

**CERTIFICATION OF
SOURCE-IDENTIFIED
BRITISH COLUMBIA TREE SEED
UNDER THE O.E.C.D. SCHEME**

by
R. F. Piesch and V. H. Phelps

**PACIFIC FOREST RESEARCH CENTRE
CANADIAN FORESTRY SERVICE
VICTORIA, BRITISH COLUMBIA**

INFORMATION REPORT BC-X-60
(Supersedes Information Report BC-X-49)

**DEPARTMENT OF THE ENVIRONMENT
JULY, 1971**



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Forest Research Laboratory

Canadian Forestry Service

Department of Fisheries and Forestry

September, 1970

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INTRODUCTION

The council of the Organization for Economic Cooperation and Development (O.E.C.D.) adopted, on May 30, 1967, a memorandum^{3/} that established a scheme for the control of forest reproductive material moving in international trade.

The object is to encourage production and use of forest tree reproductive materials (seeds, parts of plants, plants) that have been collected, processed, raised and distributed in a manner that ensures their trueness to name.

Three categories of reproductive material are recognized and distinguished under the scheme:-

- (a) Source-identified material, which represents a minimum standard. The two requirements are that (i) the zone of provenance where the material is collected and the nature of its origin (indigenous or non-indigenous) shall be

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^{3/} Anon. 1967. Decision of the Council Establishing an O.E.C.D. Scheme for the Control of Forest Reproductive Material Moving in International Trade. O.E.C.D. Mimeo, C(67) 45 (Final) dated 10 Nov. 1967. 20 p.

defined and registered by a Designated Authority, and
(ii) the material shall be collected, processed and stored,
or plants raised, under the control of that Authority.

- (b) Selected reproductive material: as for (a) above, but in addition, the material shall be derived from basic material (selected stands, untested seed orchards or selected clones) that conforms to requirements laid down by the O.E.C.D.
- (c) Certified reproductive material: as for (a) above, but in addition, (i) the genetic superiority of the material shall be proved by provenance or progeny tests meeting the minimum requirements prescribed, and (ii) the number of components of seed orchards and progeny test results shall be registered by the Designated Authority.

Participation by any country is voluntary but subject to strict adherence to the rules.

Canada, as a member of O.E.C.D., assisted in formulating the scheme. The governments of several European countries to which it applies, including a number that import forest tree seed in commercial quantities from British Columbia, insisted that, as of 1970, forest reproductive materials could be imported only in compliance with the scheme. This development had serious implications concerning the export business of several forest tree seed companies in British Columbia. After consultation with seed exporters, the B. C. Provincial Forest Service and the University of British Columbia, the Canadian Forestry Service (C.F.S.) made arrangements for certification of the 1970 seed crop.

The Government of Canada nominated the C.F.S. as the Designated Authority to implement the scheme. The C.F.S. delegated responsibility

for the operation in respect of seed collected in British Columbia to the Director, Pacific Forest Research Centre, Victoria, B. C.

It was decided that:

- (a) Initially, only source identified seed would be certified.
- (b) The arrangements would apply to seed intended for export, and not to that collected for domestic use.
- (c) Certification would be required before the seed was exported from Canada.
- (d) Participation by seed exporters would be voluntary but subject to strict adherence to rules laid down by O.E.C.D. and the requirements of the C.F.S.
- (e) Initially, the C.F.S. would bear the cost of necessary inspection and certification arrangements; subsequently, other arrangements might be made.

These requirements and arrangements will continue to apply, at least in 1971/72.

Procedures for describing zones of provenance and origin, and rules embracing the minimum requirements of O.E.C.D., were prescribed for operation of the scheme in 1970. They are given in the following sections in the modified form that will apply in future and until further amended.

ZONES OF PROVENANCE AND ORIGIN

Zones of Provenance will be described by Forest Region and Section as defined by Rowe^{4/}, supplemented by geographic coordinates and elevation.

^{4/} Rowe, J.S. 1959. Forest Regions of Canada. Dept. of Northern Affairs and Natural Resources. Forestry Branch Bull. 123. 71 p.

