

**COSEWIC**  
**Status Appraisal Summary**

on the

**Columbian Carpet Moss**  
*Bryoerythrophyllum columbianum*

in Canada

**SPECIAL CONCERN**  
**2014**

**COSEWIC**  
Committee on the Status  
of Endangered Wildlife  
in Canada



**COSEPAC**  
Comité sur la situation  
des espèces en péril  
au Canada

COSEWIC status appraisal summaries are working documents used in assigning the status of wildlife species suspected of being at risk in Canada. This document may be cited as follows:

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Production note:

COSEWIC acknowledges Karen Golinski for writing the status report on the Columbian Carpet Moss, *Bryoerythrophyllum columbianum*, prepared under contract with Environment Canada. This report was overseen and edited by René Belland, Co-chair of the Mosses and Lichens Specialist Subcommittee.

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## COSEWIC Assessment Summary

### Assessment Summary – November 2014

**Common name**

Columbian Carpet Moss

**Scientific name**

*Bryoerythrophyllum columbianum*

**Status**

Special Concern

**Reason for designation**

This is a small, perennial moss that is endemic to western North America. In Canada, it has a restricted distribution in the shrub-steppe of the semi-arid Southern Interior of British Columbia. Surveys have confirmed its presence from 22 sites. The species is never abundant where it is found and recent surveys have provided few new locations. The species is patchily distributed at low densities. At least one population is believed to have been lost to vineyard development. Threats include agriculture, forest encroachment as a result of fire suppression, impact by grazing animals, urban development, road improvements, and recreational impacts.

**Occurrence**

British Columbia

**Status history**

Designated Special Concern in May 2004. Status re-examined and confirmed in November 2014.



to have been extirpated (T. McIntosh pers.comm., 2013), it is currently estimated to be 64 km<sup>2</sup>.

The known global range of *B. columbianum* (Figure 2) has been expanded substantially since the status report was published in 2004 (COSEWIC 2004). At that time only five occurrences were known in the United States, including two in California, two in Oregon, and one in Washington. Since then, the total number of known occurrences in the US has increased to 67. This includes five additional occurrences in California, which expands the global range southward; eight additional occurrences in Oregon; and 26 additional occurrences in Washington. Three collections originally identified as *Didymodon rigidulus* from Idaho were recently re-identified as *B. columbianum*, expanding the global range of *B. columbianum* eastward (T. McIntosh, pers. comm. 2010, cited in British Columbia Bryophyte Recovery Team 2010 and Environment Canada 2012; T. McIntosh, pers. comm. 2012).

The number of occurrences believed to be extirpated has increased from four to five (BCBRT 2010, Environment Canada 2012). However, monitoring has been minimal and only three occurrences listed in the 2004 status report have been reconfirmed since 2004, making it difficult to assess the status of the remaining occurrences.

\* Use the IUCN definition of "location"

Population Information:

Change in number of mature individuals:	yes <input type="checkbox"/> no <input type="checkbox"/> unk <input checked="" type="checkbox"/>
Change in population trend:	yes <input type="checkbox"/> no <input type="checkbox"/> unk <input checked="" type="checkbox"/>
Change in severity of population fragmentation:	yes <input type="checkbox"/> no <input type="checkbox"/> unk <input checked="" type="checkbox"/>
Change in trend in area and/or quality of habitat:	yes <input type="checkbox"/> no <input type="checkbox"/> unk <input checked="" type="checkbox"/>
Significant new survey information	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>

Explanation:

The number of mature individuals of Columbian Carpet Moss is currently unknown, and detailed historical data do not exist. Only three sites listed in the COSEWIC (2004) status report have been revisited since 2004; population trends, change in severity of population fragmentation, and change in trend in area and/or quality of habitat have not been quantified. Recent records of Columbian Carpet Moss do not include detailed population data.

To achieve the goal of maintaining known occurrences of Columbian Carpet Moss in British Columbia, the management plan for the species (BCBRT 2010, Environment Canada 2012) included in its objectives surveys "[t]o confirm all known populations of Columbian carpet moss in British Columbia by 2014". As of mid-2014 these surveys had not yet been initiated. Similarly, fieldwork "[t]o address knowledge gaps (e.g., population trends and impacts of potential and emerging threats, detailed habitat requirements and biological attributes, species distribution) by 2016", had not yet begun. Therefore, although new occurrences in BC and the United States are reported in this status appraisal summary and occurrences in BC may be extirpated, there is currently a lack of detailed population data for *Bryoerythrophyllum columbianum*.

