



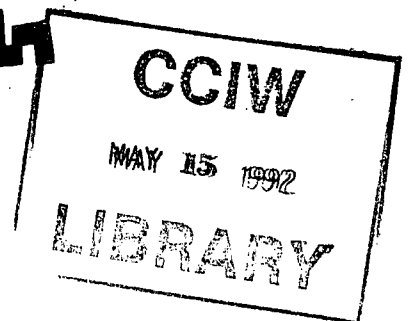
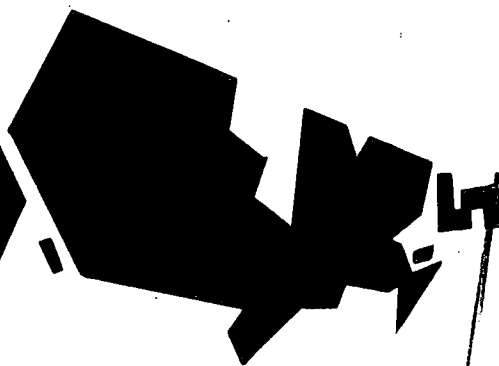
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THE CANADA LAND INVENTORY



LAND CAPABILITY FOR RECREATION

SUMMARY REPORT

The Canada Land Inventory

Report No. 14

1978

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THE CANADA LAND INVENTORY

Report No. 14 — October, 1978

LAND CAPABILITY FOR RECREATION

SUMMARY REPORT

**by
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Environment Canada
Ottawa, Ontario.**

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PREFACE

Demands on Canada's land resource are ever increasing. In the process of allocating land to satisfy these demands and to meet people's needs, complex decisions are required. As a basis for effective decisions, a great deal of information must be available concerning the land resource.

The Canada Land Inventory (CLI), through the Canada Geographic Information System (CGIS), can provide information regarding land capability for agriculture, forestry, recreation and wildlife, and present land use.

This report is a summary of selected CLI recreation capability data. The type of information presented exemplifies the many types of summaries that can be compiled from CLI data and processed through the CGIS. It is hoped that the use of data from all sectors of the CLI will aid in the process of effectively planning land to meet the growing and diverse needs of Canadians.

R.J. McCormack
Director General
Lands Directorate

LAND CAPABILITY FOR RECREATION

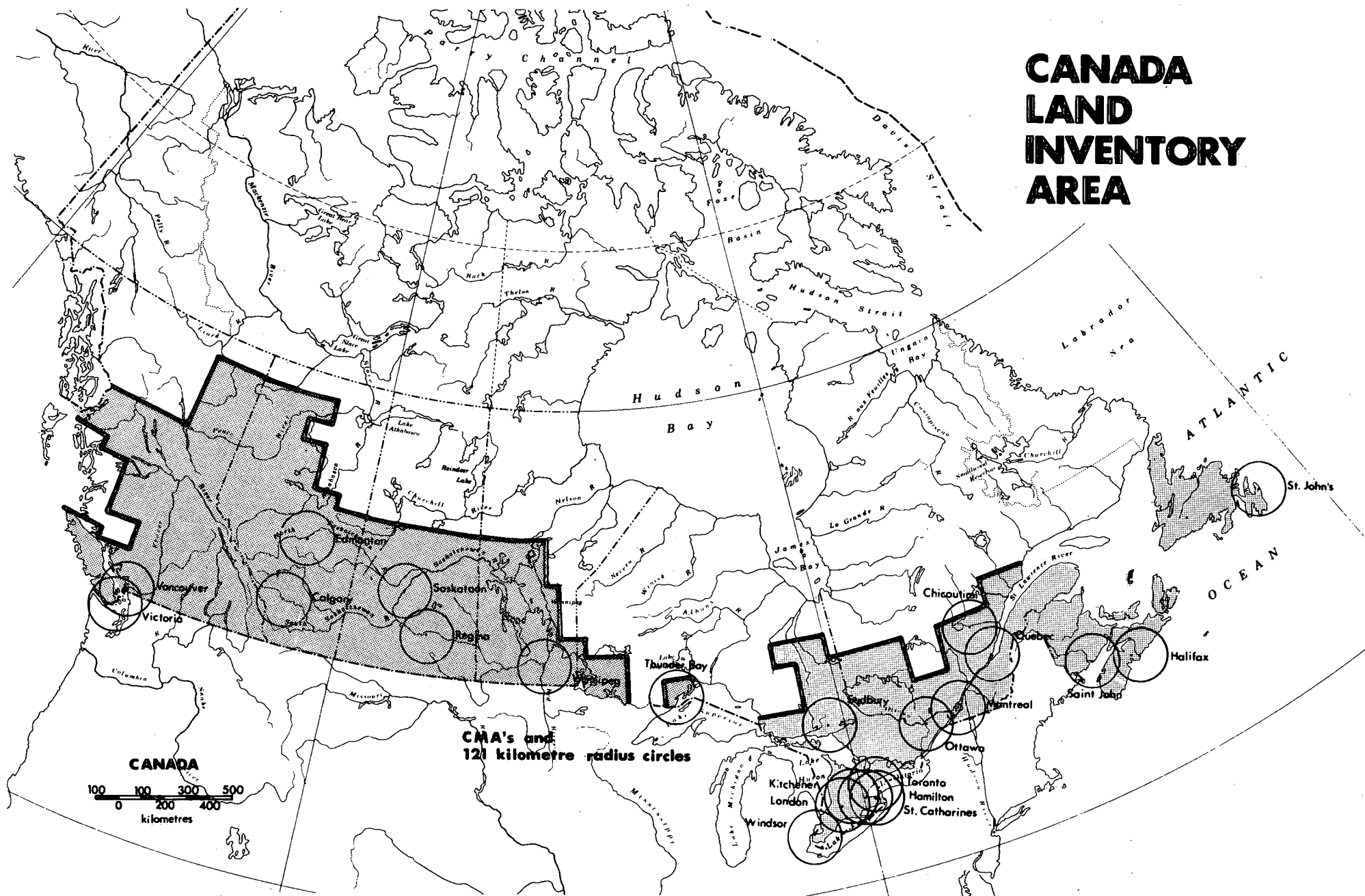
Facts from Figures

Under the Canada Land Inventory (CLI) program, approximately 570,000 kilometres of shoreline that lie within the 2.5 million square kilometre inventory area were classified for recreation capability. Only 0.3%, or 1600 kilometres were assessed as Class 1 - the highest capability rank. The distribution of this Class 1 shoreline varies among the provinces; Prince Edward Island has 313 kilometres whereas New Brunswick has only 24. These differences affect the amount and type of recreation opportunities available in each province, which in turn influence the allocation of land for recreation and other uses.