Forest Regions and Sections

Rowe's Regions are subdivided into Sections which are geographic areas with distinctive patterns of vegetation and physiography relative to other sections. The regions and sections applicable to British Columbia are:

Boreal Forest Region

Northern Foothills Section	B.19.b
Upper Liard Section	B.24
Stikine Plateau Section	B.25
Central Yukon Section	B.26.b

Subalpine Forest Region

East Slope Rockies Section	SA.1
Interior Subalpine Section	SA.2
Coastal Subalpine Section	SA.3

Montane Forest Region

Ponderosa Pine and Douglas fir Section	M.1
Central Douglas fir Section	M.2
Northern Aspen Section	M.3
Montane Transition Section	M.4

Coast Forest Region

Strait of Georgia Section	C.1
Southern Pacific Coast Section	C.2
Northern Pacific Coast Section	C.3
Queen Charlotte Islands Section	C.4

Columbia Forest Region

Southern Columbia Section	CL.1
Northern Columbia Section	CL.2

The boundaries of the forest sections are shown on the accompanying map. For the purposes of this report, the boundaries are meant only to indicate general limits for the zones of provenance. In certain detailed instances therefore, ecological conditions as described by Rowe may not correspond with forest zones and sections as mapped. Seed suppliers, with the help of C.F.S. personnel, will normally describe ecological conditions in collection areas as they actually exist. Consequently, the zones of provenance as stated

on certification documents might not always correspond to the regions and sections as determined by geographic coordinates on the map. Requests for clarification of particular cases may be made to the C.F.S.

Rowe's bulletin lists climatic data for representative stations within the sections; additional information is given in Appendix A.

Geographic Coordinates and Elevation

The Forest Sections are often large, and encompass a variety of environmental conditions. Additional information is needed to stratify them and thus relate seed source to possible geographic or climatic adaptation. Therefore, the location of seed source will be further described in terms of latitude, longitude and elevation.

For collection areas less than two miles square, latitude and longitude will be recorded to the nearest minute. For larger collection areas, the extremities of the ranges of latitude and longitude will also be recorded to the nearest minute.

Elevation will be recorded to the nearest 500 feet, unless the range exceeds 500 feet, in which case the upper and lower limits of elevation will be given to the nearest 100 feet.

In no case may the range of a seed source exceed one-quarter of a degree square or 1000 feet in elevation.

Origin

The origin of seed will be identified as either

- a) indigenous - collected from a stand of trees which has been continuously regenerated by natural regeneration, or one raised artificially from seed collected in an indigenous stand of the same region of provenance, or

- b) non-indigenous - collected from a stand which grew from seeds or plants that are introduced.

RULES

Rules and regulations under which the scheme was implemented in 1970 have been revised to provide greater assurance that the seeds have been collected, processed and distributed in a manner that ensures their trueness to name.

1. The C.F.S., as the Designated Authority, will issue Certificates of Provenance and labels in the forms shown in Appendices B and C, respectively, provided that it is satisfied as to the purity of the material, accuracy of the source information given, and the exporter's compliance with these rules. Assurance of the C.F.S. concerning these matters will be based on information provided by exporters, and inspections and audits of their operations and records.
2. The locations of the extraction plants and seed stores and the mailing and telephone addresses of the persons in charge must be registered with the C.F.S.
3. Collection must be so organized as to ensure trueness of source information. This requires that cones be picked by organized crews directly supervised at all times by a company representative. Cones not picked under continuous supervision of a representative of the company will not be certified.
4. Cones must be collected in locations and at times designated by the company representative. The number of collection sites will be limited to enable supervision of cone collecting by the company representative at all times throughout the collection period.

5. The number of collections that can be certified will depend on the time that is available for field inspection by C.F.S. inspectors. Companies should therefore indicate their intended collection sites in order of priority. The C.F.S. will then state which collection operations it can inspect.
6. At least three weeks before collection is to begin, the C.F.S. must be given the following information:
 - (a) Plans for the collection of seed for export, including
 - i. Names, addresses and telephone numbers of company field representatives.
 - ii. Location of each collection site, including local or place name.
 - iii. Alternative locations for areas listed in "ii".
 - iv. Order or priority of collection sites for inspection under the scheme.
 - v. Species, and proposed quantity of cones to be collected, by species.
 - vi. Approximate starting and completion dates for cone collection for each species.
 - vii. Procedures to be followed by cone collection crews and supervisors to ensure trueness of source information.
 - (b) Arrangements for storage of cones at field depots and transportation to processing plants.
 - (c) Location of processing plants to be used and proposed dates of extraction, cleaning, packaging and storage of the seed.
 - (d) Location of the seed stores to be used.
 - (e) Measures that will be used to ensure the maintenance of the identity of the seed at all stages.

(f) The system of records to be used.

