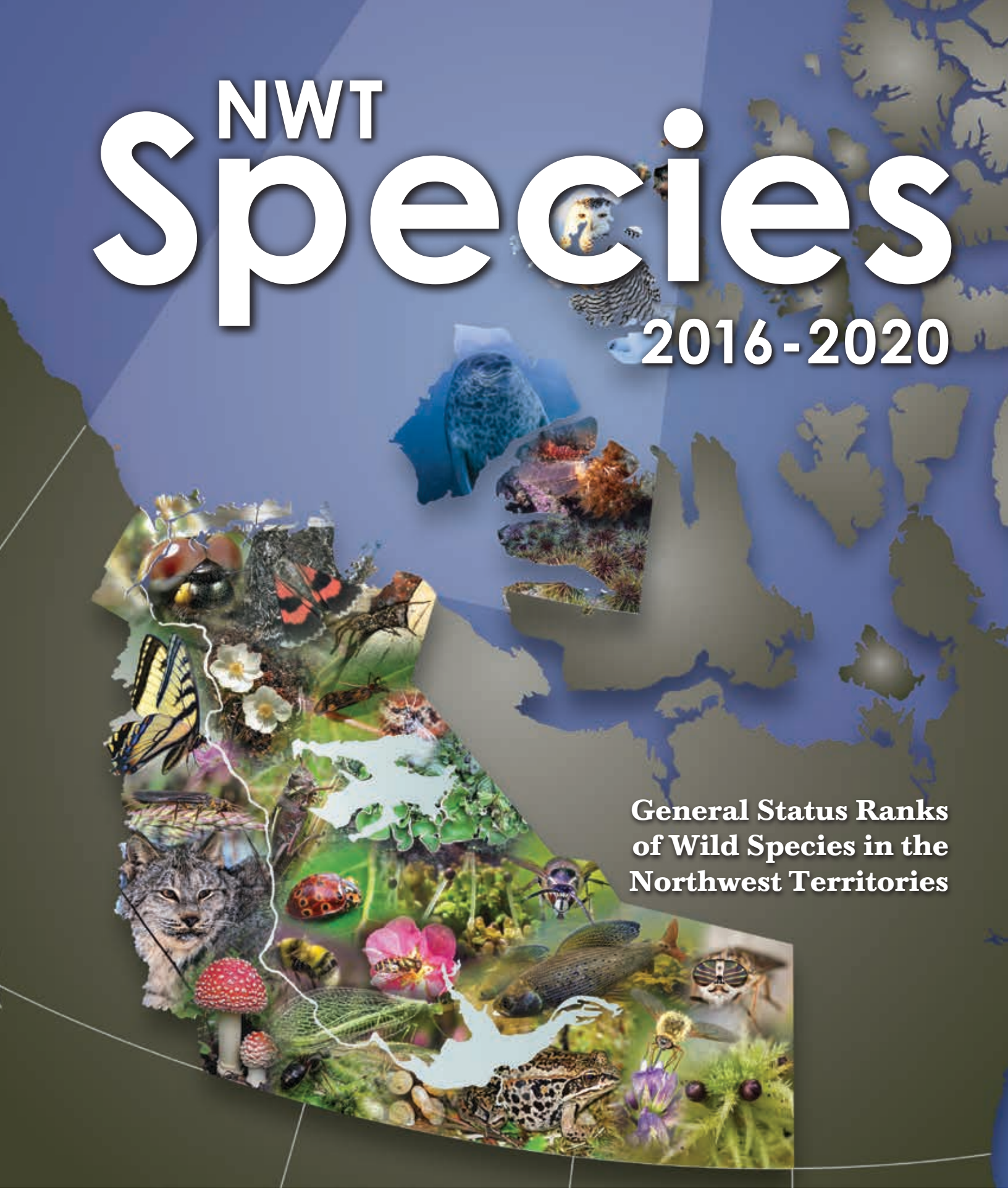
NWT Species 2016-2020



General Status Ranks of Wild Species in the Northwest Territories

In collaboration with:

Government of Northwest Territories

Canada

WILDLIFE MANAGEMENT ADVISORY COUNCIL (NWT)

Wek'èezhìi Renewable Resources Board

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NWT Species 2016-2020

General Status Ranks of Wild Species in the Northwest Territories

Department of Environment and Natural Resources, GNWT

Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest

In collaboration with:

Canada

Sahtu Renewable Resources Board

Gwich'in Renewable Resources Board

Wildlife Management Advisory Council (NWT)

FJMC

Wek'èezhìi Renewable Resources Board

Table of Contents

Mountain Caribou
Photo Credit: J Nagy

Executive Summary **1**

Preface – Building on our knowledge of NWT species **2**

1 Background – Why rank the general status of all wild species? **3**

2 Objectives – What are we trying to achieve? **6**

3 Scope – What did we look at? **7**

4 Data Sources and Methods – How did we rank species? **10**

Species Lists and Information – The infobase 10

Protocol Factor Step – Sorting data and information into factors 10

Protocol Coding Step – Rating factors using codes 12

Matrix for rating factors 13

Protocol Rule Step – Applying rules to rank species 14

Protocol Point Step – Applying points to rank species 14

Protocol Definition Check – Verifying calculated ranks with definitions 15

Status Rank Categories – Ranking species for assessment and management 18

Changing Ranks – Keeping track of changes in the General Status Ranks of NWT species. 19

5 Results – What did we learn? **20**

6 Ranked Species Lists – What are the details? **25**

6.1 Terrestrial Mammals 26

6.2 Marine Mammals 32

6.3 Birds 36

6.4 Fishes 50

6.5 Amphibians and Reptile 60

6.6 Corals 64

6.7 Sponges 68

6.8 Selected Echinoderms 70

6.9 Freshwater and Terrestrial Molluscs 74

6.10 Decapods 82

6.11 Beetles 86

6.12 Bees 122

6.13 Vespid Wasps 128

6.14 Ants 132

6.15 Lacewings and Relatives 136

6.16 Biting Flies 140

6.17 Bee Flies 148

6.18 Flower Flies 152
6.19 Mayflies 158
6.20 Stoneflies 162
6.21 Caddisflies 166
6.22 Butterflies 172
6.23 Macro-moths 178
6.24 Dragonflies and Damselflies 190
6.25 Grasshoopers and Relatives 194
6.26 Spiders 198
6.27 Vascular Plants 210
6.28 Liverworts 250
6.29 Mosses 258
6.30 Macro-lichens 276
6.31 Selected Mushrooms 290

7 Challenges and Opportunities – What are the next steps? 294

8 Further Your Knowledge – How to learn more? 296

9 Acknowledgments – Who participated in this program? 300

Monitoring Information – How to get involved? 303

Executive Summary

The Northwest Territories (NWT) is home to a diverse group of plants and animals. About 30,000 species are estimated to occur here. An important first step in safeguarding biodiversity is to increase our knowledge of each species and to provide a mechanism to monitor the conservation status of each species regularly. Monitoring the status ranks of species is important to detect changes before they become critical and to determine which species need a more detailed assessment or closer monitoring.

This report on the general status of wild species in the NWT was produced collaboratively with other agencies and wildlife co-management boards, and with the input from many knowledgeable people from the NWT and elsewhere.

General Status Ranks provided in the NWT Species 2016-2020 report are valid from 2016 to 2020 inclusively.

The NWT Species 2016-2020 is the fourth report of the NWT General Status Ranking Program. The reports are issued every five years and species status ranks are valid for the whole period. The current report provides ranks for 5,257 species, about 17% of all species expected to be present in the NWT.

Over the past five years, one percent of status rank changes can be attributed to an increase in threats to species. These threats are complex and include the effects of climate change and new diseases. Additional groups of insects are ranked in this report and the results of many years of new inventories in the Beaufort Sea are yielding a rich database on marine biodiversity. Many changes in ranks over the past five years were due to new information. However, still not enough information was available to rank the general status of most (52%) species.

Enthusiasm for biodiversity is encouraging. More people are sharing information on species using social media, often providing high-quality digital photographs of great taxonomic value.

Grey Wolf
Photo Credit: S Fochuk

Preface – Building on our knowledge of NWT species

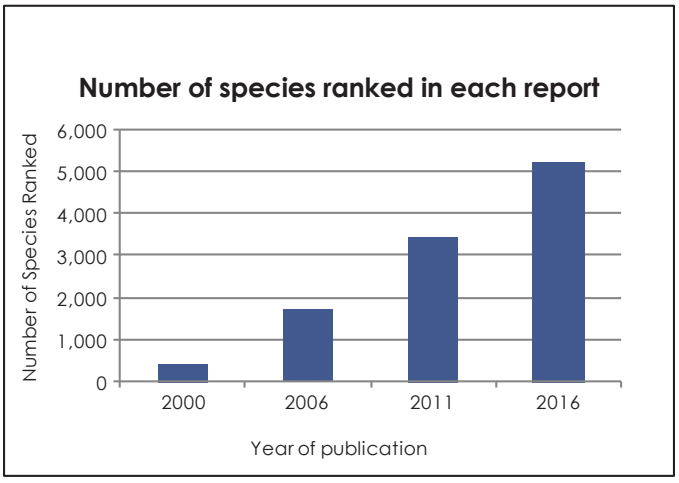
The NWT Species 2016-2020 report is the fourth in a series of reports to be published every five years. The previous reports on the general status ranks of species in the NWT were published in 2000, 2006, and 2011. The NWT Species 2016-2020 report presents the general status ranks of 5,257 species known or expected to be present in the NWT.

Since 2000, we have collected information on additional species. Monitoring the general status of species was performed every year. We updated, corrected, and added new information to our catalogue of referenced information, the "*NWT Species Monitoring Infobase*", searchable on the Internet.

As of 2016, we have updated the general status ranks for the 3,429 species ranked in 2011 and added new ranks for additional species.

With this report about 17% of all species expected to be present in the NWT have been ranked.

We thank all knowledge holders from the NWT, or visiting and studying in the North, who have contributed a vast amount of information on NWT species.



The NWT Species General Status Ranking Program continues to be a valuable tool to exchange ideas, reach common understandings, and build on our collective knowledge to manage human activities in an ecologically sustainable manner. The program also has an official role. From 2010 onward the results of the program have provided information to the NWT Species at Risk Committee (SARC), formed under the *Species At Risk (NWT) Act*, for their prioritization lists on which species should be assessed in detail in the NWT.

The program is now part of NatureServe Canada, and has updated its methods to meet new ranking standards. The ranking system used by the program is shared by all other jurisdictions in Canada, and is similar to systems used by other countries. This tool is assisting us with setting conservation priorities territorially, nationally, and internationally, especially across the circumpolar regions of the world.

Working Group on General Status of NWT Species

Refer to the Monitoring Infosheet at the end of this report for contact numbers.

White-crowned Sparrow Photo Credit: J Nagy

1 Background – Why rank the general status of all wild species?

This report is the product of the NWT Species General Status Ranking Program. The program was initiated as a result of a series of commitments and recognized needs during the past few decades.

The NWT is home to about 30,000 species. Some of these have a very important place in our economy and our cultures. Some species are facing threats due to human activities and other species are simply very rare. We recognize the need to broaden our monitoring efforts. Increasing our knowledge of all species is essential to modern wildlife management and ecologically sustainable development. The loss of a single species may have negative consequences that ripple through an ecosystem, resulting in threats to the survival of both game and non-game species. We now can provide baseline information on a greater number of species and can report on how each one is doing in general. Species that are found to need special attention are noted and prioritized for further assessment.

Our commitments under the *Accord for the Protection of Species at Risk in Canada*

The Government of the Northwest Territories signed the *Accord for the Protection of Species at Risk in Canada* in 2004. The Accord acknowledges that an important first step in providing effective protection to species is to prevent them from ever becoming at risk. This is done by monitoring, assessing and reporting regularly on the status of **all** wild species. The Department of Environment and Natural Resources, working closely with the federal government, co-management boards, universities, research firms and knowledge holders, initiated the NWT Species General Status Ranking program to fulfill its commitment to monitor the general status of all wild species in the Northwest Territories. This document is the fourth report of a continuing program.