Shoreline in the first three classes is considered to have high capability for recreation. In the inventoried area, over 85 000 kilometres of shoreline fall into Classes 1 to 3; however, the distribution of these higher capability shorelines is such that many major population centres are far removed from the resource. For example, within 121 kilometres of urban centres, a day-use travel zone, the amounts of higher capability shoreline vary substantially. Vancouver, Toronto and Saskatoon have approximately 2100, 500 and 80 kilometres respectively.

The preceding is an example of the kinds of information that can be obtained from the CLI through the Canada Geographic Information System (CGIS). Data describing some aspects of the CLI recreation sector are presented in this report but represent only a few examples of the broad information potential of the CLI when it is used in conjunction with the CGIS. The data highlight national information and indicate some of the implications for land use planning. It should be noted, however, that there are many other applications for the CLI recreation data. In a more thorough analysis of a resource allocation problem, the other CLI sector information and additional data types can be used to assist in the preparation and evaluation of land use plans and policies.

CANADA LAND INVENTORY AREA



A Bit of History

The CLI began in 1963 as a cooperative federal-provincial program. Its purpose was to assess and document the physical capability and use of the land that lies within the settled parts of Canada. The inventory encompasses an area of approximately 2.5 million square kilometres and includes the Island of Newfoundland, the Maritime Provinces and the settled parts of Quebec, Ontario and the Western Provinces (Map 1). Factors of climate, topography and soils restrict the capability of areas outside the CLI boundary to attract and sustain intensive recreation use. Particular features in those areas may have high recreation capability, but they are not considered in this report.

In its entirety the CLI program involves mapping and assessing land for agriculture capability, forestry capability, recreation capability, wildlife (waterfowl and ungulates) capability, and present land use. Each province has classified its land according to a national classification system that was prepared jointly by the provincial and federal government departments responsible for resource development. The recreation capability data were derived in part from existing surveys pertaining to soils and geology, but mainly from the interpretation of aerial photography supplemented by selected field investigations.

An Innovation and How It Works

To facilitate use of the data for land use planning and resource studies, a computerized data bank and analytical system were developed as part of the CLI program. This system, known as the Canada Geographic Information System, permits CLI and other data to be transformed to numeric data for analysis. In addition to CLI data, certain other types of complementary data have also been included in the basic data set. At present, ten sets of information are available for use in the system. These include all six CLI coverages, plus four other coverages: shoreline-waterbody, watersheds, census enumeration and administrative areas. In this report, three of the data sets are used: the CLI recreation capability set provides information concerning class, subclass and areal extent; the shoreline-waterbody set provides the linear shoreline distance; and the administrative areas set provides a

provincial breakdown. An appendix describing the premises that were used to develop the system as well as the definitions of the classes and subclasses, is included to facilitate understanding of the classification system. The use of other data sets along with those of the CLI enable the planner, manager or researcher to analyse potential land use conflicts and evaluate alternative plans for allocating land in response to demands for recreation, forestry, agriculture and wildlife.

The information and related implications derived from the following tables concentrate on one aspect of the CLI recreation capability data - the shoreline. The problems presently confronting planners and managers in dealing with the recreation resource are often related to the shoreline areas. They include providing facilities for day use, determining carrying capacity for the development of shorelines, and resolving conflicts between private and public developments.

Recreation Land — Amount and Distribution

Only 0.05% of the total area inventoried has Class 1 capability for recreation; 2.38% has Class 1, 2 or 3 capability. This latter figure represents 5.8 million hectares or approximately the combined land area of Nova Scotia and Prince Edward Island (Tables 1 and 2). In comparison, the combined total of areas with moderate and low capability (Classes 4,5,6 and 7) is equivalent to all of the land area inventoried in British Columbia, the three Prairie Provinces, Ontario, Quebec, New Brunswick and the Island of Newfoundland.

The limited amount and unequal distribution of higher capability land create several types of problems. For those regions with minimal amounts of high capability land, each site can be extremely important in the provision of local recreation opportunity and therefore lower capability sites become significant in meeting demands. Regions with concentrations of high capability land face other types of problems such as tourist demands and the economic and social costs and benefits that are directly related to these demands.



Fig. 1: Cavendish Beach, on Prince Edward Island, is rated 1S*BLK because it is suitable for beach activities and organized camping, and has unique landforms (sand dunes). The rocky shoreland in the background has a lower rating 2S*VRK, because the shoreline is less usable; it is, however, suitable for general viewing and organized camping, and has interesting rock formations.



Fig. 2: This beach at Trout River Bay, Newfoundland would be rated Class 1 except that it is moderately exposed and the water is very cold. It is rated 3S*PBQ — for cultural landscape pattern, beach activities and topographic diversity.

Shoreline Length — Amount and Distribution

Since many of the outdoor recreation activities popular in Canada today are associated with shoreline areas, shoreline length can provide a good indication of the potential of the recreation resource. As indicated previously, only 0.3% of the total shoreline inventoried has Class 1 capability and only 15% or 85,000 kilometres is ranked in the first three capability classes (Table 3).

The distribution of higher capability shoreline varies across Canada, and with it the problems and the resource conflicts. Some further observations on the patterns of distribution can be used to illustrate the potential problems and conflicts in the land use allocation process.

Significant Subclasses

The higher capability classes of shoreline are dominated by three subclasses. Shoreline ranked with the first subclass identified as either bathing, lodging or access to family boating, accounts for 78.8% of all shoreline of Classes 1 to 3 capability; however, there is considerable variation in the importance of these subclasses among regions and provinces. For example, only 34% of British Columbia's higher capability shoreline is described by these three subclasses. Shoreline ranked with the first subclasses identified as angling, camping, deep-water boating, viewing or wetland wildlife, account for 64% of the remaining shoreline. On the other hand, over 95% of Ontario's higher capability shoreline is included in the first subclasses of bathing, lodging and access to family boating (Table 4).

The significance of the provincial differences is already recognized by agencies in their planning processes. Areas, for example, that may lack shoreline suitable for bathing activities can emphasize other activities by providing access for boating, encouraging viewing of scenery, fish or wildlife, or establishing ski facilities. The subclass information is very useful in identifying a regional focus for recreation opportunity. Additional information derived from the second and third subclasses can also be used, but much more care must be taken in its interpretation. The diversity of land types, and thus the possibilities for different recreation activities, is in itself a significant recreation resource for Canada.