7. When definite dates are determined for cone collection, the C.F.S. inspector must be advised.
8. The C.F.S. must be notified immediately of any changes in the aforementioned plans, procedures or dates.
9. A register must be maintained by the company to show for each seed lot all information required to complete the certificate, name of company field representative, location of processing plant and seed store used, quantities of cones collected, amounts of seed extracted and stored, dates and quantities of seed shipped, and names and addresses of consignees.
10. Company records concerning seed collection, processing, storage and shipment must be made available to the C.F.S. and its inspectors upon request.
11. Before Certificates of Provenance and labels can be issued, the exporter must make written application to the C.F.S. in the form shown in Appendix D. In this application, the exporter must declare that the seed is described and that it was collected and processed in compliance with the zones of provenance and rules that apply.
12. When there is more than one request for certification of seed from a single source, suffix letters will be used with the certificate reference number, e.g. CDN-0010-71 and CDN-0010(a)-71.
13. A separate Certificate of Provenance will be issued for each package of seed for each seed lot.
14. A Certificate of Provenance will not be issued once the seed has left Canada. For the purpose of certification, "seed" is defined as material of which at least 95% by weight is actual seed of the designated species.

15. Seed intended for export must be marketed in packages to which labels issued by the C.F.S. are affixed with a seal by the supplier. Each label will show the reference number of the relevant Certificate of Provenance and a duplicate label will be placed inside the package.
16. Once a certified seed lot has been packaged, sealed and labelled, the exporter may break the seal to enable seed to be supplied in smaller packages. However, all such actions must be recorded and the exporter must apply to the C.F.S. for amended Certificates of Provenance and labels for the smaller packages. Certificates and labels relating to such opened packages must be returned to the C.F.S. for cancellation as soon as the amended documents are received by the company.
17. If the C.F.S. becomes aware of any infringement of the rules under which the scheme operates, or if it is of the opinion that the exporter's operation does not ensure trueness to name of the seed to be certified, it may refuse to proceed with inspection or to issue Certificates of Provenance.
18. The operation and rules of this scheme in no way absolve participants or their agents or employees from compliance with Government of British Columbia regulations or other requirements as they pertain to forests and forest tree seed in the Province.
19. All correspondence with the C.F.S. concerning the scheme in B.C. will be directed to:

Director,
Pacific Forest Research Centre,
Canadian Forestry Service,
Department of the Environment,
506 West Burnside Road,
Victoria, British Columbia.

APPENDIX A

Selected Climatic Data for Forest Regions in British Columbia^{5/}

Region and Section	Station	Location			Temperature - °F					Precipitation - Inches			
		Lat. ° ' "	Long. ° ' "	Elev ft a.s.l.	Mean annual	July mean daily maximum	January mean daily minimum	Maximum annual	Minimum annual	Mean total annual	Mean rain annual	July mean rain	No. of days measurable rain
Boreal Region													
B.24	Fort Nelson	58 50	122 35	1230	30.0	73.9	-16.2	98	-61	17.13	10.36	2.56	59
B.25	Dease Lake	58 25	130 00	2678	30.3	67.5	-10.7	93	-60	15.25	8.67	2.13	66
	Telegraph Creek	57 54	131 10	600	36.2	72.2	- 3.3	92	-43	12.59	8.09	1.18	67
B.26.b	Atlin	59 34	133 42	2300	32.8	63.3	2.3	87	-54	10.95	6.61	1.17	-
Subalpine Region													
SA.2	Barkerville	53 04	121 31	4180	34.7	67.6	6.4	96	-52	45.25	22.64	3.78	97
	Glacier*	51 14	117 29	4094	36.2	71.8	8.4	98	-32	57.10	20.08	2.87	95
	Hedley*	49 21	120 05	1720	45.8	82.0	16.4	106	-27	11.09	7.86	0.91	71
	Kleena Kleene	51 59	124 56	2950	35.4	72.5	- 1.9	93	-58	13.57	7.62	0.90	54
	McCulloch	49 48	119 12	4100	36.4	73.4	6.0	98	-43	28.34	13.13	1.87	67
Montane Region													
M.1	Bralorne	50 47	122 49	3330	40.0	73.8	11.5	100	-33	25.86	15.66	1.17	56
	Golden*	51 18	116 58	2583	40.3	81.4	4.7	104	-51	18.45	10.36	1.24	40
	Greenwood	49 05	118 41	2490	42.5	84.5	11.5	110	-41	17.11	11.08	0.97	55
	Ashcroft R	50 43	121 20	1600	45.7	82.9	13.5	102	-35	9.47	6.27	0.63	55
	Westwold	50 28	119 45	2020	42.7	79.5	10.6	103	-50	13.75	10.13	1.11	85

^{5/} taken from: Anon 1967. Temperature and Precipitation tables for British Columbia. Canada
Dept. of Transport, Meteorological Branch

Data generally based on periods of 20 to 30 years

* Stations included in Rowe's listings, but entered here with more recent data

APPENDIX A (contd.)