Threats:

Change in nature and/or severity of threats:	yes <input checked="" type="checkbox"/> no <input type="checkbox"/> unk <input type="checkbox"/>
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**Explanation:**

Threats to Columbian Carpet Moss include vineyard development, grazing animals, urban development, road improvements, and outdoor recreational activities (COSEWIC 2004, BCBRT 2010, Environment Canada 2012). An additional potential threat is invasion by non-native plant species (BCBRT 2010, Environment Canada 2012).

Numerous threats have been identified that directly impact the shrub steppe habitat in which Columbian Carpet Moss grows. The following is drawn from the update status report for the western harvest mouse (COSEWIC 2007): *“The amount of shrub-steppe habitat available for the western harvest mouse in the Okanagan Valley has been declining over the past 70 years because of the combined effects of cattle grazing, agriculture, and urbanization. In a recent analysis of antelope bitterbrush shrub-steppe habitat, Wood (2003), calculated the rate of loss (primarily due to vineyard development) to be 90 ha/year during 1995-2001. The rate of habitat loss increased to 220 ha/year during 2001-2003. Based on this rate, antelope bitterbrush habitat will be completely eliminated from the South Okanagan - Similkameen within the next 18 years (Wood 2003). ... Habitat loss related to the rapidly expanding cities of Penticton, Kelowna, and Vernon likely poses the most significant threat to western harvest mouse habitat. Over the past 30 years, the human population of the Okanagan-Similkameen river basin has more than doubled, which represents the fastest growth rate among the 23 major river basins in Canada (Statistics Canada 2003). From 1971 to 2001, the human population in the Okanagan-Similkameen basin increased by 137% to 285,145 (Statistics Canada 2003). It is anticipated that the Regional District of Okanagan-Similkameen will experience considerable growth in the next 20 years. The projected trend is for a 30% increase in population during 2004-2021 (South Okanagan Regional Growth Strategy 2006).”*

Known direct threats that can be attributed to Columbian Carpet Moss occurrence loss include vineyard development, urban development, and road improvements. To date, three occurrences are presumed to have been extirpated as a result of vineyard development, and an additional occurrence may have been destroyed by roadwork. Grazing animals (livestock) may have eliminated a fifth occurrence (BCBRT 2010, Environment Canada 2012, T. McIntosh, pers. comm. 2013).

**Protection:**

Change in effective protection:

yes  no

**Explanation:**

Columbian Carpet Moss was designated as a species of Special Concern by COSEWIC in May 2004. It was subsequently added to Schedule 1 of the federal *Species at Risk Act* (SARA) in 2005 (COSEWIC 2004, BCBRT 2010, Environment Canada 2012). Five occurrences of Columbian Carpet Moss in BC are on Crown land: one east of Kamloops, one south of Keremeos, and three in the vicinity of Osoyoos.

Two occurrences may be afforded some form of protection because they are located within BC provincial parks. The northernmost occurrence of Columbian Carpet Moss is found within Churn Creek Provincial Park, located approximately 50 km northwest of Clinton. The other occurrence is found within the South Okanagan Grassland Protected Area, approximately 20 km southeast of Keremeos, near the Canada-US border.

**Rescue Effect:**

Change in evidence of rescue effect:

yes  no



Michael Ryan, BC Ministry of Forests, Lands and Natural Resource Operations,  
Kamloops, BC

Terry McIntosh, consultant, Vancouver, BC

### Information sources:

British Columbia Bryophyte Recovery Team. 2010. Management Plan for Columbian Carpet Moss (*Bryoerythrophyllum columbianum*) in British Columbia. Prepared for the B.C. Ministry of Environment, Victoria, BC. 15 pp.