Access

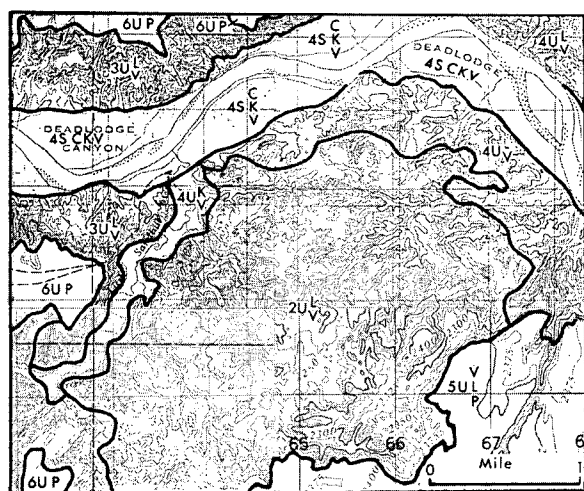
The amount of high capability shoreline that lies within easy access of the major population centres of Canada is an important factor in the provision of recreation opportunities. Within 161 kilometres of the centre of each of the 22 Census Metropolitan Areas (1971), 0.43% or 987 kilometres of shoreline are ranked as Class 1 and 17.3% or 40,000 kilometres as Classes 1, 2 and 3. It is interesting to note that of all Class 1 shoreline inventoried in Canada (1600 kilometres), over one-half, 987 kilometres is located within 161 kilometres of the 22 CMAs. This figure might suggest that a reasonable supply of this high capability shoreline is accessible to the major population centres. There is however considerable variation; Ottawa has over 150 kilometres of Class 1 shoreline within 161 kilometres of its centre whereas Saint John, New Brunswick and Chicoutimi, Quebec have no Class 1 shoreline within the same 161-kilometre radius (Table 5).

Day Use

Within a radius of 121 kilometres around each CMA, a "day-use zone" for recreation, the amount of shoreline that is associated with the first subclasses of bathing, lodging and access to family boating also varies considerably across Canada. The Ottawa-Hull CMA has the greatest amount of Class 1 bathing shoreline - 78 kilometres. Combining Class 1, 2 and 3 shorelines and the three selected first subclasses, the following cities have the greatest amounts of shoreline; Sudbury (4307 kilometres), Ottawa-Hull (3277), Montreal (1387) and Quebec City (1271). When the same combination is applied to cities with more limited shoreline, the result is 52 kilometres for Calgary and 54 for Saskatoon. For each centre, the planning required to supply day use recreation opportunities varies with the demands and the resources available for recreation (Tables 6 and 7).



Fig. 3: Dinosaur Park, near Brooks, Alberta, ranks 2U*LV. Badland and hoodoo features are concentrated in the area, which is widely known for its abundant dinosaur fossils. The topographic variety here, and the many opportunities for viewing, justify the subordinate V.



*The letters S and U immediately following the class rating were designated to distinguish between shoreland (S) and upland (U) units on 1:50,000 maps for computer input. Thus, they do not indicate subclasses.

Regional Differences in Capability Classes

On a regional basis, there are important disparities in the distribution of high capability shorelines. For example, although the Prairie region has over 26% of the shoreline that was inventoried in all of Canada, only 6.5% of it is ranked in the higher capability classes. In contrast, the Central region has 42.4% of the national total of shoreline inventoried but 21.3% is ranked in Classes 1, 2 and 3. Regional variations in the quality of shoreline influence the types of land use planning problems that occur in different regions of Canada (Table 8).

Regional Concentrations

The better recreation shorelines are often concentrated in a few specific areas. For example, in Prince Edward Island, a very significant concentration of Class 1 shoreline has been ranked for bathing - 313 kilometres or 77% of the Atlantic region total (Table 4). Similar concentrations occur in various locations across Canada. These concentrations of high capability sites often include a mixture of subclasses and as such they offer a variety of opportunities. Areas such as the Qu'Appelle Valley in Saskatchewan, although not offering large amounts of high capability shoreline, do provide a variety of opportunities and an important local focus for the resident population.

These types of regional concentrations have both positive and negative effects. They can provide an excellent base for the tourism industry but they also create problems in the allocation of the resource to various user groups. In the case of Prince Edward Island, the demand for highly attractive shoreline for private cottaging by non-residents could far exceed the supply, thus diminishing the suitability of the area for other types of tourism or local resident use of the recreation resources.

Although a great deal of information can be derived from the recreation sector of the CLI through the use of the CGIS, more thorough analyses of land use planning problems will require the inclusion of other CLI sector information plus a variety of additional data. The selected results and interpretations provided here are but an example of the information available.

The Lands Directorate, and more specifically the Canada Land Data System Division (CLDS)/CGIS, provides, at cost, user services that include analysis and interpretation of land data. The CLDS/CGIS can utilize all of the Canada Land Inventory coverages, census data and other information of particular interest to a user. Analyses may be conducted according to political boundaries, physical regions or special project areas, such as a transportation corridor. For further information contact:

Chief
Canada Land Data System Division
CLDS /CGIS
Lands Directorate
Environment Canada
Ottawa, Ontario
K1A 0E7



Fig. 4: These falls on Sukunka Creek, near Dawson Creek, British Columbia, are rated 2U*FVA — for the attractive waterfalls and the opportunities for viewing and angling. The hills in the background have a lower rating, 5U*OQV, because the recreation opportunities there are more extensive and general.

TABLES

TABLE 1

CLI RECREATION CAPABILITY

Coverage of Canada by Province

Province	Total Land Area (1)		CLI Recreation Capability Coverage (2)	CLI Capability Coverage as a % of Total Land Area
	(sq. kilometres)	(hectares)	(hectares)	(%)
Newfoundland	370,472	37,040,644	10,164,542	27.5
Prince Edward Island	5,630	562,893	561,838	99.8
Nova Scotia	52,961	5,295,084	5,291,405	99.8
New Brunswick	71,448	7,143,493	7,138,202	99.9
Quebec	1,356,745	135,650,404	28,694,624	21.2
Ontario	891,164	89,100,559	27,527,757	30.9
Manitoba	548,476	54,837,866	21,631,355	39.5
Saskatchewan	570,249	57,104,807	36,996,939	64.8
Alberta	644,367	64,425,267	48,052,466	74.6
British Columbia	930,497	93,033,141	60,014,501	64.5
Yukon	531,826	53,173,115	- - (3)	--
Northwest Territories	3,246,279	324,570,249	- - (3)	--
CANADA	9,220,114	921,847,524	246,073,629	26.7

(1) Areas of provinces were taken from the Canada Year Book 1974, except for P.E.I., N.S. and N.B. where CLI data were used.

