

*Status of Old-Growth Red Pine Forests:
A Preliminary Assessment*

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The purpose of this preliminary report is to address the current status of old-growth red pine forest given the information currently available. Information provided by forest experts from a total of 19 political jurisdictions in Canada and the United States that coincide with the natural range of red pine forest was used. In addition, it was estimated (from Burns and Honkala (1990)) that the size of the range of red pine is approximately 40% less than the size of the range of eastern white pine. It was also estimated, using pollen data from Gordon (1990), that within its natural range, presettlement red pine abundance was only 50% of that for presettlement eastern white pine.

To estimate the amount of original old-growth red pine area, (1) the area of original old-growth eastern white pine (from Quinby (1993)) was reduced by 40% from 6 million hectares to 3.6 million hectares to reflect the range size difference between red and eastern white pine, and (2) the 3.6 million hectare figure was reduced by 50% to reflect the lesser abundance of red pine relative to eastern white pine resulting in an estimate of 1.8 million hectares of original old-growth red pine forest in eastern North America.

Based on the survey of forest experts, a total of 10,417 hectares of old-growth red pine forest remains in eastern North America (see Tables 1 and 2). It is likely, however, that additional unidentified stands exist, primarily in Ontario. To account for these unidentified stands, the estimate of 10,417 hectares was doubled to an estimate of 20,834 hectares which is 1.2 percent of the estimated amount of original old-growth red pine forest. According to Noss et al. (1995), this old-growth red pine forest ecosystem is critically endangered (<2% remaining).

Table 1. Old-Growth Red Pine (*Pinus resinosa*) Forest in Canada and the United States

<i>POLITICAL JURISDICTION</i>	<i>RESERVE NAME</i>	<i>PROTECTION STATUS*</i>	<i>LOCATION</i>	<i>SIZE (HA)</i>
CANADA				
Manitoba	none			
New Brunswick	none			
Newfoundland	Birchy Narrows	Unprotected	Sheffield Lake Map Sheet	1
	Charles Arm	Unprotected	Point Leamington Map Sheet	5
	David Smallwood Provincial Park	Protected	Gambo Map Sheet	5
	Exploits River	Unprotected	Botwood Map Sheet	1
	Georges Pond	Unprotected	Glovertown Map Sheet	20
	Grants Siding Development Area	Protected	Glovertown Map Sheet	400
	Howley	Unprotected	Deer Lake Map Sheet	15
	Mint Brook	Unprotected	Glovertown Map Sheet	1
	Old Stand	Unprotected	Sheffield Lake Map Sheet	1
	Overflow Brook	Unprotected	Noel Paul's Brook Map Sheet	100
	Rowells Brook Ecological Reserve	Protected	Sringdale Map Sheet	200
	Strong Island Sound	Unprotected	Point Leamington Map Sheet	5
	Sandy Lake 1	Unprotected	Deer Lake Map Sheet	20
	Sandy Lake 2	Unprotected	Deer Lake Map Sheet	5
	Sandy Lake 3	Unprotected	Deer Lake Map Sheet	5
	Sandy Lake 4	Unprotected	The Topsails Map Sheet	5
	Sandy Lake 5	Unprotected	The Topsails Map Sheet	5
	Sandy Lake 6	Unprotected	The Topsails Map Sheet	5
	Sandy Lake 7	Unprotected	The Topsails Map Sheet	10
	Terra Nova 1	Unprotected	Glovertown Map Sheet	2
	Terra Nova 2	Unprotected	Port Blandford Map Sheet	50
	Traytown	Unprotected	Eastport Map Sheet	5
Nova Scotia	none			
Ontario	Dickson Lake Hemlock Nature Reser	Protected	Algonquin Provincial Park	28
	Island Bay Red Pine	Unprotected	Phyllis Township	32
	Lahay Lake Red Pine	Unprotected	Delhi Township	37
	Lake Lavielle Red Pine Nature Reser	Protected	Algonquin Provincial Park	92
	many stands	Unprotected	Lower Spanish Forest	1000**
	Narrows Island Red Pine	Protected	Phyllis Township	40
	North Fowel Lake Nature Reserve	Protected	LaVerendrye Provincial Park	25
	Opeongo Red Pine Nature Reserve	Protected	Algonquin Provincial Park	230
	Rabbit Lake Old Growth	Protected	Riddell Township	473
	Shiningwood Bay Red Pine	Unprotected	Phyllis Township	62
	Turtle Lake Red Pine	Unprotected	Strathcona Township	78