<http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do?subdocumentId=8244>  
(Last accessed September 15, 2014)

COSEWIC 2004. COSEWIC assessment and status report on the Columbian Carpet Moss *Bryoerythrophyllum columbianum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 19 pp. URL:

<http://publications.gc.ca/collections/Collection/CW69-14-380-2004E.pdf> (Last accessed September 15, 2014)

COSEWIC 2007. COSEWIC assessment and update status report on the Western harvest mouse *Reithrodontomys megalotis megalotis* and *Reithrodontomys megalotis dychei* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 27 pp. ([www.sararegistry.gc.ca/status/status\\_e.cfm](http://www.sararegistry.gc.ca/status/status_e.cfm))

Environment Canada. 2012. Management Plan for the Columbian Carpet Moss (*Bryoerythrophyllum columbianum*) in Canada. *Species at Risk Act* Management Plan Series. Environment Canada, Ottawa. v + Appendix. URL:

[http://publications.gc.ca/collections/collection\\_2012/ec/En3-5-20-2012-eng.pdf](http://publications.gc.ca/collections/collection_2012/ec/En3-5-20-2012-eng.pdf)  
(Last accessed September 15, 2014)

IUCN Standards and Petitions Subcommittee. 2013. Guidelines for Using the IUCN Red List Categories and Criteria. Version 10. Prepared by the Standards and Petitions Subcommittee. URL: <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>

(Last accessed September 15, 2014)

McIntosh, T.T., M. Vander Haegen, and M. Schroeder. 2007. Patterns in biological soil crust recovery in Conservation Reserve Program fields, Washington State. Report prepared for Washington Department of Fish and Wildlife. 22 pp. URL:

<http://wdfw.wa.gov/publications/01306/> (Last accessed September 15, 2014)

NatureServe. 2004. A habitat-based strategy for delimiting plant element occurrences: Guidance from the 2004 Working Group.

URL: [http://www.natureserve.org/library/delimiting\\_plant\\_eos\\_Oct\\_2004.pdf](http://www.natureserve.org/library/delimiting_plant_eos_Oct_2004.pdf) (Last accessed September 25, 2014)

NatureServe. 2014. URL: <http://explorer.natureserve.org/> (Last accessed September 15, 2014)

Tropicos. 2012. Tropicos, botanical information system at the Missouri Botanical Garden. *Bryoerythrophyllum columbianum* (F.J. Herm. & E. Lawton) R.H. Zander. URL: <http://www.tropicos.org/Name/35100027> (Last accessed September 15, 2014)

Vander Haegen, W.M., M.A. Schroeder, S.S. Germaine, S.D. West, and R.A. Gitzen. 2005. Wildlife on Conservation Reserve Program lands and native shrub steppe in Washington: Progress Report for 2004. Washington Department of Fish and Wildlife, Olympia. 51 pp. URL: <http://wdfw.wa.gov/publications/01304/wdfw01304.pdf> (Last accessed September 15, 2014)

Author of SAS: G. Karen Golinski

## TECHNICAL SUMMARY

*Bryoerythrophyllum columbianum*

Columbian Carpet Moss

Érythrophyllle du Columbia

Range of occurrence in Canada: British Columbia

### Demographic Information

Generation time (usually average age of parents in the population; indicate if another method of estimating generation time indicated in the IUCN guidelines(2008) is being used)	Unknown
Is there an [observed, inferred, or projected] continuing decline in number of mature individuals?  The number of mature individuals has likely declined as a result of habitat destruction such as vineyard development. However, there are no data to support this assumption.	Inferred
Estimated percent of continuing decline in total number of mature individuals within [5 years or 2 generations]	Unknown
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over the last [10 years, or 3 generations].	Unknown
[Projected or suspected] percent [reduction or increase] in total number of mature individuals over the next [10 years, or 3 generations].	Unknown
[Observed, estimated, inferred, or suspected] percent [reduction or increase] in total number of mature individuals over any [10 years, or 3 generations] period, over a time period including both the past and the future.	Unknown
Are the causes of the decline clearly reversible and understood and ceased?  The causes of decline (i.e., various forms of development, agricultural practices, and recreation) are unlikely to cease without concerted outreach.	Unknown
Are there extreme fluctuations in number of mature individuals? Populations of this species are not known to undergo population fluctuations	Unlikely

### Extent and Occupancy Information

Estimated extent of occurrence	14,869 km <sup>2</sup>
Index of area of occupancy (IAO)	64 km <sup>2</sup>