(2) Figures for all CLI recreation coverage Classes 1-7 and unclassified land areas within CLI boundaries are taken from provincial data available to February 1977. This constitutes the complete coverage for this sector of CLI.

The area of coverage for this sector of the CLI does not always correspond to the area of coverage for other sectors such as agriculture. Differences in total land area and the area of available coverage are due to variation in the area inventoried for each sector or to variation in the mechanical measurement and totalling of the areas.

(3) The Yukon and Northwest Territories are not covered by the CLI

Note: The data were originally compiled in English units. These were converted to metric units as: 1 sq. mile = 2.5899 sq. kilometres and 1 acre = 0.4047 hectares, 1 sq. kilometre = 0.3861 sq. miles, and 1 hectare = 2.471 acres

TABLE 2

CLI RECREATION CAPABILITY

Land Area by Capability Class and Province

Province	1	2	3	4	5	6	7	Unclassified Land Within CLI Area	Provincial Totals
	(hectares)								
Newfoundland	6,083	74,035	518,381	876,359	3,568,969	4,764,818	273,312	82,585	10,164,542
Prince Edward Island	10,811	6,952	50,698	56,577	111,885	278,772	41,022	5,121	561,838
Nova Scotia	639	11,103	63,389	315,924	1,135,313	3,158,395	429,886	176,756	5,291,405
New Brunswick	930	23,962	112,624	34,004	2,587,164	3,368,522	538,907	159,089	7,138,202
Quebec	38,248	245,005	1,474,800	2,384,394	7,101,426	16,792,329	571,407	86,935	28,694,624
Ontario	41,004	123,890	1,248,974	3,841,605	5,485,047	15,582,556	932,022	272,659	27,527,757
Manitoba	2,294	19,890	156,756	960,679	3,331,637	10,619,122	2,824,189	2,716,788	21,631,355
Saskatchewan	7,269	15,687	242,024	1,165,193	9,042,761	24,341,366	1,548,782	633,857	36,966,939
Alberta	5,344	27,663	126,807	2,771,534	22,426,927	19,461,612	1,056,645	2,175,934	48,052,466
British Columbia	18,612	161,339	1,028,429	4,731,590	13,944,559	36,269,084	3,286,814	574,074	60,014,501
CANADA	131,234	709,526	5,022,962	17,450,859	68,735,688	134,636,576	12,502,986	6,883,798	246,073,629
% of Total Area	.05	.29	2.04	7.09	27.93	54.71	5.08	2.30	100.00

(1 hectare = 2.471054 acres)

TABLE 3

CLI RECREATION CAPABILITY

Shoreline Length by Capability Class and Province

Province	1	2	3	4	5	6	7	Unclassified Shoreline Within CLI Area	Provincial Totals
	(kilometres)								
Newfoundland	90	887	5,422	11,218	19,668	25,542	2,700	890	66,417
Prince Edward Island	313	178	812	382	430	244	116	49	2,524
Nova Scotia	32	265	1,140	5,467	7,417	7,428	1,489	800	24,038
New Brunswick	24	149	1,673	3,911	2,576	1,494	937	246	11,010
Quebec	258	2,220	24,649	36,547	27,237	17,780	831	559	110,081
Ontario	333	1,896	22,371	63,671	30,792	12,128	479	991	132,661
Manitoba	54	484	3,293	10,250	17,190	9,863	4,903	14,217	60,254
Saskatchewan	81	210	3,708	9,131	14,799	10,059	1,054	1,262	40,304
Alberta	76	220	1,518	13,912	24,694	6,377	527	1,624	48,948
British Columbia	347	1,782	10,698	26,055	26,927	6,843	1,956	867	75,475
CANADA	1,608	8,291	75,284	180,544	171,730	97,758	14,992	21,505	571,712
% of Total Shoreline	.28	1.45	13.17	31.58	30.04	17.10	2.62	3.76	100.00

(1 kilometre = .6213712 miles)

TABLE 4

CLI RECREATION CAPABILITY

Inventoried Shoreline in Classes 1-3, First Subclasses as
"Bathing", "Lodging", or "Access to Family Boating", by Province

Province	Class	Total Class Length	Subclasses ⁽¹⁾			Total Length for Subclasses	Total Sub- classes as a % of Total Class Length
			Bathing	Lodging	Access to Family Boating		
(kilometres)							
Newfoundland	1	90	35	-	30	65	72.2
	2	887	210	188	179	577	65.7
	3	5,422	1,252	650	608	2,510	46.2
	Total	6,399	1,497	838	817	3,152	49.3
Prince Edward Island	1	313	313	-	-	313	100.0
	2	178	128	13	19	160	89.8
	3	812	106	157	434	697	85.8
	Total	1,303	547	170	453	1,170	89.8
Nova Scotia	1	32	30	-	-	30	93.7
	2	265	262	-	-	262	98.8
	3	1,140	549	439	14	1,002	87.8
	Total	1,437	841	439	14	1,294	87.8
New Brunswick	1	24	24	-	-	24	100.0
	2	149	124	7	-	131	87.9
	3	1,673	306	853	50	1,209	72.2
	Total	1,846	454	860	50	1,364	73.9
Quebec	1	258	252	-	-	252	97.6
	2	2,220	1,921	184	1	2,106	94.8
	3	24,649	1,682	21,303	13	22,998	93.3
	Total	27,127	3,855	21,487	14	25,356	96.5
Ontario	1	333	319	-	-	319	95.7
	2	1,896	1,139	448	8	1,595	84.1
	3	22,371	2,222	19,348	31	21,601	96.5
	Total	24,600	3,670	19,796	39	23,515	95.6
Manitoba	1	54	52	-	1	53	98.1
	2	484	303	38	-	341	70.4
	3	3,293	424	1,147	61	1,632	49.5
	Total	3,831	779	1,185	62	2,026	52.9

TABLE 4 (cont'd)

CLI RECREATION CAPABILITY

Inventoried Shoreline in Classes 1-3, First Subclasses as
"Bathing", "Lodging", or "Access to Family Boating", by Province

Province	Class	Total Class Length	Subclasses (1)			Total Length for Subclasses	Total Sub- classes as a % of Total Class Length
			Bathing	Lodging	Access to Family Boating		
			(Kilometres)				
Saskatchewan	1	81	81	-	-	81	100.0
	2	209	195	3	-	198	94.7
	3	3,708	354	2,985	113	3,452	93.0
	Total	3,998	630	2,988	113	3,731	93.3
Alberta	1	76	76	-	-	76	100.0
	2	220	138	9	2	149	67.7
	3	1,518	196	587	77	860	56.6
	Total	1,814	410	596	79	1,085	59.8
British Columbia	1	346	243	-	-	243	70.3
	2	1,782	345	51	-	396	22.3
	3	10,698	497	2,962	316	3,775	35.3
	Total	12,826	1,085	3,013	316	4,414	34.4
CANADA	1	1,607	1,425	-	31	1,456	90.6
	2	8,290	4,765	941	209	5,915	71.4
	3	75,284	7,588	50,431	1,717	59,736	79.4
	Total	3,998	630	2,988	113	3,731	93.3

(1) For the majority of the provinces these three subclasses represent the greatest proportion of high capability shorelines. In some provinces such as British Columbia, other subclasses have predominated as is indicated in the following table.