	Wolf Lake Red Pine	Unprotected	Mackelcan Township	1600
Prince Edward Island	Murray River Pines Natural Area	Protected		4
Quebec	none			
UNITED STATES				
Connecticut	none			
Illinois	none			
Maine	Baker Pond	Unprotected	Somerset County	2
	Cathedral Pines	Protected	Franklin County	88
	Cliff Ridge Red Pine	Unprotected	Piscataquis County	3
	First Debsconeag Lake	Unprotected	Piscataquis County	2
	Gassabias Lake A	Protected	Hancock County	14
	Gassabias Lake B	Protected	Hancock County	4
	Lobster Lake Big Island	Protected	Piscataquis County	8
	Norways	Unprotected	Somerset County	18
	Number 5 Bog	Protected	Somerset County	10
	The Pines (Sysiadobsis Lake)	Unprotected	Washington County	2
	Pocomoonshine Lake	Unprotected	Washington County	3
Massachusetts	none			
Michigan	Crawford Red Pines	Protected	Crawford County	7
	Roscommon Red Pines	Protected	Roscommon County	64
Minnesota	Burntside Island Sci. & Nat. Area	Protected	St. Louis County	5
	Eagles Nest Lake No. 4 Island Sci. Natural Area	Protected	St. Louis County	2
	Itasca Wilderness Sanctuary Sci. and Natural Area	Protected	Itasca State Park	60
	Lac La Croix Research Natural Area	Protected	Superior National Forest	83
	Lost 40 Pine Stand	Protected	Chippewa National Forest	26
	Pine Point Research Natural Area	Protected	Chippewa National Forest	190
	many stands (146)	Protected	Itasca State Park	mean= 9
	many stands (23)	Unprotected	state lands	mean= 11
	many stands (148)	Protected	Boundary Waters Canoe Area Wilderness	mean= 24
New Hampshire	none			
New Jersey	none			
New York	none			
Pennsylvania	few stands (4)	Unprotected	Tioga County	mean= 10
Rhode Island	none	Protected	Addison County	40
Vermont	Battell Biological Preserve	Protected	Addison County	16
	Bristol Cliffs	Unprotected	Addison County	10
	Deer Leap	Unprotected	Addison County	8

	Herrick Mountain	Unprotected	Rutland County	2
	Pinneo Ridge	Unprotected	Chittenden County	2
	Prospect Rock	Unprotected	Lamoille County	2
	Roy Mountain	Protected	Caledonia County	15
	Spectacle Pond Natural Area	Protected	Essex County	6
	Willard Mountain Red Pine Forest	Unprotected	Essex County	1
Wisconsin	none			
West Virginia	none			

Table 2. Status of Old-Growth Red Pine (Pinus resinosa) Forest in Canada and the United States (all areas in ha)

<i>Political Jurisdiction</i>	<i>no. of stands</i>	<i>mean total area</i>	<i>stand area</i>	<i>stand area range</i>	<i>area protected</i>	<i>% protected of total</i>	<i>ecological status</i>
Canada							
Manitoba	0	0	-	-	0	0	Extirpated
New Brunswick	0	0	-	-	0	0	Extirpated
Newfoundland	22	866	39	1-400	605	70	Endangered
Nova Scotia	0	0	-	-	0	0	Extirpated
Ontario	12+	3697	308	25-1600	833	22	Endangered
Prince Edward Island	1	4	4	-	4	100	Endangered
Quebec	0	0	-	-	0	0	Extirpated
United States							
Connecticut	0	0	-	-	0	0	Extirpated
Illinois	0	0	-	-	0	0	Extirpated
Maine	11	154	14	2-88	124	81	Endangered
Massachusetts	0	0	-	-	0	0	Extirpated
Michigan	2	71	36	7-64	71	100	Endangered
Minnesota	323	5485	17	2-190	5232	95	Endangered
New Hampshire	0	0	-	-	0	0	Extirpated
New Jersey	0	0	-	-	0	0	Extirpated
New York	0	0	-	-	0	0	Extirpated
Pennsylvania	4	40	10	10	0	0	Endangered
Rhode Island	0	0	-	-	0	0	Extirpated
Vermont	9	100	11	1-40	77	77	Endangered
Wisconsin	0	0	-	-	0	0	Extirpated
West Virginia	0	0	-	-	0	0	Extirpated
Total	384	10417	27	1-1600	6946	67	Endangered