<p>Is the population severely fragmented?</p> <p>Most occurrences of Columbian Carpet Moss in COSEWIC (2004) have not been observed for &gt;10 years. Therefore, the true extent of population fragmentation is unknown. However, based on known information, at least 50% of the total area of occupancy is in habitat patches that are very small and are separated from other habitat patches by long distances (IUCN 2013).</p>	Unknown
<p>Number of locations*</p> <p>The species is known from 22 occurrences. However, because few of the previously known occurrences have been revisited to evaluate threats, it is not known how many locations the occurrences represent.</p>	Unknown.
<p>Is there an observed continuing decline in extent of occurrence?</p> <p>Although several new occurrences for the species have been recently documented and have increased the apparent EO, most of the previous occurrences have not been revisited to determine their status. Until such data are available, a continuing decline remains unknown.</p>	Unknown
<p>Is there an observed continuing decline in index of area of occupancy?</p> <p>Although several new occurrences for the species have been recently documented and have increased the apparent IAO, most of the previous occurrences have not been revisited to determine their status. Until such data are available, a continuing decline remains unknown.</p>	Unknown
<p>Is there an observed continuing decline in number of populations?</p> <p>Although several new occurrences for the species have been recently documented and increased the apparent number of populations, most of the previous occurrences have not been revisited to determine their status. Until such data are available, a continuing decline remains unknown.</p>	Unknown
<p>Is there an observed continuing decline in number of locations?</p> <p>Because few of the previously known occurrences have been revisited to evaluate threats, it is not known how many locations the occurrences represent.</p>	Inferred
<p>Is there an observed continuing decline in area, extent and/or quality of habitat?</p> <p>Because few of the previously known occurrences have been revisited, it is unknown whether there is a continuing decline in area, extent and/or quality of habitat. However, it is likely because this region has experienced intense agricultural and urban development since the first COSEWIC report in 2004.</p>	Yes
<p>Are there extreme fluctuations in number of populations?</p>	No
<p>Are there extreme fluctuations in number of locations*?</p>	No
<p>Are there extreme fluctuations in extent of occurrence?</p>	No
<p>Are there extreme fluctuations in index of area of occupancy?</p>	No

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\* See Definitions and Abbreviations on [COSEWIC website](#) and [IUCN 2010](#) for more information on this term.

**Number of Mature Individuals (in each population)**

Population	N Mature Individuals
See Table 1. Population details for most occurrences are vague, outdated, or non-existent.	Unknown
Total	Unknown

**Quantitative Analysis**

Probability of extinction in the wild is at least [20% within 20 years or 5 generations, or 10% within 100 years].	Not available
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**Threats (actual or imminent, to populations or habitats)**

<p>Threats to Columbian Carpet Moss identified in previous reports (COSEWIC 2004, BCBRT 2010, Environment Canada 2012) and their impacts on Columbian Carpet moss populations are listed below.</p> <ol style="list-style-type: none"> <li>1. Vineyard development: One population has been extirpated because of vineyard construction.</li> <li>2. Grazing animals. 6 subpopulations are subject to livestock damage.</li> <li>3. Urban development: At least 1 subpopulation on the west side of Osoyoos has been reduced in size because of housing development and other populations in the same are under similar threat.</li> <li>4. Road improvements: 4 sites are threatened by road construction or maintenance</li> <li>5. Outdoor recreational activities: Hiking has negatively impacted the population at 1 site and may have affected 3 other populations.</li> <li>6. Invasion by non-native plant species: This threat is a potential threat which has yet to be documented.</li> </ol>
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**Rescue Effect (immigration from outside Canada)**

Status of outside population(s)?	
<i>Bryoerythrophyllum columbianum</i> is ranked S2 in both Washington and Oregon. It is ranked SNR in California and Idaho. Its global status is G3G4 (NatureServe 2014).	
Is immigration known or possible?	No
Would immigrants be adapted to survive in Canada?	Unknown
Is there sufficient habitat for immigrants in Canada?	Possibly
Is rescue from outside populations likely?	Unlikely

**Data Sensitive Species**

Is this a data sensitive species? Yes.
Permission has not been granted to share data from three occurrences: one located south of Penticton, west of Kaleden (EO ID 10887), one located just east of Oliver (EO ID 10891), and one located just east of Osoyoos (EO ID 10983).