British Columbia

Selected Subclasses	% of Total Shoreline in each Class		
	Class 1	Class 2	Class 3
Angling	0.4	3.1	17.0
Camping	6.3	19.5	20.6
Deep-water Boating	18.2	14.6	6.5
Viewing	3.2	13.2	7.7
Wetland Wildlife	0.0	20.6	4.4
TOTAL	28.3	71.0	56.2

TABLE 5

CLI RECREATION CAPABILITY

Inventoried Shoreline by Class for Those Areas
within 40, 80, 121 and 161 kilometres
of the Centre of All Census Metropolitan Areas.

Census Metropolitan Area	(1) Radii km (approx.)	Classes								(2)
		1	2	3	4	5	6	7	8	
		(kilometres)								
St. John's (Nfld.)	40	-	14	15	129	156	597	26	83	
	80	-	34	84	438	1,421	2,890	146	175	
	121	8	59	378	1,259	3,028	4,388	415	264	
	161	10	93	610	1,790	3,948	6,596	536	645	
Halifax	40	-	8	140	535	618	745	116	151	
	80	-	19	297	1,156	1,605	2,140	206	169	
	121	-	29	433	2,002	2,842	3,392	507	190	
	161	-	134	621	2,881	4,425	4,792	1,025	551	
Saint John (N.B.)	40	-	24	132	380	314	314	47	79	
	80	-	41	265	804	1,192	839	178	105	
	121	-	44	515	1,883	2,268	1,941	458	305	
	161	-	58	848	3,637	4,069	3,409	1,116	494	
Chicoutimi	40	-	14	168	247	551	487	45	16	
	80	-	29	561	1,134	2,199	2,653	95	32	
	121	-	48	1,057	2,186	4,021	5,497	219	16	
	161	-	74	2,509	3,841	6,417	7,950	286	72	
Montreal	40	5	22	287	279	181	25	39	148	
	80	7	77	824	857	525	73	62	203	
	121	12	253	1,785	2,060	1,596	439	88	228	
	161	51	510	3,427	4,004	3,206	1,014	158	292	
Quebec	40	-	26	87	218	227	198	6	67	
	80	2	50	519	923	999	564	33	98	
	121	14	123	1,355	2,358	2,362	1,536	89	158	
	161	25	219	2,670	4,334	4,331	2,775	142	185	
Hamilton	40	-	-	3	37	194	6	-	100	
	80	4	47	54	196	554	38	3	271	
	121	33	114	111	317	721	53	3	327	
	161	75	148	251	690	1,054	127	3	368	
Kitchener	40	-	2	1	12	197	19	-	62	
	80	-	2	7	101	463	38	3	178	
	121	53	104	122	363	865	91	3	222	
	161	110	192	432	939	1,144	159	3	285	
London	40	2	-	5	10	105	7	-	10	
	80	37	10	30	94	291	17	3	26	
	121	63	215	171	287	723	30	3	143	
	161	72	328	254	496	892	80	3	234	
Ottawa	40	9	15	127	408	182	79	44	89	
	80	22	126	725	1,716	1,530	315	64	108	
	121	80	471	3,076	4,716	3,683	1,151	91	147	
	161	157	806	5,628	8,063	6,246	2,049	130	314	
St. Catharines	40	2	24	34	117	121	4	1	70	
	80	2	30	45	166	270	7	1	236	
	121	22	106	95	266	556	47	3	290	
	161	36	149	236	617	871	71	3	341	
Sudbury	40	5	14	164	1,395	535	370	24	40	
	80	8	77	1,325	7,350	3,143	1,147	38	47	
	121	24	221	4,181	13,599	6,981	2,433	72	70	
	161	47	457	7,692	19,574	10,601	3,719	96	113	

TABLE 5 (Cont'd.)

Census Metropolitan Area	(1) Radii km (approx.)	Classes								(2)
		1	2	3	4	5	6	7	8	
		(Kilometres)								
(3)										
Thunder Bay	40	-	38	183	514	120	68	3	68	
	80	-	47	590	1,517	545	132	3	68	
	121	-	47	656	1,752	582	150	3	69	
Toronto	40	-	-	9	10	8	7	-	106	
	80	14	28	79	212	234	22	-	234	
	121	45	93	370	779	949	88	-	359	
	161	85	251	1,353	3,045	2,267	522	34	403	
Windsor	40	-	44	24	32	16	15	16	53	
	80	25	228	145	133	104	16	16	69	
	121	38	234	180	174	134	16	16	83	
	161	67	238	186	203	172	17	16	83	
Winnipeg	40	-	4	22	169	113	1	-	114	
	80	-	39	641	539	341	55	31	116	
	121	14	112	1,177	1,113	947	237	69	121	
	161	19	197	1,930	3,023	2,779	1,025	249	124	
Regina	40	-	-	-	156	163	21	-	-	
	80	4	19	203	72	61	96	-	-	
	121	5	19	285	283	624	351	-	1	
	161	5	33	365	434	1,30	1,157	-	2	
Saskatoon	40	-	1	9	26	390	291	-	31	
	80	-	6	10	227	1,063	714	-	31	
	121	-	12	69	658	2,118	1,278	-	32	
	161	9	14	188	1,440	3,543	1,757	-	43	
Calgary	40	-	-	-	156	163	21	-	90	
	80	-	1	10	596	452	74	-	90	
	121	4	59	132	1,090	829	180	-	219	
	161	5	77	310	2,048	1,888	578	2	391	
Edmonton	40	-	4	10	400	203	13	-	21	
	80	10	14	176	1,239	912	147	-	89	
	121	10	14	265	2,398	2,766	904	18	90	
	161	13	43	383	3,687	6,312	1,684	20	100	
Vancouver	40	-	192	101	264	199	4	2	232	
	80	60	370	913	1,146	674	34	64	291	
	121	69	456	1,558	2,351	1,369	139	108	418	
	161	99	521	2,036	3,421	2,452	254	108	483	
Victoria	40	13	41	232	215	62	6	-	92	
	80	33	240	508	486	185	35	-	124	
	121	40	368	826	1,010	478	52	-	378	
	161	84	460	1,494	2,280	1,416	88	64	410	
(4)										
TOTALS	40	36	487	1,757	5,553	4,680	3,296	369	1,722	
	80	228	1,534	8,011	21,102	18,763	12,046	946	2,760	
	121	534	3,401	18,779	42,949	40,442	24,393	2,180	4,130	
	161	987	5,049	33,979	72,199	69,925	39,973	3,997	6,002	
Shoreline length by Class as a percentage of total shoreline (%) for areas within 161 kilometres of CMA centres		.43	2.18	14.64	31.11	30.13	17.22	1.72	2.59	