Selected Climatic Data for Forest Regions in British Columbia

Region and Section	Station	Location			Temperature - °F					Precipitation - Inches			
		Lat. ° †	Long. ° †	Elev ft a.s.l.	Mean annual	July mean daily maximum	January mean daily minimum	Maximum annual	Minimum annual	Mean total annual	Mean rain annual	July mean rain	No. of days measurable rain
Montane Region (cont'd)													
M.2	Big Creek	51 44	123 02	3720	36.3	71.5	1.8	102	-53	12.63	7.73	1.25	35
M.3	Quesnel*	52 59	122 29	1600	40.7	75.6	6.3	105	-52	19.72	14.00	2.22	80
M.4	Prince George	53 53	122 41	2218	38.0	72.0	3.0	94	-58	24.67	16.71	2.53	97
	Smithers A	54 49	127 11	1718	38.1	69.7	7.3	93	-47	20.27	12.94	1.86	95
	Vanderhoof	54 03	124 08	2210	36.2	72.2	1.5	104	-61	16.89	10.17	1.49	66
	Wistaria	53 49	126 10	2865	36.7	68.1	5.5	97	-47	17.82	9.85	1.68	75
Coast Region													
C.1	Comox	49 43	124 54	93	48.8	73.6	31.8	94	- 6	46.73	42.80	1.02	152
	Duncan	48 47	123 43	28	50.9	78.5	30.2	106	- 5	41.15	38.81	0.98	140
	Nanaimo A	49 03	123 52	104	48.2	75.9	29.7	98	0	41.41	38.33	0.96	145
	Powell River	49 53	124 34	176	51.2	74.7	33.9	93	6	37.25	35.63	1.40	139
	Victoria*	48 25	123 19	228	50.2	68.0	35.8	95	6	27.41	26.26	0.57	138
C.2	Alice Arm	55 41	129 30	1031	40.1	68.3	19.2	93	-13	80.05	50.96	2.77	152
	Britannia Beach*	49 37	123 12	160	50.1	74.3	31.3	103	- 7	78.58	75.91	2.26	164
	Campbell River	50 01	125 18	250	-	-	-	-	-	58.55	54.79	1.30	115
	Cowichan L. For.	48 49	124 08	580	48.1	75.3	30.5	97	0	82.72	75.63	1.29	156
	Port Alberni*	49 14	124 48	195	48.8	76.6	30.1	106	- 7	74.49	71.01	1.44	135

APPENDIX A (contd.)

Selected Climatic Data for Forest Regions in British Columbia

Region and Section	Station	Location			Temperature - °F					Precipitation - Inches			
		Lat. ° ' "	Long. ° ' "	Elev ft a.s.l.	Mean annual	July mean daily maximum	January mean daily minimum	Maximum annual	Minimum annual	Mean total annual	Mean rain annual	July mean rain	No. of days measurable rain
Coast Region (cont'd)													
C.3	Bamfield	48 50	125 06	70	-	-	-	-	-	107.10	106.07	2.63	159
	Cape Scott	50 47	128 26	235	46.1	60.8	33.7	85	9	116.00	114.70	1.80	-
	Namu	51 52	127 52	85	-	-	-	-	-	107.37	105.08	4.14	179
	Tofino	49 05	125 46	80	48.5	65.3	35.8	91	17	125.83	124.95	3.69	-
C.4	Masset	54 02	132 08	10	46.3	63.6	31.0	84	- 2	56.27	54.09	2.69	210
	Sandspit	53 15	131 49	25	46.4	62.2	32.1	80	7	49.56	46.53	1.85	194
Columbia Region													
CL.1	Fernie	49 30	115 03	3305	40.0	77.3	9.0	97	-40	41.43	27.11	1.49	95
	Kimberley	49 44	115 47	3016	40.5	80.9	8.2	99	-40	15.03	9.06	0.73	64
	Nelson*	49 30	117 17	1980	46.9	83.3	21.8	103	-17	28.62	20.03	1.23	88
CL.2	Dome Creek	53 45	121 10	2200	39.8	77.6	4.8	108	-56	29.83	19.55	3.16	88
	Horsefly Lake	52 23	121 17	2585	39.6	73.8	6.2	92	-48	27.72	19.81	2.62	74
	McBride	53 18	120 10	2360	40.0	76.1	8.2	100	-50	21.31	12.88	1.78	89
	Revelstoke*	51 00	118 12	1497	44.2	81.0	17.1	105	-30	42.54	26.37	2.00	130