% Remaining = 20,834/1,800,000 = 1.2%

References

- Brackley, F. 1990. Personal Communication (phone conversation on December 13, 1990). New Hampshire Natural Heritage Inventory, Department of Resource and Economic Development, Concord, New Hampshire.
- Breden, T. 1990. Personal Communication (phone conversation on December 14, 1990). New Jersey Natural Heritage Program, Office of Natural Lands Management, Trenton, New Jersey.
- Brown, J. L. 1990. Personal Communication (letter dated October 19, 1990 and phone conversation on December 13, 1990). Division de R-D en ecologie et rendement des forets, Service de la recherche appliquee, Ministere de l'Energie, Gov't. du Quebec, Charlesbourg, Quebec.
- Buhnerkempe, J. E. 1989. Personal Communication (letter dated October 31, 1989). Division of Natural Heritage, Department of Conservation, Chicago, Illinois.
- Burns, R. M. and B. H. Honkala. 1990. *Silvics of North America: Vol. 1, Conifers*. United States Department of Agriculture, Forest Service, Agric. Handbook 654. U.S. Forest Service, Timber Management Research, Wash. D.C.
- Chapman, K. A. 1990. Personal Communication (letter dated June 11, 1990). Midwest Regional Office, The Nature Conservancy, Minneapolis, Minnesota.
- Clarke, K. M. 1990. Personal Communication (letter dated December 18, 1990). New Hampshire Natural Heritage Inventory, Department of Resources and Economic Development, Concord, New Hampshire.
- Conkling, P. W. 1978. Old-Growth White Pine (*Pinus strobus* L.) Stands in Maine and their Relevance to the Critical Areas Program. Planning Report No. 61, Maine Critical Areas Program, State Planning Office, Augusta, Maine.
- Crins, W. J. and S. Darbyshire. 1977. Life Science Inventory Check Sheets for Algonquin Park. Ontario Ministry of Natural Resources, Parks and Recreation Areas Branch, Queen's Park, Toronto, Ontario.
- Enser, R. 1989. Personal Communication (letter dated October 19, 1989). Rhode Island Natural Heritage Program, Department of Environmental Management, Division of Planning and Management, Providence, Rhode Island.
- Engstrom, B. 1990. Personal Communication (phone conversation on December 11, 1990). Consulting Ecologist, Marshfield, Vermont.

- Epstein, E. 1991. Personal Communication (phone conversation on April 5, 1991). Wisconsin Natural Heritage Inventory, Bureau of Ecological Resources, Department of Natural Resources, Madison, Wisconsin.
- Erdman, K. S. and P. G. Wiegman. 1974. Preliminary list of Natural Areas in Pennsylvania. Western Pennsylvania Nature Conservancy, Pittsburgh, Pennsylvania.
- Fitton, M. 1991. Personal Communication (letter dated April 4, 1991). Ministry of Natural Resources and Energy, Fredericton, New Brunswick.
- Gordon, D. 1990. *Prehistoric Occupations at Temagami, In: Temagami: A Debate on Wilderness*. Dundurn Press, Toronto, Ont. pp. 153-183.
- Griffin, D. 1989. Personal Communication (letter dated November 16, 1989). Island Nature Trust, Charlottetown, Prince Edward Island.
- Harmon, P. J. 1990. Personal Communication (letter dated February 2, 1990). Natural Heritage Program, Wildlife Resources Division, Department of Natural Resources, Elkins, West Virginia.
- Hentcy, E. E. 1989. Personal Communication (letter dated October 23, 1989). New Hampshire Natural Heritage Inventory, Department of Resource and Economic Development, Concord, New Hampshire.
- Heinselman, B. 1991. Personal Communication (letter dated January 13, 1991). Research Scientist, St. Paul, Minnesota.
- Hodgins, B. W. and J. Benedickson. 1989. *The Temagami Experience*. University of Toronto Press, Toronto. 370 pp.
- Horne, F. 1990. Personal Communication (letter dated August 2, 1990). Island Nature Trust, Charlottetown, Prince Edward Island.
- Iles, N. 1990. Reconnaissance Inventory to Locate Old White and/or Red Pine Stands in Site Region 4E of the Ontario Ministry of Natural Resources, Northeastern Regional Office, Sudbury, Ontario.
- Lash, J. 1990. Personal Communication (phone conversation December 11, 1990 and letter dated January 14, 1991). Department of Environmental Management, Boston, Massachusetts.
- Lynds, A. 1990. Personal Communication (phone conversation December 11, 1990). Parks Division, Department of Lands and Forests, Belmont, Nova Scotia.