1. The 40, 80, 121 and 161 kilometre radii convert to 25, 50, 75 and 100 mile radii
2. Unclassified lands may include lands committed to intensive urban use lying within municipalities of over 1,000 population, military reserves, national parks, etc.
3. Thunder Bay is situated such that some of the area beyond the 40 kilometre radius is outside the CLI area. No coverage at all is available beyond the 121 kilometre radius.
4. These totals do not consider the fact that there is an overlap between CMA's; for example, the overlaps in area coverage among Toronto, Hamilton, Kitchener, St. Catharines, London and Windsor.

TABLE 6

CLI RECREATION CAPABILITY

Inventoried Shoreline in Classes 1-3 with First Subclasses as
 "Bathing", "Lodging" or "Access to Family Boating"
 within 121 Kilometres of the Centre of all Census Metropolitan Areas

Census Metropolitan Areas	Class	Total Class Length	Subclasses			Total Length for Subclasses	Total Sub- classes as a % of Total Class Length
			Bathing	Lodging	Access to Family Boating		
			(kilometres)				
St. John's Newfoundland	1	8	-	-	-	-	-
	2	59	7	15	-	22	37.3
	3	378	122	68	3	193	51.1
	Total	445	129	83	3	215	48.3
Halifax	1	-	-	-	-	-	-
	2	29	28	-	-	28	96.6
	3	433	85	297	4	386	89.1
	Total	462	113	297	4	414	89.6
Saint John (N.B.)	1	-	-	-	-	-	-
	2	44	29	-	-	29	65.9
	3	515	77	218	30	325	63.1
	Total	559	106	218	30	354	63.3
Chicoutimi	1	-	-	-	-	-	-
	2	48	19	-	-	19	39.6
	3	1,057	123	804	10	937	88.6
	Total	1,105	142	804	10	956	86.5
Montreal	1	12	10	-	-	10	83.3
	2	253	196	9	-	205	81.0
	3	1,785	143	1,028	1	1,172	65.7
	Total	2,050	349	1,037	1	1,387	67.7
Quebec	1	14	14	-	-	14	100.0
	2	123	39	56	-	95	77.2
	3	1,355	116	1,046	-	1,162	85.8
	Total	1,492	169	1,102	-	1,271	85.2
Hamilton	1	33	31	-	-	31	93.9
	2	114	74	-	-	74	64.9
	3	111	36	8	-	44	39.6
	Total	258	141	8	-	149	57.8
Kitchener	1	53	52	-	-	52	98.1
	2	104	67	-	-	67	64.4
	3	122	55	6	2	63	51.6
	Total	279	174	6	2	182	65.2
London	1	63	61	-	-	61	96.8
	2	215	57	-	-	57	26.5
	3	171	51	1	-	52	30.4
	Total	449	169	1	-	170	37.9

TABLE 6 (cont'd)

CLI RECREATION CAPABILITY

Inventoried Shoreline in Classes 1-3 with First Subclasses as
 "Bathing", "Lodging" or "Access to Family Boating"
 within 121 Kilometres of the Centre of all Census Metropolitan Areas

Census Metropolitan Areas	Class	Total Class Length	Subclasses			Total Length for Subclasses	Total Sub- classes as a % of Total Class Length
			Bathing	Lodging	Access to Family Boating		
			(kilometres)				
Ottawa-Hull	1	80	78	-	-	78	90.0
	2	471	427	11	-	438	93.0
	3	3,076	107	2,649	5	2,761	89.8
	Total	3,627	612	2,660	5	3,277	90.4
St. Catharines	1	22	22	-	-	22	100.0
	2	106	69	-	-	69	65.1
	3	95	34	-	4	38	40.0
	Total	223	125	-	4	129	57.8
Sudbury	1	24	24	-	-	24	100.0
	2	221	135	64	-	199	90.0
	3	4,181	275	3,805	4	4,084	97.7
	Total	4,426	434	3,869	4	4,307	97.3
Thunder Bay	1	-	-	-	-	-	-
	2	47	17	6	-	23	48.9
	3	656	87	506	2	595	90.7
	Total	703	104	512	2	618	87.9
Toronto	1	45	42	-	-	42	93.3
	2	93	79	1	2	82	88.1
	3	370	106	230	5	341	92.1
	Total	508	227	231	7	465	91.5
Windsor	1	38	38	-	-	38	100.0
	2	234	63	-	-	63	26.9
	3	180	97	1	1	99	55.0
	Total	452	198	1	1	200	44.2
Winnipeg	1	14	14	-	-	14	100.0
	2	112	92	-	-	92	82.1
	3	1,177	49	137	48	234	19.9
	Total	1,303	155	137	48	340	26.1
Regina	1	5	5	-	-	5	100.0
	2	19	19	-	-	19	100.0
	3	285	70	138	21	229	80.4
	Total	309	94	138	21	253	81.9
Saskatoon	1	-	-	-	-	-	-
	2	12	2	-	-	2	16.7
	3	69	11	41	-	52	75.4
	Total	81	13	41	-	54	66.7

TABLE 6 (cont'd)

CLI RECREATION CAPABILITY

Inventoried Shoreline in Classes 1-3 with First Subclasses as
 "Bathing", "Lodging", or "Access to Family Boating"
 within 121 Kilometres of the Centre of all Census Metropolitan Areas