Our species prioritization for species at risk assessments

In 2010, the Government of the Northwest Territories passed its first legislation designed to protect species at risk in the NWT as part of a larger commitment to maintain the biodiversity of the NWT. The NWT Species at Risk Committee (SARC) assesses in detail the biological status of species that may be at risk in the NWT. Drafting detailed status reports takes time and resources.

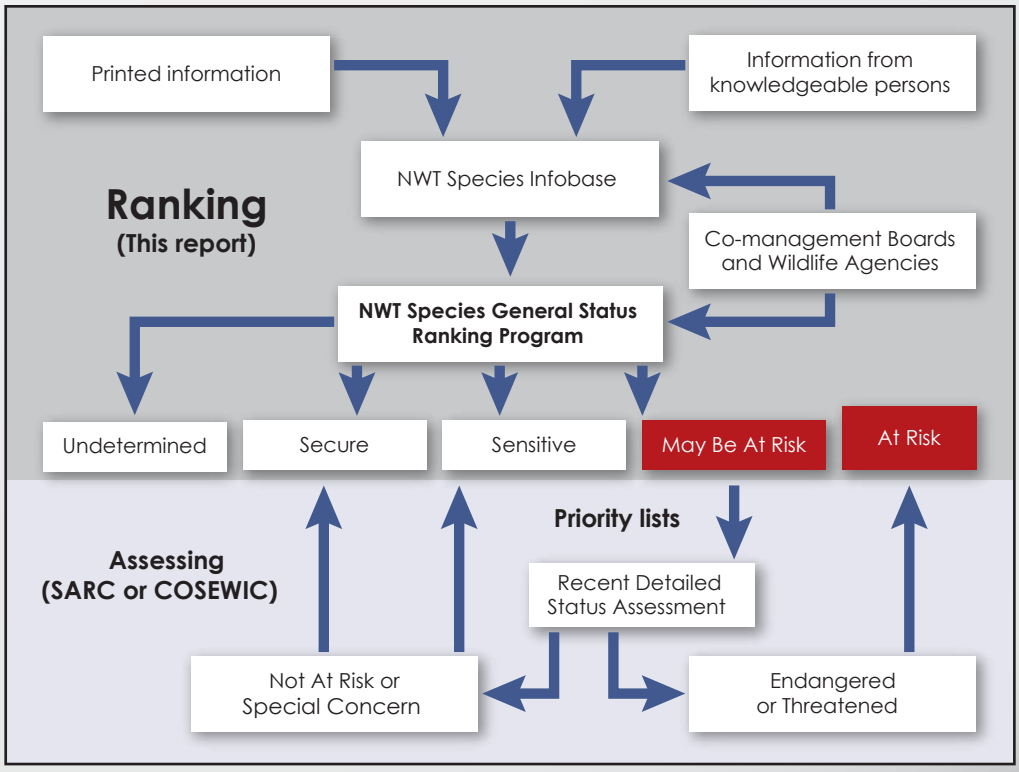
With about 30,000 species expected to be in the NWT, SARC needs the results of the NWT General Status Ranking Program as a starting point to prioritize species for a more detailed assessment.

Grizzly
Photo Credit: C Graydon

1 Background – Why rank the general status of all wild species?

The NWT General Status Ranking Program provides the starting point for our continuous efforts to monitor and conserve biodiversity in the NWT. The program aims to provide official lists of all species known to be present in the NWT and to quickly rank these species every five years. Each species is ranked using a standard protocol described in this report. The ranking protocol requires adequate information, and is faster than a detailed assessment.

Species that are ranked as "May be at Risk" are forwarded as priority lists to SARC and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) for their consideration for future detailed assessments of conservation status. These assessments are onerous and can take up to three years to complete as they require more detailed information assembled in large comprehensive status reports. These status reports, in turn, provide ample information to re-rank a species in the subsequent update of the NWT General Status Ranking Program. All species assessed[1] as "Endangered" or "Threatened" in the NWT or in Canada have their ranks updated to "At Risk" as a rule. There is no rule for species that have been assessed recently as "Special Concern" or "Not At Risk"; these species may have their rank updated to either secure or sensitive.



[1] For more information on the NWT Species At Risk program go to www.nwtspeciesatrisk.ca/.

Our participation in NatureServe Canada and the National General Status Program

In 2011, the NWT General Status Ranking Program became an official "Conservation Data Centre", a jurisdictional member of NatureServe Canada. Link to www.natureserve.ca. The evaluation system described in this report uses a standard protocol shared by all other Canadian jurisdictions and was developed over decades by NatureServe[2] with help from experiences gained at the international level by the International Union for Conservation of Nature (IUCN). This protocol was adopted by the NWT General Status Ranking Program and merged with the past methodology to ensure that current results were comparable with previous ranks published in past reports. More details on the new protocol are provided in this report.

The results of the NWT Species General Status Ranking Program are combined with the results of similar programs in each jurisdiction in Canada to develop an overall "Canada-wide rank" for each species. The National General Status Program adopted the NatureServe protocols in 2011, so the NWT's results are comparable with results from across Canada. Canada-wide ranks for species can be found on the Wild Species – General Status of Species in Canada website. Link to www.wildspecies.ca. Canada-wide ranks are used to prioritize species in Canada for more detailed assessment by COSEWIC.

Our participation in monitoring biodiversity across the Arctic

This report assists The Arctic Council and its programs such as the *Conservation of Arctic Flora and Fauna (CAFF)* to monitor circumpolar biodiversity and to share information about Arctic species with other jurisdictions. Link to www.arctic-council.org and www.caff.is.

Our efforts to help track invasive alien species in Canada and the Arctic

The Arctic Invasive Alien Species Strategy and Action Plan call for better cooperation to prevent entry, eradicate or minimize spread and mitigate impacts of invasive alien species in Arctic ecosystems. The NWT General Status Ranking Program will help to integrate data on the presence of all non-native species into circumpolar community-based observing networks to help coordinate monitoring programs across all pathways and ecosystems in the Arctic. Link to www.caff.is/invasive-species

Lake Emerald Photo Credit: F Alo

[2] NatureServe is a non-profit organization that provides biodiversity and conservation data, tools, and services to private and government clients, partner organizations, and the public. It is based near Washington DC, US. NatureServe Canada is the Canadian network of NatureServe. Most network members in Canada are governmental agencies.

2 Objectives – What are we trying to achieve?

Goal

To maintain biodiversity by ensuring that no species becomes extinct as a consequence of human activity.

Prioritize

- **To prioritize species for more detailed status assessments.**

  Species ranked as "May be at Risk" have the highest priority for detailed assessment by SARC of extirpation risk in the NWT and in Canada by COSEWIC.

Describe

- **To succinctly describe the current state of our knowledge about all wild species in the NWT.**

  This is achieved by quickly summarizing the data and information relevant to the ranking process from printed material and knowledgeable people. Information gathered in detailed assessment reports prepared by SARC and COSEWIC is also used in the ranking process if the assessment is recent.

Educate

- **To educate and increase awareness of species needing special attention and of possibilities for active involvement in monitoring activities throughout the NWT.**

  This is achieved by the present report and by providing venues for discussions and information on NWT species on social media.

Guide

- **To provide a clear evaluation system and species status ranks to guide conservation and impact assessment decisions.**
- **To provide a tool for exchanging information about the status ranks of wild species in Canada and in the circumpolar world.**

  The program is a member of NatureServe Canada, is being integrated with GNWT's Wildlife Management Information System and has adopted the use of BIOTICS 5, a system used to share species information globally.

Willow Ptarmigan
Photo Credit: D Johnson

3 Scope – What did we look at?

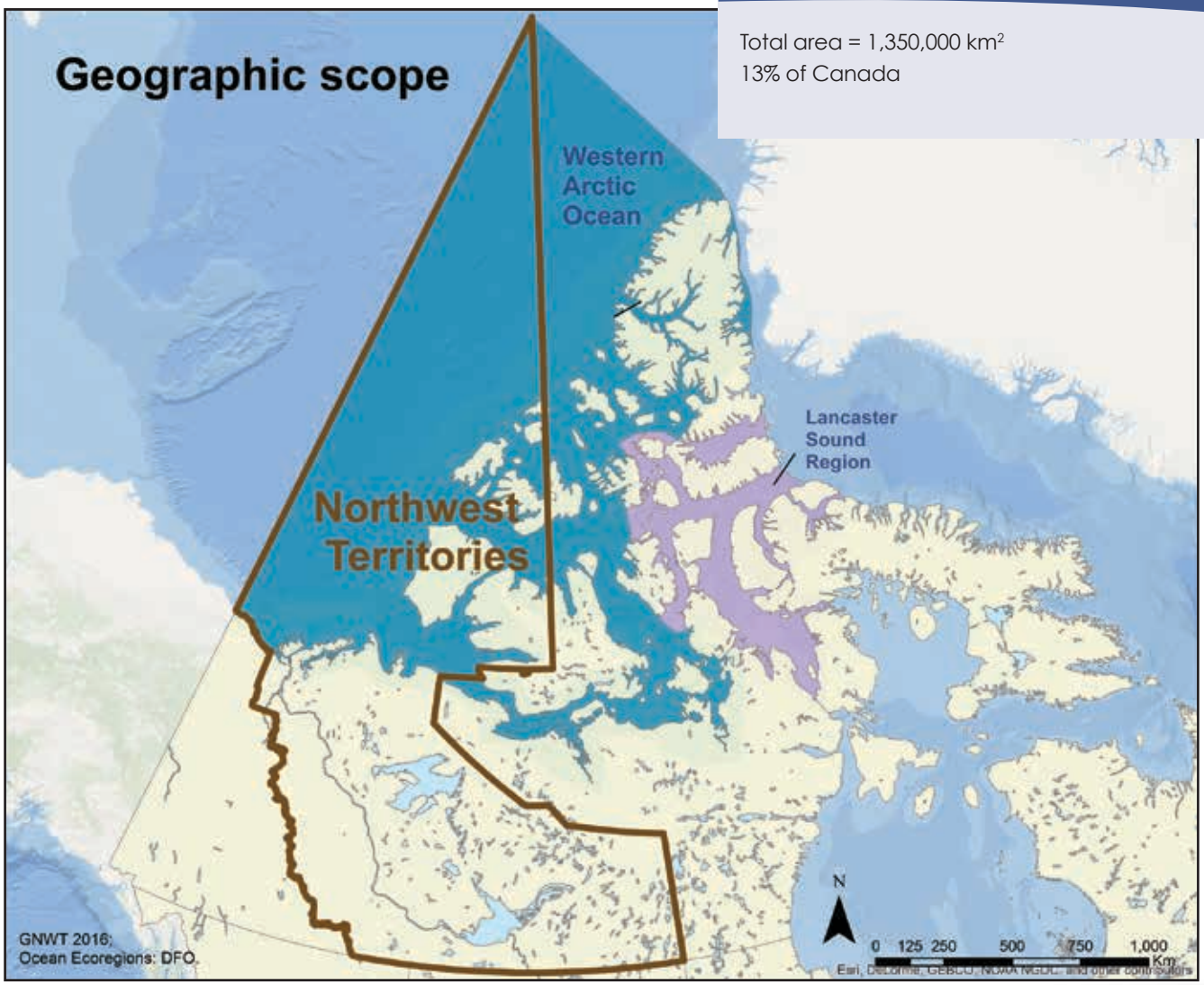
Geographic Scope – Where and what is the Northwest Territories?

For the purposes of this project, we considered all species found on the lands and waters included within the territorial boundary within Canada as part of the NWT (bordered in brown on the map). NWT land and waters include the ocean waters or sea floors that are part of the Beaufort Sea – Western Arctic Ocean complex, limited in the south by the mainland of the Northwest Territories and the off-shore limit of the Yukon, in the west by the International Boundary with the United States, in the east by the boundary with the Territory of Nunavut and in the North by the 90th Parallel.

Marine species known to be present in Canada were ranked separately for each of four marine ecoregional groupings in the National report: Pacific Ocean, Western Arctic Ocean, Eastern Arctic Ocean, and Atlantic Ocean. The Western Arctic Ocean (royal blue on the map) largely intersects the geographic scope of the present report. All marine species recorded in the NWT portion of the Western Arctic Ocean (WAO) were included in this report. Species known to be present in the WAO but not yet recorded in NWT waters were not included in the list but were noted elsewhere. For the marine fishes only, the Lancaster Sound region (pink on the map) was considered to be part of the WAO.