### Status History

COSEWIC (2004): Special Concern

Criteria: "Not applicable"

Reasons for Designation (2004): "This is a western North American endemic species. It is a small perennial species and in Canada has a restricted distribution in the shrub-steppe in semi-arid regions of British Columbia where recent surveys have confirmed its presence from 11 sites. The species is never abundant in sites where it is found and extensive surveys have provided few new locations. At least one population is believed to have been lost to cultivation (vineyard) or to stochastic events. Threats include agriculture (especially vineyards), impact by grazing animals, urban development, road improvements, and human recreational impacts. Based on known occurrences, the species appears to have a very restricted distribution. However, the species is patchily distributed at low densities in large habitats not all of which have been censused."

### Status and Reasons for Designation

<b>Status:</b> Special Concern	<b>Alpha-numeric Code:</b> Not applicable
<b>Status History:</b> Designated Special Concern in May 2004. Status re-examined and confirmed in November 2014.	
<b>Reasons for Designation:</b> This is a small, perennial moss that is endemic to western North America. In Canada, it has a restricted distribution in the shrub-steppe of the semi-arid southern interior of British Columbia. Surveys have confirmed its presence from 22 sites. The species is never abundant where it is found and recent surveys have provided few new locations. The species is patchily distributed at low densities. At least one population is believed to have been lost to vineyard development. Threats include agriculture, forest encroachment as a result of fire suppression, impact by grazing animals, urban development, road improvements, and recreational impacts.	

### Applicability of Criteria

Criterion A: Not applicable. The number of mature individuals is unknown.
Criterion B: Not applicable. Meets B1 (EO estimated to be < 20,000 km <sup>2</sup> ) for Threatened and B2 (IAO estimated to be < 500 km <sup>2</sup> ) criteria for Endangered, but the population is not known to be severely fragmented, there are more than 10 locations, and there are no extreme fluctuations.
Criterion C: Not applicable since the number of mature individuals is unknown.
Criterion D: Not applicable. The number of mature individuals for this species likely exceeds 1000.
Criterion E: No quantitative analyses have been done.

### Additional Sources of Information:

Marta Donovan, British Columbia Conservation Data Centre, BC Ministry of Environment, Victoria, BC

Judith Harpel, University of British Columbia Herbarium, Beaty Biodiversity Museum, Vancouver, BC

Terry McIntosh, pers. comm 2013. Consultant, Vancouver, BC

**Table 1. Occurrences of Columbian Carpet Moss in Canada. “EO ID” refers to the unique identifier applied by the BC Conservation Data Centre. Data sources: COSEWIC 2004, BCBRT 2010, Environment Canada 2012, Terry McIntosh pers. comm. 2012, 2013, and BC Conservation Data Centre 2013.**