Census Metropolitan Area	Class	Total Class Length	Subclasses			Total Length For Subclasses	Total Sub- classes as a % of Total Class Length
			Bathing	Lodging	Access to Family Boating		
			(kilometres)				
Calgary	1	4	-	-	-	-	-
	2	59	-	-	-	-	-
	3	132	1	50	1	52	39.4
	Total	195	1	50	1	52	26.7
Edmonton	1	10	10	-	-	10	100.0
	2	14	12	-	-	12	85.7
	3	265	38	81	16	135	50.9
	Total	289	60	81	16	157	54.3
Vancouver	1	69	11	-	-	11	15.9
	2	456	34	17	-	51	11.2
	3	1,558	49	496	3	548	35.2
	Total	2,083	94	513	3	610	29.3
Victoria	1	40	7	-	-	7	17.5
	2	368	4	15	-	19	5.2
	3	826	33	275	8	316	38.3
	Total	1,226	44	290	8	342	27.9
TOTALS	1	534	419	-	-	419	78.5
	2	3,201	1,469	194	2	1,665	52.0
	3	18,779	1,765	11,885	168	13,818	73.0
	TOTAL	22,514	3,653	12,079	170	15,902	70.6

(1) The 121 kilometre (75 mile) radius was selected as a day use zone. This type of selection represents one form of summary that can be generated by CGIS.

TABLE 7

CLI RECREATION CAPABILITY

Shorelines of High and Moderate Capability
within 121 Kilometres of the Centre of All
Census Metropolitan Areas with Population
and Population Densities Indicated

Census Metropolitan Area	Population (000's)	Population Density of CMA (Pop./sq. Km)	Shoreline Length High Moderate (Classes 1, (Classes 2 and 3) 4 and 5)	
	(1971 Census)		(kilometres)	
St. John's (Nfld.)	132	157	445	4,288
Halifax	223	321	462	4,843
Saint John (N.B.)	107	72	559	4,151
Chicoutimi	134	317	1,105	6,207
Montreal	2,743	1,026	2,050	3,656
Quebec	481	530	1,492	4,720
Hamilton	449	439	258	1,091
Kitchener	277	400	279	1,228
London	286	158	449	1,010
Ottawa-Hull	603	317	3,627	8,443
St. Catharines	303	298	224	822
Sudbury	155	102	4,426	20,579
Thunder Bay	112	167	704	2,334
Toronto	2,628	724	507	1,728
Windsor	259	315	452	308
Winnipeg	540	775	1,303	1,060
Regina	141	168	309	907
Saskatoon	126	1,336	80	2,776
Calgary	403	999	194	1,918
Edmonton	496	129	290	5,163
Vancouver	1,082	389	2,083	3,721
Victoria	196	401	1,234	1,488

(1) The 121 kilometre (75 mile) radius was selected to represent a day use zone.

TABLE 8

CLI RECREATION CAPABILITY

Variation in the Amount of Inventoried
Shoreline in Classes 1-3, by Region

(1) Region	Total Shoreline (Km)	(2) Total Shoreline in Region as a % of Total Shoreline in Canada	Shoreline in Classes 1-3 (Km)	Shoreline in Classes 1-3 as a % of Total Shoreline in Region	Shoreline in Classes 1-3 as a % of Shoreline in Canada in Classes 1-3
Atlantic	103,989	18.1	10,985	10.5	12.9
Central	242,742	42.4	51,727	21.3	60.7
Prairie	149,506	26.1	9,644	6.5	11.3
British Columbia	75,475	13.2	12,827	17.0	15.1
CANADA	571,712	100.0	85,183	14.9	100.0

- (1) Atlantic: Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick
 Central: Quebec and Ontario
 Prairie: Manitoba, Saskatchewan and Alberta

- (2) The shoreline in this table refers only to the shoreline encompassed by the CLI program.

TABLE 9

CLI RECREATION CAPABILITY

Unclassified Areas within the CLI Area by Province

Province Area (1)	NFLD.	P.E.I.	N.S.	N.B.	QUEBEC	ONTARIO	MANITOBA	SASK.	ALBERTA	B.C.	CANADA
	(hectares)										
Urban (2)	30,584	5,030	38,038	40,212	83,012	268,710	25,949	29,236	72,138	123,384	725,293
Provincial Parks	0	0	0	0	0	0	0	78	0	0	78
National Parks	39,077	0	133,136	0	0	0	0	363,580	1,847,128	433,434	2,816,355
Water Areas (3)	1,500	92	1,577	152	3,419	2,685	1,292	1,498	1,092	1,187	14,494
Unmapped (4)	2,425	0	4,005	118,725	504	1,264	2,689,547	239,466	255,576	16,068	3,327,580
Totals (5)	82,585	5,121	176,756	159,089	86,935	272,659	2,716,788	633,857	2,175,934	74,074	6,683,800

(1) The definition of each of these areas and the inventory methodology may vary from province to province and for each sector of the CLI.

(2) Lands firmly committed to intensive urban use or lying within municipalities of over 1,000 population. These areas do not always correspond to urban areas delineated by the other sectors of the CLI.

(3) These areas are the result of the differences in the drafting of shoreline for the two Canada Geographic Information System coverages (recreation capability and shoreline length) that were necessary in preparing the data for this report.

(4) These areas may include parks, military reserves, urban areas etc., according to the method used by each province for reporting. They may also include all those lands outside the CLI boundaries but within the 1:250,000 N.T.S. sheets' boundaries.

(5) Differences in totals are a result of rounding.

APPENDIX

Summary of Land Capability Classification for Recreation¹

Seven classes of land are differentiated on the basis of the intensity of outdoor recreational use, or the quantity of outdoor recreation which may be generated and sustained per unit area of land per annum under perfect market conditions.

"Quantity" may be measured by visitor days, a visitor day being any reasonable portion of a 24 hour period during which an individual person uses a unit of land for recreation.

"Perfect market conditions" implies uniform demand and accessibility for all areas, which means that location relative to population centres and to present access do not affect the classification.

"Intensive and dispersed activities" are recognized. "Intensive activities" are those in which relatively large numbers of people may be accommodated per unit area, while "dispersed activities" are those which normally require a relatively larger area per person.