NWT Geographical Information

Total area = 1,350,000 km^2
13% of Canada



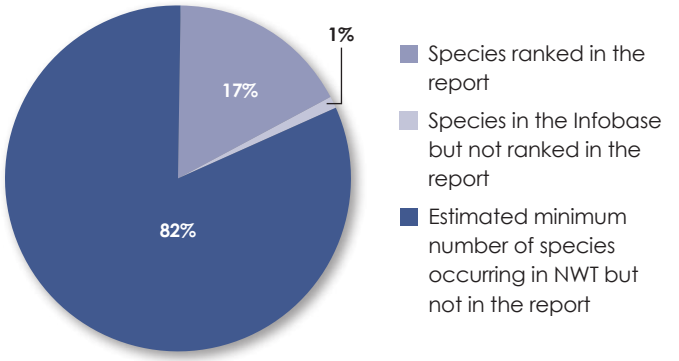
Species Scope – Which species are ranked in this report?

The *NWT Species 2016-2020 report* covers 17% of all species estimated to be in the NWT (30,000).

In this update report, we have included more groups of insects. All species of beetles known to be in the NWT are included for the first time, and we reviewed the ranks of all lady beetles, predaceous diving beetles, and ground beetles examined in 2011. The present report includes the rank of all bee species in the NWT. All macro-moths are ranked, in addition to the groups included in 2011: tiger moths, underwing moths, silk moths, and sphinx moths. New groups of insects included in this report also include vespid wasps, ants, lacewings, mayflies, stoneflies, caddisflies, flower flies and bee flies.

Additional marine species are included: corals, sponges, decapods, sea cucumbers, and sea urchins. We have started to tackle other invertebrates such as terrestrial and freshwater molluscs, other non-vascular plants such as liverworts, and other fungi such as amanita and bird's nest mushrooms. All species ranked in 2011 also have been reviewed for 2016 in the following pages.

The groups of species included in this report were determined in collaboration with all jurisdictions in Canada to help us share information and rank the general status of these species for Canada. To find Canada-wide ranks and more information. Link to www.wildspecies.ca.



Barren-ground Caribou
Photo Credit: ENR/J Nagy

Proportion of species ranked compared to all species expected to be in the NWT

Major subdivision	Total expected[a]	Species list available[b]	Status ranked in 2016	Percent ranked
Bacteria (e.g., bacteria, cyanobacteria)	*hundreds*			0%
Chromista (e.g., chromist algae, diatoms, dinoflagellates)	*thousand*			0%
Protozoa – Single celled organisms	*hundreds*			0%
Archaeplastida – Red and Green Algae	*hundreds*			0%
Basidiomycete Fungi (e.g., mushrooms, puffballs, rusts, smuts)	*thousand*	8	8	1%
Ascomycete Fungi (e.g., sac fungi, morels, yeasts, mildews)	*thousand*	2		0%
"Lower" fungi and fungus-like organisms (e.g., slime moulds)	*250*			0%
Lichens – Fungi in symbiosis with algae or cyanobacteria	*700*	357	331	47%
Plantae – Bryophytes and relatives (e.g., liverworts, mosses)	700	640	632	90%
Plantae – Vascular plants (e.g., flowering plants, trees, ferns)	*1,280*	1,214	1,183	92%
Animalia – "Simple" invertebrates (jellyfishes, corals, sponges, worms)	*thousand*	18	18	1%
Animalia – Mollusca – Mollusks	*hundreds*	83	80	20%
Animalia – Arthropods – Crustaceans	*hundreds*	21	21	3%
Animalia – Arthropods – Spiders	*700*	321	321	46%
Animalia – Arthropods – Insects	*14,000*	2,374	2,231	16%
Animalia – Echinoderms (e.g., starfishes, urchins)	*100*	12	12	12%
Animalia – Chordates – Vertebrates – Birds	320	241	241	96%
Animalia – Chordates – Vertebrates – Mammals	73	73	73	100%
Animalia – Chordates – Vertebrates – Reptiles and Amphibians	7	7	6	86%
Animalia – Chordates – Vertebrates – Fishes	*200*	116	100	50%
Total	**25,000 – 30,000[c]**	**5,487**	**5,257**	**17%**

[a] Expected number of species in NWT was estimated using this equation, Ne = C x p, where Ne = the number of arthropod species expected to be in the NWT, C = the number of known Canadian arthropod species, and p = the expected proportion of C found in NWT, based on the proportion of Canadian arthropod species known to be in NWT = 25%. *Estimated numbers are in italics*.

[b] List does include vagrant species or species not yet confirmed in the NWT.

[c] The number of recorded species in the NWT was estimated at 25,000. The total of all taxa, including species not yet recorded or described is about 30,000.

Boreal Marsh Beetle
Photo Credit: H Goulet

Species Lists and Information – The infobase

The *NWT Species Infobase* stores all the information available to rank species. The information in the Infobase is updated every year. Each piece of new information is linked to a source. Traditional knowledge and science are used as sources for updating information. Sources of information can take the form of printed publication, database, web page, video, or a personal communication. Many knowledgeable people added information from their personal observations and from their expert opinion. Adding newly available local knowledge and traditional knowledge and keeping track of new scientific knowledge is contributing greatly to the information needed to rank species

The type of information added to the *NWT Species Infobase* included adding new species, updating all species names according to current taxonomic authorities, adding new baseline information used to rank the general status of a species, updating the list of threats, and for some species, updating the results of detailed status assessments conducted by SARC in the NWT or COSEWIC in Canada.

All relevant information in the NWT Species Infobase is used to update the NWT's contribution to *Biotics 5*, a web-based biodiversity Information Management System used by NatureServe to track species ranks, including at the global level.

More details on the system can be found at http://www.natureserve.org/conservation-tools/biotics-5.

Protocol Factor Step – Sorting data and information into factors

Starting in 2011, the NWT General Status Ranking Program adopted the standard protocol developed by NatureServe to rank the conservation status of species.

The protocol uses a step-wise point and rule approach to quickly, explicitly and consistently calculate and rank the conservation status of a large number of species. The initial step in this protocol converts data and information into eight core factors organized into three categories. These core factors are described below. More details on each factor can be found in "*NatureServe Conservation Status Assessments: Factors for Evaluating Species and Ecosystems Risk*". Link to www.natureserve.ca.

Clearwing Hawk Moth Photo Credit: P Lepine

Factor definitions

Rarity	Distribution	Range Extent	**Area contained within the smallest continuous boundary drawn around all occurrences, excluding cases of vagrancy.** This factor accounts for the overall distribution of a species, and may include large sections of unsuitable habitat.
		Area of Occupancy	**Area which is actually occupied by the species.** This factor calculates the habitat essential at any stage to the survival of existing populations. It excludes all unsuitable habitats. In practice, this factor is usually estimated using 4 km^2 grid cells.
	Abundance	Population Size	**Estimated current total population of the species within the area of interest based on naturally occurring and wild individuals of mature age.** This factor has special guidelines for taking into account natural population fluctuations and for considering hybrids, re-introduced individuals, and other types of exceptions.
		Number of Occurrences	**Area of land or water where a species is present** This factor is key to the protocol and is measured using a set of very detailed standards found in the document "*Element Occurrence Data Standard*".[a]
		Area with Good Viability OR Environmental Specificity	**Area or occurrences with good viability where there is favourable population size or quality and quantity of habitat and if conditions prevail, the species is likely to persist for at least 20 years.** OR **Some information on the number of populations with good viability or the percent of areas occupied by species with good ecological integrity.** This factor helps track the probability of persistence of a species in some portion of its range or helps determine the degree a species depends on relatively scarce habitats or specific ecological factors.
Trends		Long-term Trend	**Observed, estimated, inferred, or suspected degree of change in population size, range extent, area of occupancy, number of occurrences, or areas of good viability over the next 200 years.** This factor is primarily useful for very long-lived species.
		Shorter-term Trend	**Observed, estimated, inferred, or suspected degree of change in population size, range extent, area of occupancy, number of occurrences, or areas of good viability over the next ten years, or three species generations, whichever is longer, to a maximum of 100 years.** Trends can be continuous, irregular or sporadic. Natural fluctuations are not usually considered trends, but a change from normal cycles could be considered. This factor accounts for all trends that could influence species conservation in the near future.
Threats		Threat Impact OR Intrinsic Vulnerability	**A calculation of the threat impact indicates the degree to which a species is observed, inferred or suspected to be directly affected in an area of interest.** Direct threats are human activities, or natural processes influenced by human activities, that cause destruction, degradation, or impairment to the survival of a population. Threat Impacts are usually the results of a Threat Classification Scheme exercise[b]. OR **Description of the observed, inferred or suspected degree to which characteristics of a species (e.g., life history, behaviour, or colonization capacity) make vulnerable or resilient to threats or natural catastrophes.** This factor is used only if the threat impact is not calculated.

[a] Available at www.natureserve.org/conservation-tools/standards-methods/element-occurrence-data-standard

[b] More information on the Threat Classification Scheme can be found on the IUCN web-site at www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme.

Protocol Coding Step – Rating factors using codes

The data and information were then used to rate each factor using codes in the following matrix. Factors were not rated if data were not available. Codes range from "a" to "h". Multiple codes can be used to record uncertainties in the data or information. For example, a species with a range of 100 -1,000 km^2 can be coded as "ab".

According to protocol, conditional factors such as Environmental Specificity and Intrinsic Vulnerability are rated only if their associated core factors could not be used due to lack of information. Environmental Specificity could not be used if there was adequate information on the number of occurrences and area of occupancy for a species. More details on rating factors with codes can be found in "NatureServe Conservation Status Assessments: Factors for Evaluating Species and Ecosystems Risk" Link to www.natureserve.ca.