No.	Occurrence	EO ID (Element occurrence identifier)	Site	First observed	Last observed	New, Presumed extant, Extirpated
1	~50 km west-northwest of Clinton	EO ID 7452, EO #14	1	2001	2001	
2	Northeast Kamloops, within 1 km of Halston	EO ID 10890, EO #20	2	1983	1983	Not obs. 2002; presumed extirpated
3	Valleyview, east of Kamloops	EO ID 7433, EO #3a	3a	2002	2002	
		EO ID 7433, EO #3b	3b	2002	2002	
		EO ID 7433, EO #3c	3c	2002	2002	
		EO ID 7433, EO #3d	3d	2002	2002	
		EO ID 7433, EO #3e	3e	2002	2002	
4	East of Kamloops, Dallas area, Juniper Creek	EO ID 7437, EO #5a	4a	2002	2002	
		EO ID 7437, EO #5b	4b	2002	2002	
		EO ID 7437, EO #5c	4c	2002	2002	
5	East of Kamloops; west of La Farge cement plant, north side of South Thompson River	EO ID 7438, EO #4	5	2002	2002	
6	2.3 km east of Kamloops, McGregor Creek, north side of Thompson River	EO ID 7439, EO #6	6	2002	2002	
7	Spences Bridge; adjacent to Murray Falls	EO ID 7447; EO #13	7	1980	1980	Not obs. 2002; possibly extirpated
8	North of Naramata; near Indian Rock	EO ID 7432; EO #2	8	2001	2002	
9	North of Naramata, west of pullout along road	EO ID 10886; EO #16	9	2005	2005	New record
10	East side of Penticton, along Crescent Hill Road	EO ID 7445, EO #11	10	2003	2003	
11	Sensitive Information available upon request from Secretariat	EO ID 10887, EO #17				
12	Sensitive Information available upon request from Secretariat	EO ID 10891, EO #21				
13	Oliver, west of Okanagan River; slope of townsite	EO ID 7431, EO #1	13	1986	1986	Not obs. 2002; likely extant
14	Inkaneep Park Road, ~5 km south of Oliver, east of Okanagan River	EO ID 7446, EO #12	14	1980	1980	Not obs. 2002; presumed extirpated
15	Southeast of Keremeos	EO ID 10888, EO #18	15	2005	2005	New record
16	South of Mannery Creek, ~15 km south of Keremeos, east side of Hwy #3	EO ID 7440, EO #7	16	2003	2003	
17	South Okanagan Grasslands Protected Area, ~20 km southeast of Keremeos, north side of Hwy #3	EO ID 7441, EO #8	17	2003	2003	
18	~5.5 km northwest of Osoyoos	EO ID 10889, #19a	18a	2011	2011	New record
		EO ID 10889, #19b	18b	2011	2011	New
		EO ID 10889, #19c	18c	2011	2011	New
19	~2.5km northwest of Osoyoos; adjacent to pullout east of Hwy #3 Just north of Osoyoos Land Fill, northwest of Osoyoos	EO ID 7442; EO #9a	19a	2002	2006	
		EO ID 7442; EO #9b	19b	2009	2009	New subpopulation
20	Osoyoos area, east facing slope on northwest side of Osoyoos Lake	none	22	1981	1981	Not obs. 2000, 2002; likely extirpated

No.	Occurrence	EO ID (Element occurrence identifier)	Site	First observed	Last observed	New, Presumed extant, Extirpated
21	Sensitive data available upon request from the Secretariat	EO ID 10943, EO #22				
22	Just west of Osoyoos	EO ID 8160, EO #10c	22a	2007	2007	New subpopulation
	As above	EO ID 8160, EO #10a	22b	2007	2007	New subpopulation
	West of Osoyoos; south of golf course	EO ID 8160, EO #10b	22c	2003	2007	
	West of Osoyoos	EO ID 8160, EO #15a	22d	2011	2011	New subpopulation
	Just west of Osoyoos	EO ID 8160, EO #15b	22e	2007	2007	New subpopulation
	Osoyoos; Desert Park Road on Crown Land	none	22f	1981	1981	
	Just south of Osoyoos, west of Osoyoos Lake	EO ID 8160; EO #15d	22g	2007	2007	New subpopulation
	Just south of Osoyoos, west of Osoyoos Lake	EO ID 8160; EO #15e	22h	2007	2007	New subpopulation
	Just south of Osoyoos, west of Osoyoos Lake	EO ID 8160; EO #15f	22i	2007	2007	New subpopulation
	Just south of Osoyoos, west of Osoyoos Lake	EO ID 8160; EO #15g	22j	2007	2007	New subpopulation
	Just south of Osoyoos, west of Osoyoos Lake	EO ID 8160; EO #15h	22k	2007	2007	New subpopulation
	Just south of Osoyoos, west of Osoyoos Lake	EO ID 8160; EO #15i	22l	2007	2007	New subpopulation