APPENDIX B

CERTIFICATE OF PROVENANCE

issued in accordance with the O.E.C.D. Scheme for Forest Reproductive Material

Country _____ Reference No. _____

It is certified that the forest reproductive material described below has been produced in accordance with the O.E.C.D. Scheme for Forest Reproductive Material.

1. Category of reproductive material: _____ Source-Identified _____
2. Nature of produce: _____ Seed _____
3. Genus, species, sub-species
(a) Common name _____
(b) Botanical name (1) _____
4. Place or Zone of Provenance: Forest Region and Section (2) _____
Latitude from _____ to _____
Longitude " _____ to _____
Elevation " _____ ft to _____ ft
5. Origin: Indigenous _____ Unknown _____ Introduced from _____
6. Year of ripening of seed: _____
7. Weight of seed: _____
8. Remarks: _____

Name and Address of Designated Authority:

(Stamp of Designated Authority)

Signature: _____

- (1) Nomenclature as in Hosie, R.C. 1970. Native Trees of Canada. 7th Edition. Date: _____
Canadian Forestry Service, Dept. of Fisheries and Forestry.
- (2) Forest Regions and Sections from:
Rowe, J.S. 1959. Forest Regions of Canada. Dept. of Northern Affairs and Natural Resources. Forestry Branch Bull. 123. 71 p.

APPENDIX C

LABEL to be used in accordance with the
O.E.C.D. Scheme for Forest Reproductive Material

OBVERSE SIDE

<p>SPECIES (BOTANICAL NAME) _____</p> <p>SUBSPECIES, VARIETY OR CULTIVAR NAME _____</p> <p>CATEGORY _____ Weight _____</p> <p>○ CERTIFICATE NUMBER _____</p> <p>PLACE OR ZONE OF PROVENANCE _____</p> <p>LATITUDE FROM _____ TO _____</p> <p>LONGITUDE FROM _____ TO _____</p> <p>ELEVATION FROM _____ ft. TO _____ ft.</p>	<p>O. E. C. D. SCHEME FOR FOREST REPRODUCTIVE MATERIAL</p>
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REVERSE SIDE

<p>DESIGNATED AUTHORITY</p> <p>○ REGIONAL DIRECTOR CANADIAN FORESTRY SERVICE 506 WEST BURNSIDE ROAD VICTORIA, BRITISH COLUMBIA CANADA</p> <p>Warning: Certification not valid unless label is fastened to container by unbroken seal and there is a duplicate lable inside the container</p>	<p>SYSTEME O. C. D. E. POUR DES MATERIELS FORESTIERS DE REPRODUCTION</p>
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Color: Both sides shall be yellow with the
free end overprinted black for a
distance of 3 cm.

APPENDIX D

To: Director,
Pacific Forest Research Centre,
Canadian Forestry Service,
506 West Burnside Road,
Victoria, British Columbia.







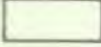
Request for Certification of Source-Identified Forest Tree Seed.

1. Genus, species, sub-species _____
2. Zone of Provenance: Forest Region and Section _____
Latitude from _____ to _____
Longitude " _____ to _____
Elevation " _____ ft to _____ ft
3. Local or Place Name _____
4. Origin:
Indigenous _____ Unknown _____ Introduced from _____
5. Year of ripening of seed _____
6. Number and weights of packages _____
7. Company field representative _____
Location of: Seed processing plant _____
Storage plant _____
8. Exporter's stock number _____
9. I _____ certify that this seed is described and has been collected and processed in compliance with the rules and the zones of provenance that apply to the O.E.C.D. Scheme.
Name of Exporting Firm _____
Signature _____
Date _____

Forest Regions and Sections of British Columbia



Forest Regions

BOREAL		COAST		GRASSLAND	
SUBALPINE		COLUMBIA			
MONTANE		TUNDRA			Forest sections indicated by numbers ③