Wood Bison
Photo Credit: S Fochuk

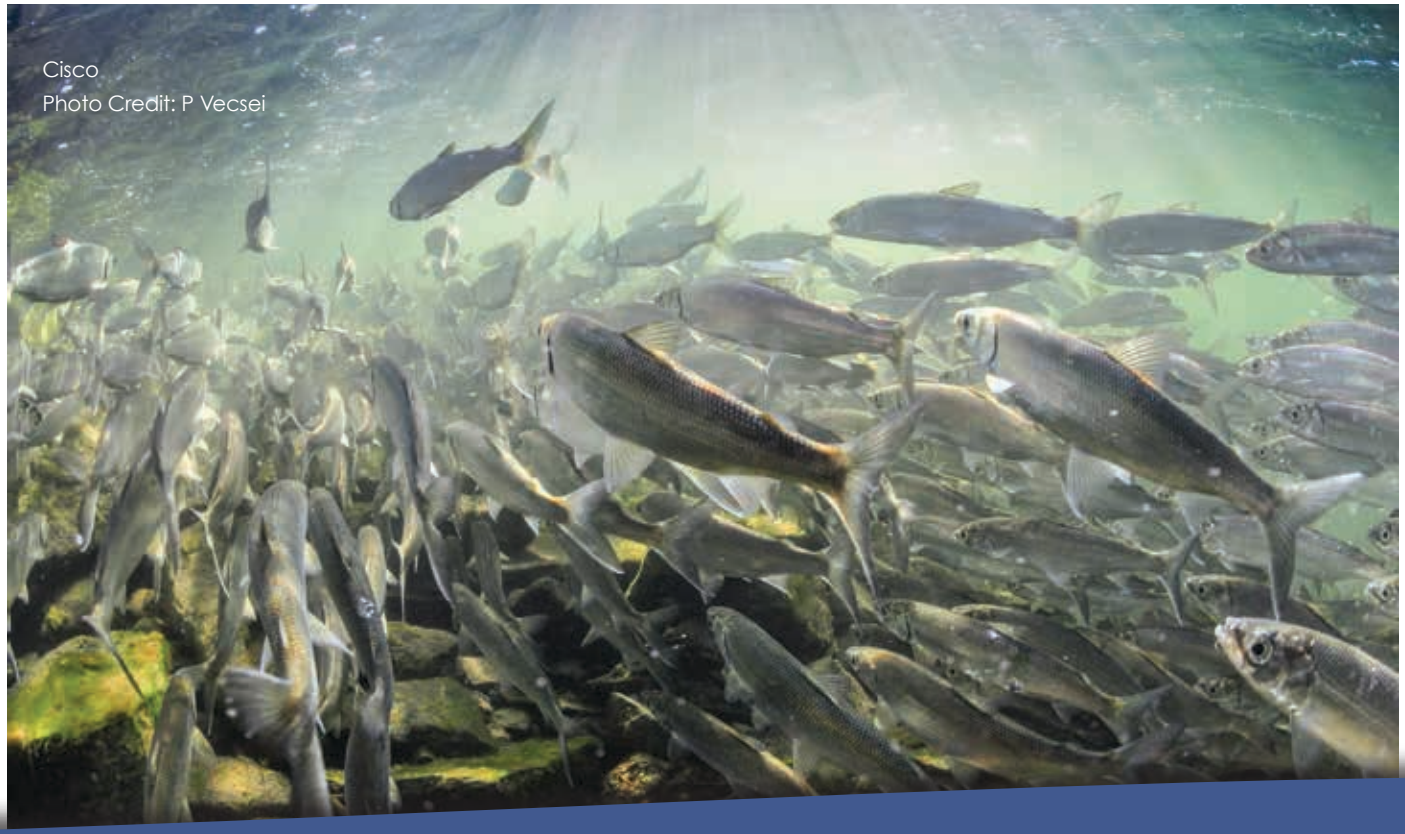
Matrix for rating factors

			Rating Codes							
		Factors	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**
Rarity	Distribution	Range Extent (km^2)	< 100	100-250	250-1,000	1,000-5,000	5,000-20,000	20,000-200,000	200,000-2,500,000	>2,500,000[a]
		Area of Occupancy (km^2)	1-4	5-10	11-20	21-100	101-500	501-2,000	2,001-10,000	>10,000
	Abundance	Population Size	1-50	50-250	250-1,000	1,000-2,500	2,500-10,000	10,000-100,000	100,000-1 million	> 1 million
		Number of Occurences	1-5	6-20	21-80	81-300	> 300			
		Area with Good Viability OR Environmental Specificity[b]	Very Small OR Very Narrow	Small OR Narrow	Moderate	Broad				
Trends		Long-term Trend (% change over 200 years)	Decline >90%	Decline 80-90%	Decline 70-80%	Decline 50-70%	Decline 30-50%	Decline 10-30%	Relatively Stable (less 10% change)	Increase
		Shorter-term Trend (% change over 3 generations or 100 years)	Decline >90%	Decline 80-90%	Decline 70-80%	Decline 50-70%	Decline 30-50%	Decline 10-30%	Relatively Stable (less 10% change)	Increase
Threats		Threat Impact OR Intrinsic Vulnerability[b]	Very High	High	Medium	Low OR Not Intrinsically Vulnerable				

[a] This extremely large range extent is not available for the NWT, as the territory's total land and ocean cover is about 1.3 million km^2.

[b] Use one factor or the other, not both. Threat Impact is usuallly calculated using a formal Threat Calculator exercise.

Rule: Information or data for at least two factors are required.



Cisco
Photo Credit: P Vecsei

Protocol Rule Step – Applying rules to rank species

Each species was placed into one of ten standard ranks. Rank categories are defined in the next pages. These definitions have changed little since the inception of the program. Hence, species with the same rank from 2000 to 2016 can be expected to have the same priorities for detailed assessment, study or management actions.

The next steps in the protocol apply rules to quickly determine some ranks.

Rule: Assign ranks for species meeting the rank definition for:

- Extirpated/Extinct
- Vagrant
- Alien
- Presence Expected
- Not Assessed

Rule: Assign a rank of Undetermined for species without the required minimum of two rated core factors.

These must include:

- One factor from Rarity- Distribution and
- One factor from Rarity- Abundance

OR

- One factor from Rarity and
- One factor from Trends or Threats

More details on applying rules to assign ranks can be found in "NatureServe Conservation Status Assessments: Methodology for Assigning Ranks" Link to www.natureserve.ca.

Protocol Point Step – Applying points to rank species

For species not already placed into a rank using the rule step, a point system was used to determine ranks. This point system was developed by NatureServe as the centre-piece of its standard protocol. The system is available as a Conservation Ranking Calculator[3]. The Rank Calculator is an automated spreadsheet programmed to implement the NatureServe ranking protocol by applying appropriate guidelines, assign points and weights to factor ratings and generate a calculated rank. A visual representation of the point system is presented in the next pages. More details about the point system to assign ranks can be found in "NatureServe Conservation Status Assessments: Methodology for Assigning Ranks" Link to www.natureserve.ca.

The ranks calculated by the NatureServe Rank Calculator are number-based sub-national ranks, called S-Ranks. The same calculator was used to calculate ranks for species across a whole country (N-ranks) or around the globe (G-ranks).

[3] The calculator and detailed instructions for its use are available at www.natureserve.org/conservation-tools/conservation-rank-calculator

Richardson's Bittercress
Photo Credit: ENR/R Decker

Protocol Definition Check – Verifying calculated ranks with definitions

In the last step in the protocol, we cross-referenced and verified each calculated rank with the definition for the relevant rank category. This step is an important aspect of the protocol, as it allowed us to resolve factor entry errors and account for uncertainties in the data. This final check ensured that the species' rarity, trends, and threats matched the definition of the final assigned rank.

To ensure continuity in our ranking system the NWT General Status Ranking Program retained the rank categories and definitions used in past reports. These ranks are published in the following species tables in the present report.

In general, calculated NatureServe S-ranks were cross-referenced to ranks used in this report following the examples below. Exceptions exist and are explained in the NWT Species infobase.

Official NWT Ranks

The official ranks for the NWT species for 2016-2020 are published in this report.

If any discrepancies exist between ranks available elsewhere, notify us and use the ranks in this report.

Contact us at wildlifeobs@gov.nt.ca or NWTbugs@gov.nt.ca

NatureServe S-ranks	NWT General Status Ranking Program Ranks
SX or SH	Extirpated/Extinct
S1 to S2	At Risk*
S1 to S2	May be at Risk
S3 **	Sensitive
S4 to S5	Secure
SU	Undetermined
SNA	Alien
SNA	Vagrant
Rank not used by NatureServe.	Presence Expected

* By rule only includes species assessed as either endangered or threatened according to COSEWIC or SARC.

** May include species assessed as of special concern according to COSEWIC or SARC

For your convenience, the NatureServe S-ranks for NWT species that were calculated and verified for 2016 also can be obtained on demand or can be searched on NatureServe's Explorer®. Link to explorer.natureserve.org. Other jurisdictions in Canada solely use the number-based NatureServe S-ranks.

The official ranks for NWT species are found in the present report in the following lists. These ranks can also be searched in the NWT Species Infobase on the ENR website. Link to www.enr.gov.nt.ca

Visual representation of NatureServe's Conservation Rank Calculator

Each box represents one point – some rated factors are weighed more than others; given more points

Factors								
Rank:	**May be at risk (S1 or S2)**			**Sensitive (S3)**		**Secure (S4 or S5)**		
Range Extent (km^2)	<100	100-250	250-1,000	1,000-5,000	5,000-20,000	20,000-200,000	200,000-2,500,000	>2,500,000
Area of Occupancy (km^2)	1-4	5-10	21-100	101-500	501-2,000	2,001-10,000	>10,000	
Population Size	1-50	50-250	250-1,000	1,000-2,500	2,500-10,000	10,000-100,000	100,000-1,000,000	>1,000,000
Number of Occurences	1-5		6-20		21-80		81-300	>300
*** Environmental Specificity**	Very Narrow			Narrow		Moderate		Broad
Threat Impacts	Very High			High		Medium		Low
**** Intrinsic Vulnerability**	Highly Vulnerable					Moderately Vulnerable		Not Vulnerable

Guideline: Calculate the average rank of at least two factors. Consult the methodology for more details on how factors are weighed. Trend factors are applied to average of the other factors to determine the final rank.

Short-term Trends (% change over three generations or 100 years)

- Decline >90%
- Decline 80-90%
- Decline 70-80%
- Decline 50-70%
- Decline 30-50%
- Decline 10-30%
- Relatively Stable (less 10% change)
- Increase

Long-term Trends (% change over 200 years)

- Decline >90%
- Decline 80-90%
- Decline 70-80%
- Decline 50-70%
- Decline 30-50%
- Decline 10-30%
- Relatively Stable (less 10% change)
- Increase

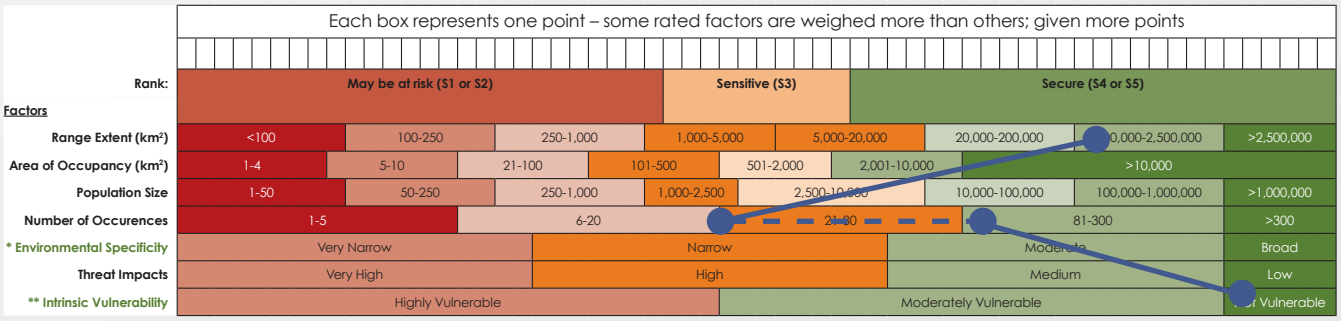
* Or use text on environmental specificity to determine rarity

** Use Threat Calculator or use text on intrinsic vulnerability to estimate threats

The NatureServe point system weighs some factors more than others, then calculates an initial rank based on rarity and threats, and finally modifies the results based on trend factors. This can be illustrated visually using a hypothetical species. Many insect species in the NWT share this type of data. The hypothetical species has been observed at six locations so far, but based on the type of habitat and other considerations, we could expect some 300 other sites (number of occurrences = 6-300, score BD). The six known sites were found over about 250,000 km^2. (Range extent score G). The species is not known to be particularly vulnerable (score C); no formal threat impacts were calculated. Trends are unknown (no score).

The calculated S-rank was S4S5. This was cross-referenced to a rank of Secure.

Visual example for a hypothetical species



For this example, the NatureServe Rank Calculator form looks like this.

Range Extent	**G**
Area of Occupancy:	
Direct estimate (ecosystems) *OR*	
4 km² grid cells (species) *OR*	
1 km² grid cells (linear species)	
Number of Occurrences	**BD**
Population Size*	
Good Viability/Ecological Integrity:	
Number of Occurrences *OR*	
Percent of Area Occupied	
Environmental Specificity (opt.)	
Assigned Overall Threat Impact	
Calculated Overall Threat Impact (FYI)	
Intrinsic Vulnerability (opt.)	**C**
Short-term Trend	
Long-term Trend	
Minimum factors requirement met?	**TRUE**
Calculated Rank	**S4S5**

Status Rank Categories – Ranking species for assessment and management

Each species was placed into one of ten standard ranks defined below.

A rank determined using rules:

1) **At Risk** = species for which a detailed assessment has recently been completed and determined that the species is at **high**[4] risk of extinction or extirpation. This is a special category used only for species that have been assessed in detail as" "Endangered" or "Threatened" in the NWT according to SARC or in Canada according to COSEWIC.

Ranks determined using the point scoring matrix

2) **May Be At Risk** = species that may be at risk of extinction or extirpation and are therefore candidates for detailed risk assessment.

   This is the highest rank that can be given to a species using the General Status Ranking Program independently of a more detailed assessment as noted in the At Risk category. **These species are ranked with the highest priority for a more detailed assessment by COSEWIC or SARC**.