- Maine Critical Areas Program. 1983. Natural Old-Growth Forest Stands in Maine and their Relevance to the Critical Areas Program. Planning Report No. 79, Maine Critical Areas Program, State Planning Office, Augusta, Maine.
- Marshall, E. 1989. Personal Communication (letter dated December 5, 1989). Vermont Natural Heritage Program, Department of Fish and Wildlife, Agency of Natural Resources, Waterbury, Vermont.
- Mather, V. 1997. Personal Communication (phone conversation Nov. 27, 1997), Sudbury Naturalists, Sudbury, Ontario.
- Metzler, K. 1990. Personal Communication (phone conversation December 14, 1990). Connecticut Natural Diversity Database, Department of Environmental Protection, Hartford, Connecticut.
- Noss, R. F., E. T. LaRoe III, and J. M. Scott. 1995. *Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation*. Biological Report 28, U.S. Dept. Interior, National Biological Service, Washington, D.C. 58 pp.
- Pennsylvania Department of Environmental Resources. 1983. Pennsylvania State Forest Natural Areas and Wild Areas. Penn. Dept. Env. Res., Harrisburgh, Penn.
- Peruniak, S. 1991. Personal Communication (phone conversation on March 7, 1991; letter dated April 4, 1991). Quetico Provincial Park, Atikokan, Ontario.
- Pinette, R. J. and J. P. Rowe. 1988. Natural Old-Growth Forests in Northern Maine. Planning Report No. 87, Maine Critical Areas Program, State Planning Office, Augusta, Maine.
- Pinto, F. 1989. White and Red Pine (121+Years) Stand Data for Ontario. Ministry of Natural Resources, Central Ontario Forest Technology Development Unit, North Bay, Ontario. 250 pp.
- Quinby, P. A. 1993. Old-Growth Eastern White Pine Forest: An Endangered Ecosystem. *Forest Landscape Baselines* No. 2, Ancient Forest Exploration & Research, Toronto, Ontario.
- Reese, G. 1990. Personal Communication (letter dated January 10, 1990). Michigan Natural Features Inventory, Lansing, Michigan.
- Reschke, C. 1991. Personal Communication (letter dated March 28, 1991). New York Natural Heritage Program, Department of Environmental Conservation, Latham, New York.
- Reschke, C. 1989. Personal Communication (letter dated November 16, 1989). New York Natural

Heritage Program, Department of Environmental Conservation, Latham, New York.

Roberts, B. A. 1990. Personal Communication (phone conversation December 12, 1990). Forest Ecology Section, Forestry Canada, Newfoundland and Labrador Region, St. John's, Newfoundland.

Roberts, B. A. 1989. Personal Communication (letter dated December 11, 1989). Forest Ecology Section, Forestry Canada, Newfoundland and Labrador Region, St. John's, Newfoundland.

Rusterholz, K. A. 1990. Personal Communication (phone conversation on November 15, 1990). Minnesota Natural Heritage Program, Department of Natural Resources, St. Paul, Minnesota.

Rusterholz, K. A. 1989. Personal Communication (letter dated November 7, 1989). Minnesota Natural Heritage Program, Department of Natural Resources, St. Paul, Minnesota.

Smith, T. 1989. Personal Communication (letter dated December 22, 1989). Pennsylvania Science Office, The Nature Conservancy, Middletown, Penn.

Stiell, W. M. 1990. Personal Communication (letter dated September 14, 1990). Petawawa National Forestry Institute, Chalk River, Ontario.

Swain, P. 1989. Personal Communication (letter dated October 23, 1989). Massachusetts Natural Heritage Program, Division of Fisheries and Wildlife, Boston, Massachusetts.

Thomasson, R. D. 1990. Personal Communication (letter dated March 20, 1990). Land Use Planning; Communication, Economics and Planning; Ministry of Natural Resources; Winnipeg, Manitoba.

Tyler, H. 1990. Personal Communication (phone conversation on March 6, 1990). Critical Areas Program, State Planning Office, Augusta, Maine.

Vora, R. 1991. Personal Communication (phone conversation on March 27, 1991). Chequamon National Forest, Park Falls, Wisconsin.

White, D. 1990. An Assessment of Representative and Special Life Science Resource Features of the Temagami Planning Area. Consulting Report prepared for the Ministry of Natural Resources, Sudbury and Temagami, Ontario Districts. 252 pp.