Important factors affecting the classification are:

- The purpose of the inventory is to provide a reliable assessment of the quality, quantity and distribution of the natural recreation resources within the settled parts of Canada.
- The inventory is essentially reconnaissance in nature, based on the interpretation of aerial photographs, field checks and available records. The finished maps should be interpreted accordingly.
- The inventory classification is designed in accordance with present popular preferences in non-urban outdoor recreation. Urban areas (generally over 1,000 population with permanent urban character), as well as some non-urban industrial areas, are not classified.
- Land is ranked according to its natural capability under existing conditions, whether in natural or modified state. But no assumptions are made concerning its capability if it is given further major artificial modifications.
- Sound recreation land management and development practices are assumed for all areas in practical relation to the natural capability of each area.
- Water bodies are not directly classified. Their recreational values accrue to the adjoining shoreland or land unit.
- Opportunities for recreation afforded by the presence in an area of wildlife and sports fish are indicated in instances where reliable information was available. But the ranking does not reflect the biological productivity of the area; wildlife capability is indicated in a companion series of maps.

¹ This summary explanation is taken from "The Canada Land Inventory - Objectives, Scope and Organization: Report No. 1 Second Edition 1970". Department of Regional Economic Expansion.

Classes

1 - LANDS IN THIS CLASS HAVE VERY HIGH CAPABILITY FOR OUTDOOR RECREATION

Class 1 lands have natural capability to engender and sustain very high annual use based on one or more recreational activities of an intensive nature. Class 1 land units should be able to generate and sustain a level of use comparable to that evident at an outstanding and large bathing beach or a nationally known ski slope.

2 - LANDS IN THIS CLASS HAVE A HIGH CAPABILITY FOR OUTDOOR RECREATION

Class 2 lands have natural capability to engender and sustain high annual use based on one or more recreational activities of an intensive nature.

3 - LANDS IN THIS CLASS HAVE A MODERATELY HIGH CAPABILITY FOR OUTDOOR RECREATION

Class 3 lands have natural capability to engender and sustain moderately high annual use based usually on intensive or moderately intensive activities.

4 - LANDS IN THIS CLASS HAVE MODERATE CAPABILITY FOR OUTDOOR RECREATION

Class 4 lands have natural capability to engender and sustain moderate annual use based usually on dispersed activities.

5 - LANDS IN THIS CLASS HAVE MODERATELY LOW CAPABILITY FOR OUTDOOR RECREATION

Class 5 lands have natural capability to engender and sustain a moderately low total annual use based on dispersed activities.

6 - LANDS IN THIS CLASS HAVE LOW CAPABILITY FOR OUTDOOR RECREATION

Class 6 lands lack the natural quality and significant features to rate higher, but have the natural capability to engender and sustain low annual use based on dispersed activities.

7 - LANDS IN THIS CLASS HAVE VERY LOW CAPABILITY FOR OUTDOOR RECREATION

Class 7 lands have practically no capability for any popular types of recreation activity, but there may be some capability for very specialized activities with recreation aspects, or they may simply provide open space.

Subclasses

Subclasses indicate the kinds of features which provide opportunity for recreation. They are, therefore, positive aspects of land and do not indicate limitations to use. Features may be omitted from a unit, either because of the imposed three-feature limit, or because their presence was unknown or unconfirmed.

The degree to which these features are judged capable, collectively of generating and sustaining use for recreation determines the class. The sequence in which they are listed indicates the order of their significance. Subordinate features may be relatively insignificant and the class of a unit should not be interpreted to indicate the capability of a second or third use.

The subclasses are:

- A - land providing access to water affording opportunity for angling or viewing of sports fish;
- B - shoreland capable of supporting family beach activities. In high class units this includes family bathing. In Classes 4 and 5, the activities

- may preclude bathing due to water temperature or other limitations;
- C - land fronting on and providing direct access to waterways with significant capability for canoe tripping;
 - D - shoreland with deeper inshore water suitable for swimming, or boat mooring, or launching;
 - E - land with vegetation possessing recreational value;
 - F - waterfall or rapids;
 - G - significant glacier view or similar experience;
 - H - historic or pre-historic site;
 - J - area offering particular opportunities for gathering and collecting items of popular interest;
 - K - shoreland or upland suited to organized camping. This subclass is usually associated with other features;
 - L - interesting landform features other than rock formations;
 - M - frequent small water bodies, or continuous streams occurring in upland areas;
 - N - land(usually shoreland)suited to family or other recreation lodging use;
 - O - land which affords an opportunity for viewing of upland wildlife;
 - P - areas exhibiting cultural landscape patterns of agricultural, industrial or social interest;
 - Q - areas exhibiting variety, in topography or land and water relationships, which enhances opportunities for general outdoor recreation such as hiking and nature study or for aesthetic appreciation of the area;
 - R - interesting rock formations;
 - S - a combination of slopes, snow conditions and climate providing downhill skiing opportunities;
 - T - thermal springs;
 - U - shoreland fronting water accommodating yachting or deep water boat tripping;
 - V - a vantage point or area which offers a superior view relative to the class of the unit(s) which contain it, or a corridor or other area which provides frequent viewing opportunities;
 - W - land affording opportunity for viewing of wetland wildlife;
 - X - miscellaneous features with recreational capability;
 - Y - shoreland providing access to water suitable for popular forms of family boating;
 - Z - areas exhibiting major, permanent, non-urban man-made structures of recreational interest.

CANADA LAND INVENTORY PUBLICATIONS

- Report No. 1 Objectives, Scope and Organization
66 pp. Revised 1970. Reprinted 1972.
- Report No. 2 Soil Capability Classification for Agriculture
16 pp. Reprinted 1972.
- Report No. 3 The Climates of Canada for Agriculture (being
reprinted) 24 pp. 19 maps. 1966.
- Report No. 4 Land Capability Classification for Forestry
(2nd Edition) 36 pp. Revised 1970. Reprinted
1972.
- Report No. 5 The Economics of Plantation Forestry in
Southern Ontario. D.V. Love and
J.R.M. Williams. 46 pp. 1968.
- Report No. 6 Land Capability Classification for Outdoor Recreation
70 photographs, 2 map examples. 110 pp. 1970.
- Report No. 7 Land Capability Classification for Wildlife
Half-tone, stereo and colour, illustrations
29 pp. 1970. Reprinted 1973.
- Report No. 8 Soil Capability for Agriculture in Nova Scotia
Maps and tables. 45 pp. 1970.
- Report No. 9 Landowners and Land Use in the Tantramar area
New Brunswick. 195 pp. 1968.
- Report No. 10 Land Capability for Agriculture, Preliminary
Report. 27 pp. 1976.
- Report No. 11 Agricultural Land and Urban Centres.
E.W. Manning and J.D. McCuaig. 16pp. 1977
- Report No. 12 The Canada Land Inventory in Perspective.
W.E. Rees. 40 pp. 1977.
- Report No. 13 Computer Processing of Landsat Data for Canada
Land Inventory Land Use Mapping.
J. Schubert. 72 pp. 1978.

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