3) **Sensitive** = species that are not at **high**[4] risk of extinction or extirpation but may require some special attention or protection to prevent them from becoming at risk. These species are ranked with a medium priority for a detailed assessment.

4) **Secure** = species that are neither at risk nor sensitive. These species have the lowest priority for a detailed assessment.

Rank determined using rules or the point scoring matrix:

5) **Undetermined** = species for which insufficient information, knowledge, or data is available to reliably evaluate their general status rank.

Ranks determined using rules:

6) **Not Assessed** = species which have not been examined for this report. Due to time constraints, some species have not been assessed for the present report. This information provides a list of species that should be examined soon.

7) **Alien** = species that have been introduced as a result of human activities. Most alien species have been introduced to North America from Europe and Asia. Changes in the number of alien species can be monitored as their presence and abundance may affect the status of wild species native to the NWT. Synonymous with exotic or introduced.

8) **Extirpated/Extinct** = species no longer thought to be present in the NWT (extirpated) or are believed no longer present anywhere in the world (extinct).

9) **Vagrant** = species occurring infrequently and unpredictably in the NWT. These species are outside their usual range. Synonymous with accidental. These species may be in the NWT due to unusual weather, an accident during migration, or unusual behaviour by a small number of individuals. If a species appears in the NWT with increasing predictability and more frequently, it may eventually be given a different rank. Changes in the number of vagrant species may be a good indicator of general ecosystem or climatic change.

10) **Presence Expected** = species not yet recorded in the NWT, but are expected to be present.

    These species are expected in the NWT due to their presence in adjacent jurisdiction(s), the presence of appropriate habitat in the NWT, and other evidence. The status rank is used to list species for which we need firm evidence of their presence in the NWT. When a new species is found in the NWT, the list of "presence expected" species is useful to differentiate between species that may have been in the NWT all along but simply had not been confirmed and species that are truly new to NWT, and may indicate that ecosystems are changing. This is a rank category developed in 2005 for the NWT; no other jurisdictions in Canada have adopted it.

[4] Text was added to the definition provided in 2011 to better clarify the category.

Changing Ranks – Keeping track of changes in the General Status Ranks of NWT species

With this fourth report, we continued to track how the general status ranks of NWT species change. In this report we detailed how ranks changed between 2011 and 2016. Changes in the rank of a species between 2006 and 2011 were noted in the *NWT Species 2011-2015* report. Changes in the rank of a species may occur for various reasons. We coded these reasons to be able to quickly draw up lists of species that truly have increasing or decreasing risks of becoming in danger of extirpation. These species can be set apart from species that have a different rank simply because additional information was found, an error was corrected, or for other reasons.

Four-spotted Ghost Moth Photo Credit: J Hollett

Codes marking reasons for changing the general status rank of species:

↗	**Increasing Risk**: change in rank indicating an increasing risk of becoming extirpated as a result of real changes in threats, trends, population size or a combination of these factors. ***This code can be used to estimate rate of changes in the ranks of species in the NWT.***
↘	**Decreasing Risk**: change in rank indicating a decreasing risk of becoming extirpated as a result of real improvement in threats, trends, population size or a combination of these factors. ***This code can be used to estimate rate of changes in the ranks of species in the NWT.***
∃	**Error correction**: the rank published in a previous report was in error or was missing.
#	**New**: species new to the NWT since the last report.
ⓘ	**Information**: change in rank as more information became available. This is similar to an error correction, but the rank was changed simply because more research, monitoring, or inventories were conducted, or more information became available from local or traditional sources. There is no evidence that threats to the species have changed. ***This code, in addition to all codes described above, can be used to estimate the rate in knowledge gain on species in the NWT.***
T	**Taxonomy**: change in rank due to taxonomic modifications such the reclassification of two species as a single species, or the splitting of a single species into two taxonomic entities.
A	**Detailed assessment**: change in rank to "**At Risk**" because the species status was assessed in detail during the last five years by COSEWIC in Canada or by SARC in the NWT. It was determined that the species is at high risk of extirpation or extinction.

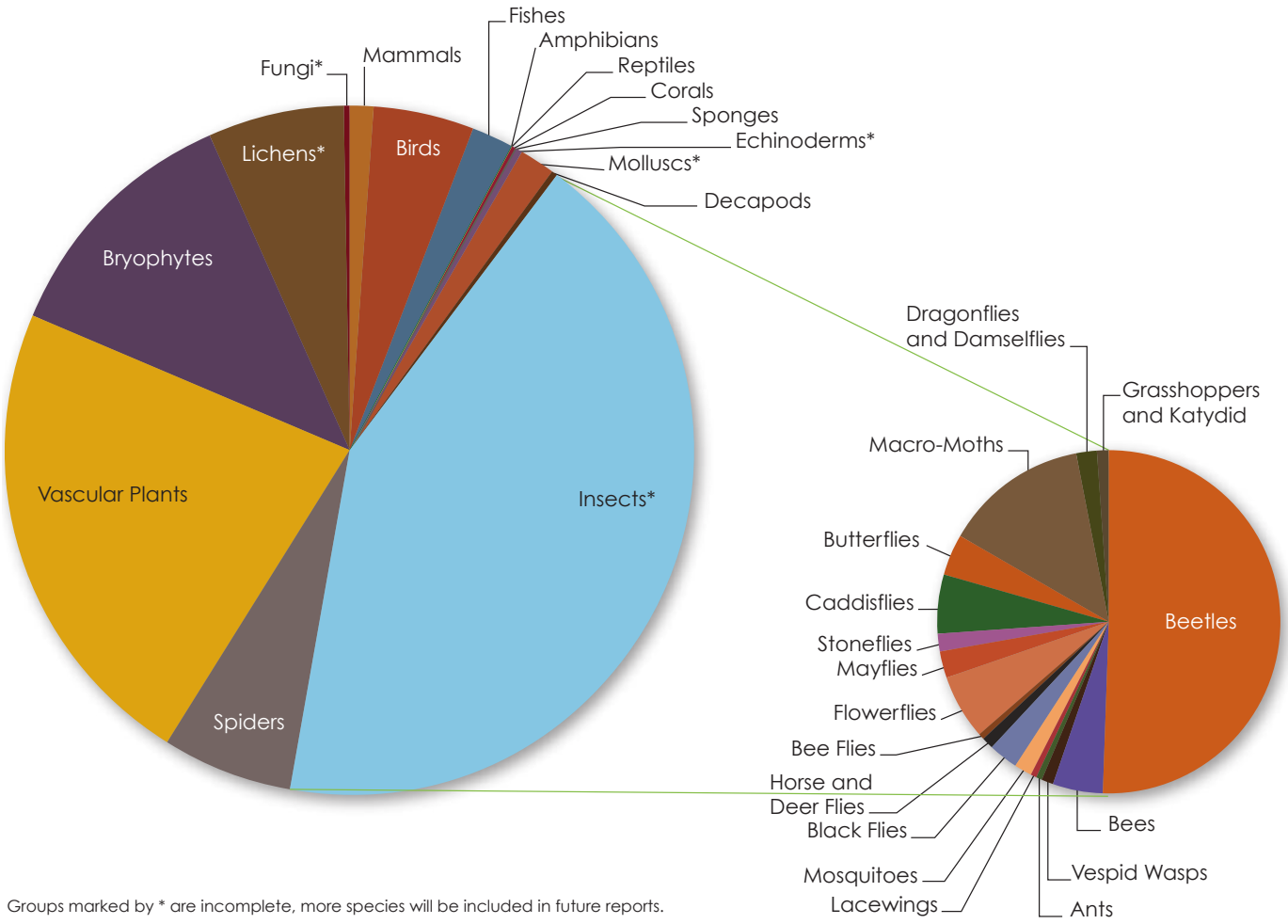
These reasons for change are similar to those used by the National General Status Ranking program, and hence can be used to compare results for the NWT and Canada at www.wildspecies.ca.

During this evaluation of the general status rank of NWT species we learned the following.

About NWT species

- The largest group of species included in this report is insects. As with elsewhere in the world, this class of invertebrates is the largest component of our native biodiversity. However, we did not have enough information to determine the rank of most insect species. Any additional survey, inventory or studies on the traditional knowledge about insects would help us examine further which species are in decline and what new species are moving north with climate change.
- The group most at risk of extirpation is amphibians, followed by terrestrial mammals and birds. Complex interactions of factors such as climate change, diseases, disturbances and habitat change are the main threats to species in the NWT.
- The group requiring the most future detailed assessments of extirpation risk is vascular plants and mosses. Our only reptile is also ranked as "may be at risk".
- About a third of the NWT species ranked in this report are secure. Many of the species ranked as undetermined may also be secure but evaluating these would require additional biodiversity surveys and inventories.

Pie chart of number of species in each major group included in the present report



Groups marked by * are incomplete, more species will be included in future reports.

Summary of the 2016 General Status Ranks of species in the NWT

Species Group	Extirpated	At Risk	May be at Risk	Sensitive	Secure	Undetermined	Alien	TOTAL[1]	Vagrant	Presence Expected
Terrestrial Mammals[1]	0	3	4	6	40	15	0	68	1	1
Marine Mammals	0	0	0	0	3	2	0	5	7	0
Birds	0	9	2	30	154	44	2	241	54	0
Fishes	0	2	0	4	35	57	2	100	4	16
Amphibians	0	2	0	1	2	0	0	5	0	1
Reptiles	0	0	1	0	0	0	0	1	0	1
Corals	0	0	0	0	0	10	0	10	0	0
Sponges	0	0	0	0	0	8	0	8	0	0
Sea Cucumbers	0	0	0	0	0	9	0	9	0	0
Sea Urchins	0	0	0	0	0	3	0	3	0	0
Freshwater Molluscs	0	0	0	0	16	40	0	56	0	0
Terrestrial Molluscs	0	0	0	0	9	14	1	24	0	0
Decapods	0	0	0	0	0	21	0	21	0	0
Beetles	0	0	0	1	178	926	25	1,130	0	15
Bees	0	1	0	2	23	81	1	108	0	4
Vespid Wasps	0	0	0	0	7	17	0	24	0	0
Ants	0	0	0	0	0	12	0	12	0	4
Lacewings	0	0	0	0	0	14	0	14	0	10
Mosquitoes	0	0	0	0	18	16	0	34	0	2
Black Flies	0	0	0	0	44	17	0	61	0	1
Horse and Deer Flies	0	0	0	0	16	9	0	25	0	0
Bee Flies	0	0	0	0	2	11	0	13	0	0
Flowerflies	0	0	0	1	52	83	0	136	0	0
Mayflies	0	0	0	0	3	54	0	57	0	1
Stoneflies	0	0	0	0	5	32	0	37	0	1
Caddisflies	0	0	0	0	10	112	0	122	0	0
Butterflies	0	0	0	4	71	16	1	92	3	1
Macro-Moths	0	0	0	0	5	294	1	300	0	4
Dragonflies and Damselflies	0	0	1	2	31	9	0	43	0	7
Grasshoppers and Katydid	0	0	0	3	15	5	0	23	0	5
Spiders	0	0	0	0	80	241	0	321	0	2
Vascular Plants	0	1	120	101	727	100	134	1,183	0	31
Liverworts	0	0	0	0	13	129	0	142	0	5
Mosses	0	0	37	61	168	224	0	490	0	3
Lichens	0	0	13	50	152	116	0	331	0	26
Amanita and Bird's Nest Mushrooms	0	0	0	0	0	8	0	8	0	0
TOTAL	0	18	178	266	1,879	2,749	167	5,257	69	141

[1] Total number of species known to occur regularly in the NWT.

Calculations done on entire species or subspecies, ecotypes or forms as detailed in lists below.