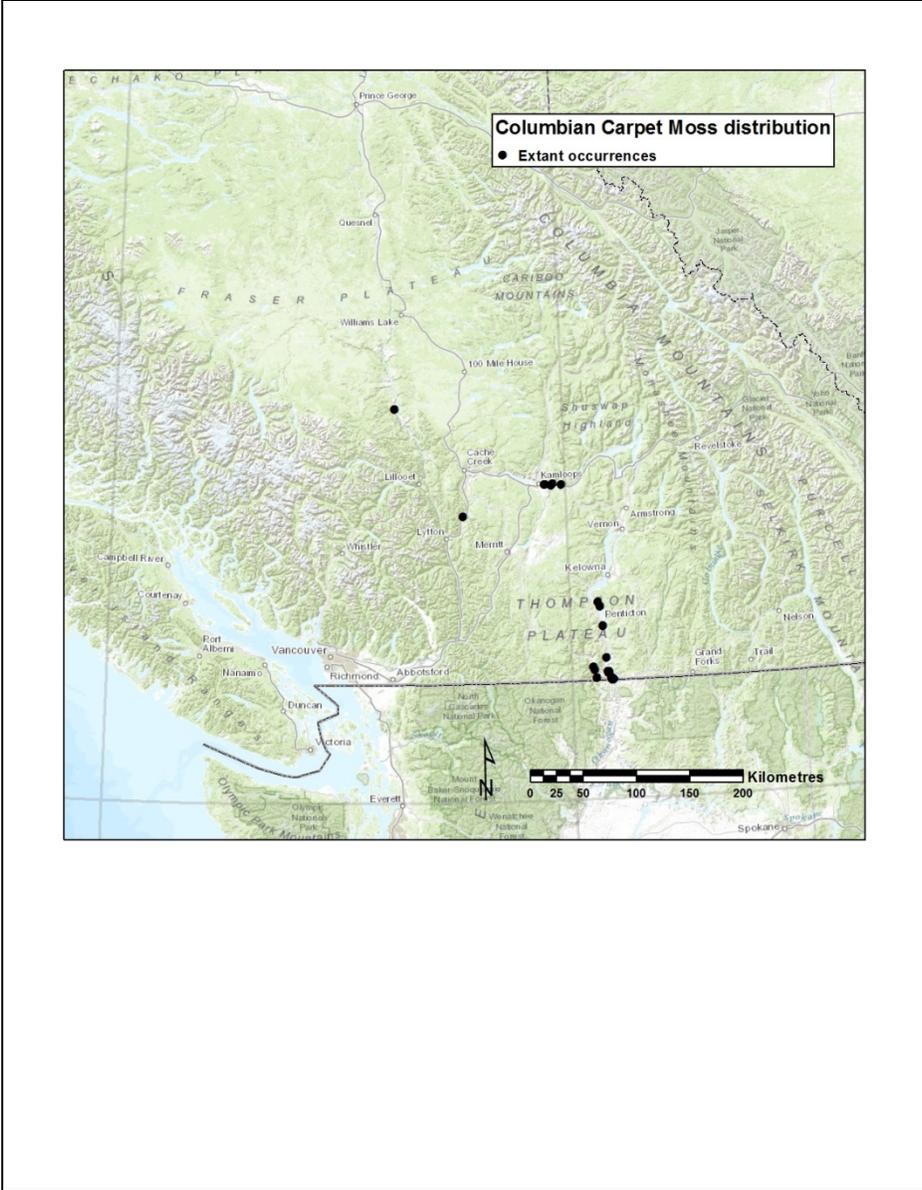


Figure 1. The distribution of Columbia Carpet Moss in Canada.

