1/2 S	1980
Pic gl	MER	Seig. Aubin de l'Isle	2.00	Zone 9	1/2 S	1980
Pin re	MER	Seig. Beloeil	2.70	Zone 7	1/2 S	1980
Pin ba	MER	Canton Duvernay	12.00	Zone 1	1/2 S	1980
La le	CIP	Batiscan	2.00	Haut-St-Maurice	S	1980
		Total	112.50			
SASKATCHEWAN						
Pin ba	PAP	Henribourg	7.50	NCS	C	1979-81
YUKON AND NORTHWEST TERRITOIRES						
None						

CANADA TOTAL 129 orchards; area: 363.97 ha

ABBREVIATIONS - SPECIES

Ac sa	*Acer saccharinum* L.
Al	(unspecified species) *Alnus*
Bet all	*Betula alleghaniensis* Britton
La	hybrids of (*Larix leptolepis* x *L. laricina*) x *L. decidua*
La de	*Larix decidua* Mill.
La la	*Larix laricina* (Du Roi) K. Koch
La le	*Larix leptolepis* (Sieb. and Zucc.) Gord.
Pic	unspecified sources or hybrids of *Picea glauca* and/or *P. engelmannii* Parry normally referred to as interior spruce.
Pic ab	*Picea abies* (L.) Karst.
Pic gl	*Picea glauca* (Moench) Voss.
Pic ma	*Picea mariana* (Mill.) BSP.
Pic ru	*Picea rubens* Sarg.
Pic si	*Picea sitchensis* (Bong.) Carr.
Pin ba	*Pinus banksiana* Lamb.
Pin co	*Pinus contorta* Dougl. var. *latifolia* Engelm.
Pin re	*Pinus resinosa* Ait.
Pin st	*Pinus strobus* L.
Pin sy	*Pinus sylvestris* L.
Ps me	*Pseudotsuga menziesii* (Mirb.) Franco
Ro ps	*Robinia pseudoacacia* L.

ABBREVIATIONS - OWNERSHIP AND OBJECTIVES

British Columbia	Ownership	
	BCMF	British Columbia Ministry of Forests
	CFP	Canadian Forest Products Limited
	MB	MacMillan Bloedel Limited
	PFP	Pacific Forest Products Ltd.
	Objective	
	CIT	Coast Interior Transition
	EVI	Eastern Vancouver Island
	JS	Johnstone Strait
	SCM	South Coast Mainland
	WVI	Western Vancouver Island
	Dry	Dry sites on Vancouver Island and Coast
	Wet	Wet sites on Vancouver Island and Coast
	Mid	Mid-elevations
	Low	Low-elevations
	High	High-elevations on Vancouver Island and Coast
Manitoba	Ownership	
	MDNR	Manitoba Department of Natural Resources
	Objective	
	SEM	Southeast Manitoba
New Brunswick	Ownership	
	CFS	Canadian Forestry Service
	Fraser	Fraser Incorporated
	GP	Georgia Pacific Corporation
	Irving	J.D. Irving Limited
	NBDNR	New Brunswick Department of Natural Resources
	NBIP	New Brunswick International Paper Company
	VFP	Valley Forest Products Limited
	Objective	
	CNB	Central New Brunswick
	NNB	North New Brunswick
	NWNB	Northwest New Brunswick
	SNB	South New Brunswick

ABBREVIATIONS - OWNERSHIP AND OBJECTIVES (Cont'd)

Nova Scotia	Ownership	
	NSLF	Nova Scotia Department of Lands and Forests
	Objective	
	NS	Nova Scotia
Ontario	Ownership	
	KC	Kimberley-Clark
	OMNR	Ontario Ministry of Natural Resources
	Objective	
	CR	Central Region - 7
	ER	Eastern Region - 6
	NR	Northern Region - 3
	NCR	Northcentral Region - 2
	NER	Northeastern Region - 4
	NWR	Northwestern Region - 1
	SWR	Southwestern Region - 8
Prince Edward Island	Ownership	
	PEIFB	Prince Edward Island Forestry Branch
Quebec	Ownership	
	CIP	CIP Incorporated
	MER	Ministère de l'Énergie et des Ressources
	Objective	
	Zone	Part of Seed Zone indicated
Saskatchewan	Ownership	
	PAP	Prince Albert Pulpwood
	SFB	Saskatchewan Forestry Branch
	Objective	
	NCS	North Central Saskatchewan

ABBREVIATIONS - COMPOSITION

C - Clonal
S - Full-sib (controlled pollination) seedling
1/2 S - Half-sib (open pollination seedling)

APPENDIX 1

OECD Form AGR/TS(80)6 (1st Revision, 9th January 1981)
REGISTRATION OF SEED ORCHARD

Country _____
*Reference No _____
Untested 19___
*Approved as Tested 19___

1. **Identification**

*Species _____
(Common name) (Botanical name)
Ownership _____
Supervisor _____
Location _____
Latitude _____ Longitude _____ Elevation _____
*Area _____ ha Map References _____

2. ***Objective** _____
Selection criteria _____
Regions of probable adaptation _____

Seed yield, estimated ages _____ – _____ kg annually

3. **Composition**

	*Parent trees represented at establishm.	removed 19___	Year of propagation or ripening	*Year of establishment	Spacing 19___	19___
Clones						
Full sibs						
Half sibs						

*Design and layout _____

*Isolation _____

4. **Basic material**

The information can be pooled for parent trees of same origin, growing under similar ecological conditions. For more advanced seed orchards, breeding records should be submitted. Use back of paper.

Parent trees	*Provenance				*Origin		
	Latitude	Longitude	Elevation	Region of** provenance	Indigen.	Unknown	Introduced from

* indicate that the information is compulsory according to the OECD Rules.

** where applicable.