Percent[1] for each group of species

Group	Extirpated	At Risk	May be at Risk	Sensitive	Secure	Undetermined	Alien		Vagrant[2]	Presence Expected[2]
Terrestrial Mammals		4%	6%	9%	59%	22%			1%	1%
Marine Mammals					60%	40%			58%	
Birds		4%	1%	12%	64%	18%	1%		18%	
Fishes		2%		4%	35%	57%	2%		3%	14%
Amphibians		40%		20%	40%					17%
Reptiles			100%							50%
Corals						100%				
Sponges						100%				
Decapods						100%				
Sea Cucumbers						100%				
Sea Urchins					29%	71%				
Freshwater Molluscs					38%	58%	4%			
Terrestrial Molluscs						100%				
Beetles					16%	82%	2%			1%
Bees		1%		2%	21%	75%	1%			4%
Vespid Wasps					29%	71%				
Ants						100%				25%
Lacewings						100%				
Mosquitoes					53%	47%				6%
Black Flies					72%	28%				2%
Horse and Deer Flies					64%	36%				
Bee Flies					15%	85%				
Flowerflies				1%	38%	61%				
Mayflies					5%	95%				2%
Stoneflies					14%	86%				3%
Caddisflies					8%	92%				
Butterflies				4%	77%	17%	1%		3%	1%
Macro-Moths					2%	98%				1%
Dragonflies and Damselflies			2%	5%	72%	21%				14%
Grasshoppers and Katydid				13%	65%	22%				18%
Spiders					25%	75%				1%
Vascular Plants			10%	9%	61%	8%	11%			3%
Liverworts					9%	91%				3%
Mosses			8%	12%	34%	46%				1%
Lichens			4%	15%	46%	35%				7%
Amanita and Bird's Nest Mushrooms						100%				
TOTAL	0.0%	0.3%	3.4%	5.1%	36%	52%	3.2%		1.3%	2.6%

[1] Percent of TOTAL (excluding Vagrant and Presence Expected)

[2] Percent of TOTAL + Vagrant + Presence Expected.

About changes in ranks between 2011 and 2016

For species ranked in 2011 and reviewed for 2016 and for which the rank was modified, we provided the reason for that modification in a "Reason for change" column in the following lists. See *Changing Ranks – Keeping track of changes in the status of NWT species* for more information.

- Again most changes in ranks resulted from a more rigorous assessment of the perceived threats to vascular plants. Some species appeared rare because they lack inventories. Where threats were unknown the rank was changed to "undetermined" to reflect a high level of uncertainty.
- New species contributed to 19% of the changes between 2011 and 2016. This is mostly the result of recent arthropod monitoring, contributing to our increased knowledge of spiders.
- About 30% of changes in the General Status Rank were error corrections. Our adoption of the NatureServe protocol resulted in some changes in ranks with an improved accounting of uncertainties.
- Changes in extirpation risk for NWT species are tracked using this information in an indicator in the NWT State of the Environment report. Link to www.enr.gov.nt.ca/state-environment/161-trends-species-risk-index-sari.

Summary of changes in ranks between 2011 and 2016

Group	UP Risk	DOWN Risk	Correcting Error	New Species	New Information	Taxonomic Change	TOTAL	Recent Detailed Assessment
Terrestrial Mammals	5	0	0	1	1	1	8	5
Marine Mammals	0	0	3	0	2	0	5	0
Birds	2	0	19	3	17	0	41	2
Fishes	0	0	0	6	5	1	12	2
Amphibians	0	0	0	0	3	0	3	2
Reptiles	0	0	0	0	0	0	0	0
Freshwater Mussels	0	0	0	0	0	0	0	0
Lady Beetles	0	0	6	2	1	0	9	0
Predaceous Diving Beetles	0	0	0	1	1	0	2	0
Ground Beetles	0	0	11	5	3	0	19	0
Bumble Bees	0	0	0	1	8	0	9	3
Mosquitoes	0	0	4	0	0	0	4	0
Black Flies	0	0	5	3	1	0	9	0
Horse Flies and Deer Flies	0	0	4	0	0	0	4	0
Butterflies	0	0	1	0	2	0	3	0
Tiger Moths	0	0	3	0	0	0	3	0
Underwing Moths	0	0	0	1	0	0	1	0
Silk Moths	0	0	0	2	0	0	2	0
Sphinx Moths	0	0	1	2	0	0	3	0
Dragonflies and Damselflies	0	0	8	1	0	0	9	0
Grasshoppers	0	0	0	0	1	0	1	0
Spiders	0	0	4	57	37	0	98	0
Vascular Plants	0	0	17	10	134	30	191	2
Mosses	0	0	12	0	1	0	13	0
Lichens	0	0	54	1	11	0	66	0
TOTAL	6	0	152	96	228	32	515	16
%	1%	0%	30%	19%	44%	6%		

About monitoring

- Social media is proving a very useful tool to exchange information on species. In the past, requests for identification of specimens or photographs took many days or months to fulfill. With social media, this process was shortened to a few hours or even minutes. This medium allows people with similar interests on biodiversity to connect immediately and to enhance each other's knowledge. In the end, everyone's knowledge of our northern biodiversity is also augmented.
- ENR is working to enhance and update databases on all known locations of species that do not move a lot, like plants, lichens, or mosses. These databases can be shared upon request to help inventory efforts. Sharing back with this program the exact locations of new findings for species that are ranked as "May be at Risk" or "Sensitive" helps correct the rank of species that were simply less inventoried and improve the list of species that require a more detailed assessment.
- Enthusiasm for wildlife and biodiversity photography is increasing. This is improving monitoring efforts on lesser-known groups of species, such as lichens and insects.
- In the section *Further Your Knowledge – How to learn more?* in this report, we included reputable sites used by experts and biodiversity enthusiasts to exchange information on species. There is also a demand for NWT-specific field guides. More are produced each year, and they are proving of great value to help NWT residents gather more information on many species. Instructions on how to obtain these field guides can be found in the section *Further Your Knowledge – How to learn more?* in this report.
- Easy-to-remember e-mail addresses, such as WILDLIFEOBS@gov.nt.ca, NWTBUGS@gov.nt.ca, also facilitated information sharing.
- The NWT General Status Ranking Program became a member of NatureServe Canada in 2011. The program adopted and integrated our knowledge on NWT species into the global system for ranking species called BIOTICS 5. This system will be available to all program members in the NWT within the next five years. Our participation in the NatureServe program ensures that the results of our efforts in biodiversity monitoring in the NWT are shared with others in Canada, North America and the world.

Canadian Toad
Photo Credit: JF Bienentreu

6 Ranked Species Lists – What are the details?

The general status ranking process results in lists of species with general status ranks. These are detailed in the following pages. Each list is organized in a similar manner.

Common Names and Scientific Species Names
Each species was listed using the accepted standard nomenclature for each group. Details on exceptions were given in footnotes. Synonyms, old names, and local names can be found online in the *NWT Species Infobase* or are available as a database on request. For some species groups, widely used common names were not available. Common names were developed for this report or for the national report with the help of experts in each species group, based on the scientific names and the species' ecology and distribution.

General Status Ranks
Each species was given a general status rank according to the process described in this report. For some species with very high cultural and economic importance, we also provided a rank for each subspecies, population, stock, or ecotype present in the NWT.

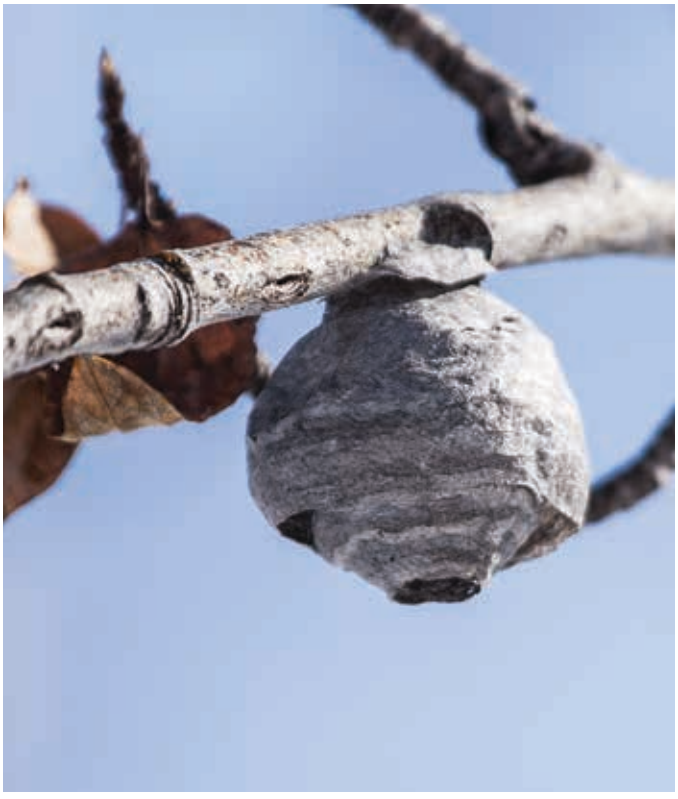
Change Notes
Reasons for changing the rank of a species between 2006 and 2011 are noted in the following pages using the codes described in Data Sources and Methods.

Detailed Assessments in Canada and the NWT
One of the main objectives of the *General Status Ranking Program* is to provide a prioritized list of species that 'May be at Risk" and may need to be assessed in a more detailed manner.

COSEWIC conducts this detailed assessment for species in Canada. For your convenience, each table provides the status for all species (subspecies or populations) that occur in the NWT and have already been assessed in a detailed manner by COSEWIC as of December 2016. Please consult current and additional status assessments on the COSEWIC web page. Link to www.cosewic.gc.ca. In Canada, species can be legally listed under the *Species at Risk Act* (SARA). Legal listing is based on the detailed assessments performed by COSEWIC. NWT species listed in Canada under SARA are not noted in this report; please refer to the official SARA registry for more information. Link to www.sararegistry.gc.ca.

In the NWT, SARC was tasked under the *Species at Risk (NWT)* Act to assess species in more detail. For your convenience, each table provides the status for all species (subspecies or populations) that have already been assessed in a detailed manner by SARC as of December 2016. In the NWT, species can be legally listed under the *Species at Risk (NWT) Act*. Legal listing is based on the detailed assessments performed by SARC. Species listed in the NWT under the Act are not noted in this report; please refer to the official NWT Species At Risk website for more information Link to www.nwtspeciesatrisk.ca

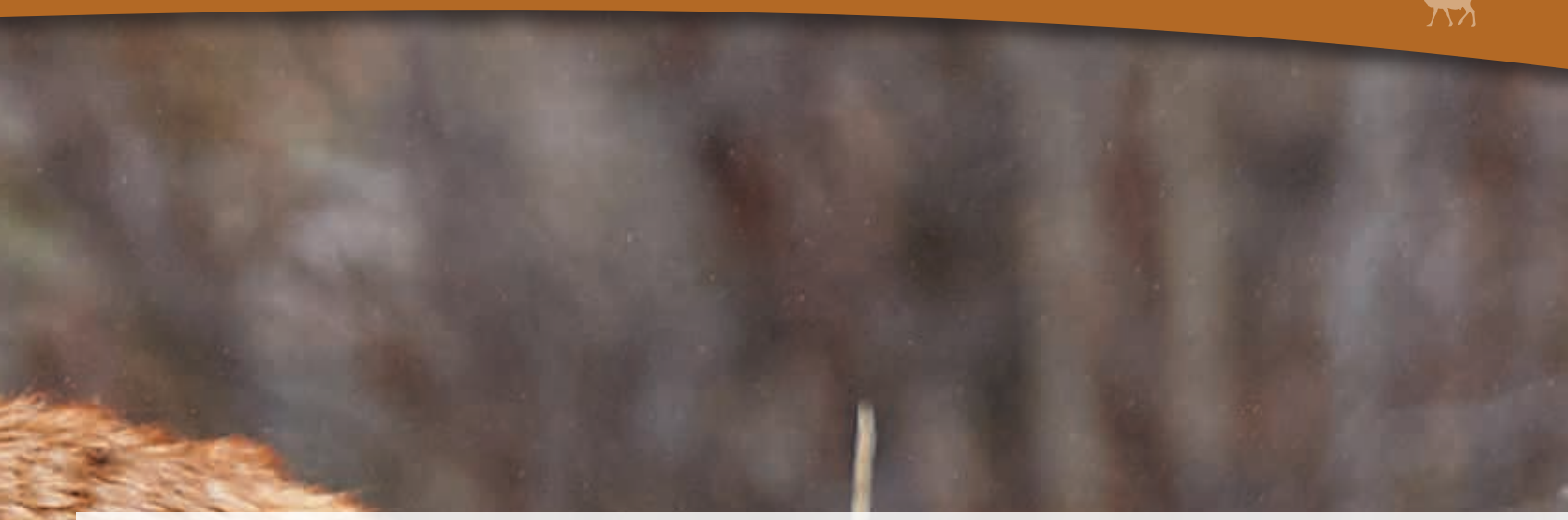
Species Ranking in the Global Level
Species that are in danger of extirpation in the NWT may be quite common in the rest of the world. On the other hand, species that are under threat in other countries may be secure in the NWT. For your convenience, each table provides the Global Rank for species of Global Conservation Concern (G1 – G3) according to NatureServe as of 2016. Please consult current and additional Global Ranks on the NatureServe web page. Link to www.natureserve.org.