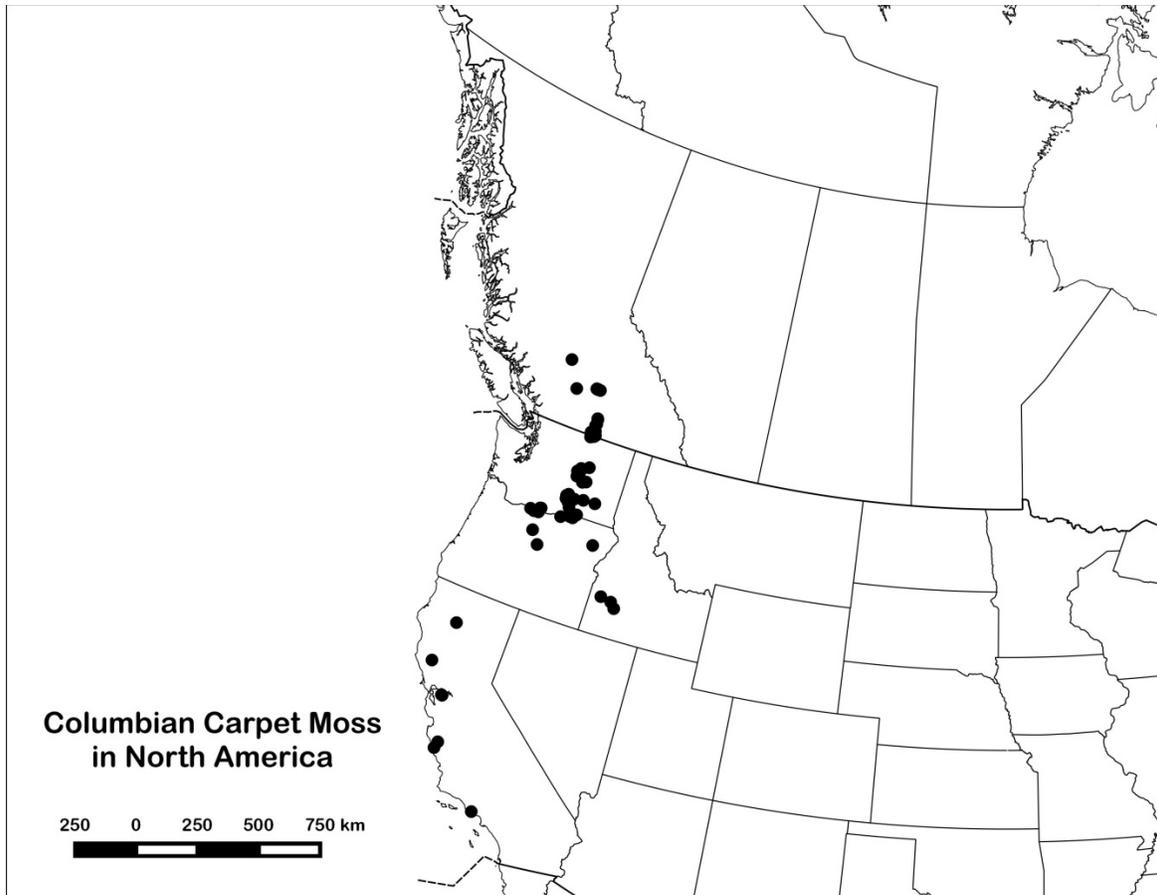


Figure 2. The distribution of Columbian Carpet Moss in North America.



### COSEWIC HISTORY

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was created in 1977 as a result of a recommendation at the Federal-Provincial Wildlife Conference held in 1976. It arose from the need for a single, official, scientifically sound, national listing of wildlife species at risk. In 1978, COSEWIC designated its first species and produced its first list of Canadian species at risk. Species designated at meetings of the full committee are added to the list. On June 5, 2003, the *Species at Risk Act* (SARA) was proclaimed. SARA establishes COSEWIC as an advisory body ensuring that species will continue to be assessed under a rigorous and independent scientific process.

### COSEWIC MANDATE

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species, subspecies, varieties, or other designatable units that are considered to be at risk in Canada. Designations are made on native species for the following taxonomic groups: mammals, birds, reptiles, amphibians, fishes, arthropods, molluscs, vascular plants, mosses, and lichens.

### COSEWIC MEMBERSHIP

COSEWIC comprises members from each provincial and territorial government wildlife agency, four federal entities (Canadian Wildlife Service, Parks Canada Agency, Department of Fisheries and Oceans, and the Federal Biodiversity Information Partnership, chaired by the Canadian Museum of Nature), three non-government science members and the co-chairs of the species specialist subcommittees and the Aboriginal Traditional Knowledge subcommittee. The Committee meets to consider status reports on candidate species.

### DEFINITIONS (2014)

Wildlife Species	A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)*	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)**	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)***	A category that applies when the available information is insufficient (a) to resolve a species' eligibility for assessment or (b) to permit an assessment of the species' risk of extinction.

\* Formerly described as "Vulnerable" from 1990 to 1999, or "Rare" prior to 1990.  
 \*\* Formerly described as "Not In Any Category", or "No Designation Required."  
 \*\*\* Formerly described as "Indeterminate" from 1994 to 1999 or "ISIBD" (insufficient scientific information on which to base a designation) prior to 1994. Definition of the (DD) category revised in 2006.



The Canadian Wildlife Service, Environment Canada, provides full administrative and financial support to the COSEWIC Secretariat.