Common Aerial Yellowjacket Nest Photo Credit: G Vizniowski

Red Fox
Photo Credit: S Fochuk

6.1 Terrestrial Mammals



Mammals have hairy bodies, and have warm blood, and feed their young milk. Terrestrial mammals live on land; those that live exclusively in the ocean are grouped together and ranked in the next list.

Terrestrial mammals include some of the most important species to people's well-being in the NWT. They are central to our cultures and economies as a source of food, clothing and tools, as well as spiritual connections to the land. The importance of terrestrial mammals to people and to northern ecosystems explains why a substantial amount of time and resources are invested in their study and monitoring. In the past five years, most changes in ranks for terrestrial mammals resulted from increasing risk of extirpation.

One sub-species of caribou, barren-ground caribou (*Rangifer tarandus groenlandicus*), is the most closely monitored of all terrestrial mammals in the NWT. During the past five years, most herds of barren-ground caribou have continued to decline but it is hoped that current management actions will lead to some recovery. The other two sub-species of caribou present in the NWT, Peary (*R. t. pearyi*) and woodland caribou (*R.t. caribou*) also are closely monitored. The rank for boreal caribou and barren-ground caribou were updated to "At Risk" after their assessment as a threatened species in Canada.

Some species are doing better, but their rank has not changed. For example, wolverine (*Gulo gulo*) was assessed in detailed by SARC in 2014 as a species "Not at Risk" in the NWT, but still was ranked as sensitive mostly due to intrinsic characteristics such as low reproduction rates.

The ranks of two bats (little brown myotis and northern myotis) were updated to "At Risk" after their assessment as Endangered in Canada. One additional bat species, the silver-haired bat, was confirmed present in the NWT during the past five years. We added a new species of shrew to our list after the taxonomy of the water shrew was revised into two species: the western water shrew (*Sorex navigator*) can be found in the mountains, and the American water shrew (*S. palustris*) is found further east with a gap in the distribution between the two species.

In the NWT, many agencies, boards, communities, renewable resources councils and knowledgeable people are working together to ensure all terrestrial mammals are used in a sustainable manner and remain part of our rich northern biodiversity.

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List 1. **Terrestrial Mammals**

There are 68 species of terrestrial mammals known to occur regularly in the NWT. One additional species is vagrant, and another species, the eastern red bat, is expected to occur in the NWT. Three species are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Nomenclature follows Bradley et al. 2014.

Collared Pica Photo Credit: S Carriere

Arctic Ground Squirrel
Photo Credit: J Nagy

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Chordata – Mammalia					**Chordates – Mammals**
Artiodactyla – Bovidae					Even-toed ungulates – Bovids
Wood Bison	*Bison bison athabascae*[c]	At Risk		Threatened – 2016	Special Concern – 2013
Mountain Goat	*Oreamnos americanus*	May Be At Risk			
Muskox	*Ovibos moschatus*	Secure			
Dall's Sheep	*Ovis dalli dalli*[d]	Secure			
Artiodactyla – Cervidae					Even-toed ungulates – Deer-like mammals
Moose	*Alces americanus*	Secure			
Elk (Wapiti)	*Cervus canadensis*	Undetermined			
Mule Deer	*Odocoileus hemionus*	Undetermined			
White-tailed Deer	*Odocoileus virginianus*	Secure			
Boreal Caribou	*Rangifer tarandus caribou*[e]	At Risk	A, ↗[3]	Threatened – 2012	Threatened – 2014
Northern Mountain Caribou	*Rangifer tarandus caribou*[e]	Sensitive	A, ↗[4]		Special Concern – 2014
Barren-ground Caribou	*Rangifer tarandus groenlandicus*[e]	At Risk	A, ↗[3]		Threatened – 2016
Dolphin-Union Caribou	*Rangifer tarandus groenlandicus x pearyi*[e]	Sensitive			Special Concern – 2004
Peary Caribou	*Rangifer tarandus pearyi*[e]	At Risk		Threatened – 2013	Threatened – 2015
Carnivora – Canidae					Carnivores – Canines
Coyote	*Canis latrans*	Secure			
Grey Wolf	*Canis lupus*	Secure			
Arctic Fox	*Vulpes lagopus*	Secure			
Red Fox	*Vulpes vulpes*	Secure			
Carnivora – Felidae					Carnivores – Felines
Canadian Lynx	*Lynx canadensis*	Secure			
Cougar	*Puma concolor*	Undetermined			
Carnivora – Mephitidae					Carnivores – Skunks
Striped Skunk	*Mephitis mephitis*	Undetermined			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Carnivora – Mustelidae					Carnivores – Mustelids
Wolverine	*Gulo gulo*	Sensitive		Not at Risk – 2014	Special Concern – 2014
North American River Otter	*Lontra canadensis*	Secure			
American Marten	*Martes americana*	Secure			
Ermine (Short-tailed Weasel)	*Mustela erminea*	Secure			
Least Weasel	*Mustela nivalis*	Secure			
Fisher	*Pekania pennanti*	Sensitive			
American Mink	*Vison vison*	Secure			
Carnivora – Procyonidae					Carnivores – Raccoons
Northern Raccoon	*Procyon lotor*	Vagrant			
Carnivora – Ursidae					Carnivores – Bears
American Black Bear	*Ursus americanus*	Secure			
Grizzly Bear	*Ursus arctos*	Sensitive			Special Concern – 2012
Polar Bear	*Ursus maritimus*	Sensitive		Special Concern – 2012	Special Concern – 2008 / G3 – 2008
Chiroptera – Vespertilionidae					Hand-winged mammals – Vesper bats
Big Brown Bat	*Eptesicus fuscus*	May Be At Risk	ⓘ[5]		
Silver-haired Bat	*Lasionycteris noctivagans*	Undetermined	#		
Eastern Red Bat	*Lasiurus borealis*[f]	Presence Expected			
Hoary Bat	*Lasiurus cinereus*	Undetermined			
Long-eared Myotis	*Myotis evotis*	May Be At Risk			
Little Brown Myotis	*Myotis lucifugus*	At Risk	A, ↗[2]		Engangered – 2012 / G3 – 2015
Northern Myotis	*Myotis septentrionalis*	At Risk	A, ↗[2]		Engangered – 2013 / G1G2 – 2014
Long-legged Myotis	*Myotis volans*	May Be At Risk			

Ermine Photo Credit: D Johnson

Grizzly Bear Photo Credit: E Graydon

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Lagomorpha – Leporidae					Hare-like mammals – Hares
Snowshoe Hare	*Lepus americanus*	Secure			
Arctic Hare	*Lepus arcticus*	Secure			
Lagomorpha – Ochotonidae					Hare-like mammals – Pikas
Collared Pika	*Ochotona collaris*	Sensitive			Special Concern – 2011
Rodentia – Castoridae					Rodents – Beavers
Beaver	*Castor canadensis*	Secure			
Rodentia – Cricetidae					Rodents – Cricetid mice
Nearctic Collared Lemming	*Dicrostonyx groenlandicus*	Secure			
Richardson's Collared Lemming	*Dicrostonyx richardsoni*	Undetermined			
Nearctic Brown Lemming	*Lemmus trimucronatus*	Secure			
Long-tailed Vole	*Microtus longicaudus*	Undetermined			
Singing Vole	*Microtus miurus*	Undetermined			
Root Vole	*Microtus oeconomus*	Secure			
Meadow Vole	*Microtus pennsylvanicus*	Secure			
Taiga Vole	*Microtus xanthognathus*	Secure			
Southern Red-backed Vole	*Myodes gapperi*	Secure			
Northern Red-backed Vole	*Myodes rutilus*	Secure			
Bushy-tailed Woodrat	*Neotoma cinerea*	Undetermined			
Common Muskrat	*Ondatra zibethicus*	Secure			
North American Deer Mouse	*Peromyscus maniculatus*	Secure			
Eastern Heather Vole	*Phenacomys ungava*	Secure			
Northern Bog Lemming	*Synaptomys borealis*	Secure			
Rodentia – Dipodidae					Rodents – Jumping mice
Meadow Jumping Mouse	*Zapus hudsonius*	Undetermined			
Rodentia – Erethizontidate					Rodents – New world porcupines
North American Porcupine	*Erethizon dorsatum*	Secure			
Rodentia – Sciuridae					Rodents – Squirrels
Northern Flying Squirrel	*Glaucomys sabrinus*	Secure			
Hoary Marmot	*Marmota caligata*	Undetermined			
Woodchuck	*Marmota monax*	Secure			
Least Chipmunk	*Tamias minimus*	Secure			
Red Squirrel	*Tamiasciurus hudsonicus*	Secure			
Arctic Ground Squirrel	*Urocitellus parryii*	Secure			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Soricomorpha – Soricidae					Shrew-like mammals – Shrews
Arctic Shrew	*Sorex arcticus*	Secure			
Cinereus Shrew	*Sorex cinereus*	Secure			
American Pigmy Shrew	*Sorex hoyi*	Secure			
Dusky Shrew	*Sorex monticolus*	Secure			
Western Water Shrew	*Sorex navigator*	Undetermined	T[6]		
American Water Shrew	*Sorex palustris*	Secure			
Tundra Shrew	*Sorex tundrensis*	Undetermined			
Barren Ground Shrew	*Sorex ugyunak*	Undetermined			

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. SARC Status: Status for a species in the NWT if it ihas already been assessed in detail by SARC as of December 2016. COSEWIC Status: Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[c] General Status Rank is given for wood bison only. The subspecies plains bison (*B. b. bison*), including suspected hybrids of plains-wood bison (*B. b. bison x athabascae*) are "not assessed".

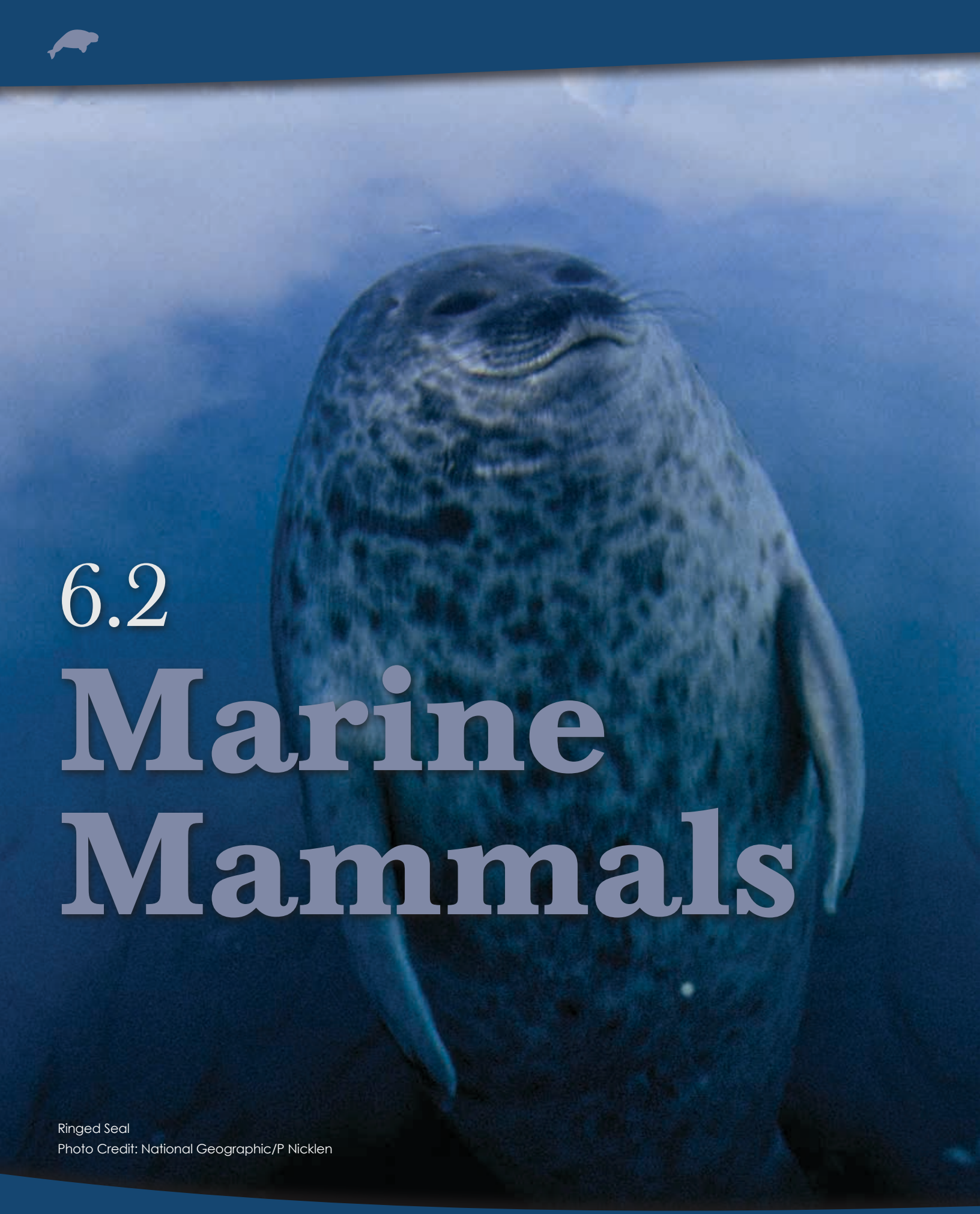
[d] General Status Rank is given for Dall's sheep only. No other subspecies are present in the NWT.

[e] General Status Ranks are given for five subspecies/ecotypes of caribou separately. The species caribou (*Rangifer tarandus*) as a whole was assigned a rank of "sensitive".

[f] Possible identification of eastern red bat using ecolocation detectors in Nahanni National Park Reserve (2006), no specimen confirmed.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant

Canadian Lynx
Photo Credit: D Johnson



6.2 Marine Mammals

Ringed Seal
Photo Credit: National Geographic/P Nicklen

Like all mammals, marine mammals are vertebrates, have mammary glands to produce milk to nurse their young, and are warm-blooded (endothermic). Unlike terrestrial mammals, marine mammals are fully adapted for life in water. They are streamlined for swimming and can dive for long periods of time, although, like other mammals, they breathe air and surface from time to time to renew their oxygen supply.

Two groups of marine mammals occur in the NWT sections of the Western Arctic Ocean. The first group is the pinnipeds, a class of carnivores fully adapted to life in water. Some pinnipeds are year-round residents in the NWT (bearded seal and ringed seal), and others are not regularly seen here (hooded seal, harbour seal, northern fur seal, steller sea lion, and walrus). The second group, the cetaceans, includes only three species that can be considered regular seasonal migrants to the western Arctic Ocean: bowhead whale, beluga whale and grey whale. The latter was not likely a regular visitor in the past, but now is sighted more regularly. Other cetacean species, such as the killer whale and the narwhal, are still occasional visitors.

Our waters have fewer species of marine mammals than are found in the Eastern Arctic waters of Canada: five species are found regularly in the Western Arctic compared with 10 in the east.

Today, as in the past, marine mammals are an important nutritional and cultural resource for Aboriginal harvesters and their families. Research and stock assessment programs monitor harvests and stocks to ensure that stocks are stable and healthy. Marine mammals are also becoming increasingly important for eco-tourism, and monitoring is used to mitigate potential effects of this activity to the extent possible. Future industrial development in the offshore Beaufort Sea may adversely affect marine mammals, particularly through ensonification of important offshore habitats by industrial underwater noise. The potential cumulative impacts of such developments on marine mammals are an area of concern and are being monitored to the extent practical.

Seals and beluga are reasonable indicators of environmental quality and change, and as they are positioned high in the food chain, they are useful indicators of ecosystem productivity and shifts.

They also ingest and accumulate contaminants, so the levels of contaminants in their tissues, such as mercury, provide a general indication of natural and anthropogenic substances found in the environment.

Current long-term research on marine mammals in the NWT includes harvest-based monitoring, assessment of potential impacts of industry, and documenting habitat use, movements and behaviour with satellite tracking. Involvement of northerners in management, research and monitoring programs is an important aspect of these programs, providing much needed information regarding marine mammals in the NWT.

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Fisheries and Oceans Canada
Yellowknife, NT

List 2. **Marine Mammals**

Five species of marine mammals can be found regularly in the NWT marine waters of the Western Arctic Ocean. Seven additional species are vagrant and seen only rarely. One species is of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Nomenclature follows Bradley *et al*. 2014. Harp seals (*Pagophilus groenlandicus*) are vagrant to the Western Arctic Ocean but not to NWT waters.

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Chordata – Mammalia				**Chordates – Mammals**
Carnivora – Pinnipedia – Odobenidae				Carnivores – Pinnipeds – Walrus
Walrus	*Odobenus rosmarus*[c]	Vagrant		Atlantic subspecies = Special Concern – 2006
Carnivora – Pinnipedia – Otariidae				Carnivores – Pinnipeds – Eared seals
Northern Fur Seal	*Callorhinus ursinus*	Vagrant		Threatened – 2010
Steller Sea Lion	*Eumetopias jubatus*	Vagrant	∃[6]	Special Concern – 2013
Carnivora – Pinnipedia – Phocidae				Carnivores – Pinnipeds – True seals
Hooded Seal	*Cystophora cristata*	Vagrant	∃[6]	
Bearded Seal	*Erignathus barbatus*	Undetermined	∃[4]	
Harbour Seal	*Phoca vitulina*	Vagrant		
Ringed Seal	*Pusa hispida*	Secure		
Cetacea – Balaenidae				Whales – Baleen whales
Bowhead Whale	*Balaena mysticetusd*	Secure	ⓘ[3]	Bering-Chukchi-Beaufort population = Special Concern – 2009 / G3 – 2003
Cetacea – Delphinidae				Whales – Dolphins and realtives
Killer Whale	*Orcinus orcae*	Vagrant		

Bowhead Whale
Photo Credit: National Geographic/P Nicklen

Ringed Seal
Photo Credit: DFO

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Cetacea – Eschrichtiidae				Whales – Grey whales
Grey Whale	*Eschrichtius robustusf*	Undetermined	ⓘ[9]	Northeast Pacific population = Special Concern – 2004
Cetacea – Monodontidae				Whales – White whales
White Whale (Beluga)	*Delphinapterus leucas*	Secure		
Narwhal	*Monodon monoceros*	Vagrant		Special Concern – 2004

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. COSEWIC Status: Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no marine mammal has been assessed by SARC. Note that SARC does not have the legislated authority to assess a species under federal jurisdiction.

[c] Two subspecies of walrus are vagrant in NWT waters. The Atlantic walrus (*O. r. rosmarus*) is seen in the water of the High Arctic Archipelago and the Pacific walrus (*O.r. divergens*) is seen nearer the Beaufort Sea coast. Local knowledge indicates that the Pacific subspecies having long tusks is seen most recently.

[d] Bowhead whale was assessed in detail by COSEWIC in 2009. Newer information indicates that this species is not at risk and was ranked as secure. The species is scheduled to be re-assessed by COSEWIC using new information in 2019.

[e] All killer whales that regularly frequent Canadian waters were assessed by COSEWIC in 2008. This assessement did not include the population that irregularly visits the NWT waters of the Western Arctic Ocean as these are not deemed part of Canada's biodiversity. As such they are ranked as Vagrant.

[f] Grey whales (Northeast Pacific population) were assessed as a species of special concern by COSEWIC in 2004. This species is seen more often than in the past in the NWT's section of the Beaufort Sea feeding in summer. But there is still very little information on this species in our waters hence the species was ranked as "undetermined".

1 Changed from At Risk
2 Changed from May Be at Risk
3 Changed from Sensitive
4 Changed from Secure
5 Changed from Undetermined
6 Changed from Not Assessed
7 Changed from Alien
8 Changed from Extirpated
9 Changed from Vagrant
10 Changed from Presence Expected

6.3 Birds

White Pelican with Arctic Lamprey
Photo Credit: J McKinnon

Birds are feathered vertebrates capable of flight, though some species have lost this adaptation. Eighty-seven percent of the bird species breeding in the NWT are migratory. The remaining 13% are year-round residents. Many species that breed in the Arctic will winter in South America, travelling thousands of kilometers. The Arctic Tern, for example, has the longest migration of any bird and flies 40,000 km from its Arctic breeding grounds to winter in Antarctica! .

Population declines of migratory birds

Under the federal *Migratory Birds Convention Act*, the Government of Canada is lawfully required to protect migratory bird populations. All other birds are protected by the territorial *Wildlife Act*. As such, Canadian Wildlife Service (CWS), Environment and Climate Change Canada of the Government of Canada and the GNWT work on various projects to ensure bird populations are maintained within Canada and the NWT, respectively. Since 1970, monitoring programs have shown that Canadian breeding bird populations have declined on average by 12%. Certain groups, like grassland birds, aerial insectivores and shorebirds, are experiencing the steepest declines. For example, the Olive-sided Flycatcher, an aerial insectivore, has declined 79% over the last 37 years and overall, Arctic shorebird populations have declined by 60%. Populations are thought to be decreasing due to a variety of reasons such as habitat loss, pesticide use, and climate change.

Research on waterfowl, waterbirds and seabirds

The CWS coordinates multiple programs to monitor waterfowl in the NWT. Many of these programs generate population trend estimates. The Yellowknife Study Area program has been monitoring waterfowl and waterbirds for over 20 years. Some surveys, like the Cape Perry Thick-billed Murre survey, or the Pacific Common Eider survey, census all individuals in an area and provide population estimates for a region.

Hoary Redpoll Photo Credit: C Eckert

Research on shorebirds

CWS coordinates the Arctic Program for Regional and International Shorebird Monitoring (Arctic PRISM), a program designed to address concerns about shorebird population declines. The program is in collaboration with the Government of the United States and is conducted across the North American Arctic. Arctic PRISM is in its 15th year and provides data on population size and trends, as well as shorebird distribution, abundance and habitat use. The data collected through Arctic PRISM is some of the first bird and habitat data ever collected in many areas of the Arctic and was integral to the 2016 General Status Rank review.

Landbird research

CWS coordinates a number of programs to monitor landbirds, particularly songbirds, in the NWT. Most of these programs are new. Their main objective is to understand species distribution, habitat associations, and responses to forest fires. The plan is to continue to run these programs to monitor bird populations and provide long-term trend information. CWS also coordinates the North American Breeding Bird Survey (BBS), an avian survey used to collect long-term data on bird population status and trends throughout North America. The BBS has been running for 50 years and is the primary source for bird status and trends in Canada. Lastly, the Liard Valley Long-term Monitoring Program, a CWS program, has been running for almost 20 years in the southwestern NWT and was an important data source to inform the 2016 General Status Rank review.

Raptor research

Raptor monitoring was conducted extensively in the 1980s and 1990s all over the NWT. Most surveys have not been repeated systematically since then, except for Peregrine Falcons. Intensive falcon surveys are done every five years along the Mackenzie River, on the barrenlands, in Tuktut Nogait National Park and Wood Buffalo National Park. These surveys are conducted in collaboration with Parks Canada, industry and GNWT. The GNWT is also tracking location and visit data on all known raptor sites in the NWT. This information is often provided from NWT resident's incidental observations during a trip on the land, or provided by industry during impact assessment work. This data is stored in the Nunavut-Northwest Territories Raptor Database, the largest database on birds of prey in North America.

Updating data

A more thorough investigation of old records and literature resulted in the increased number of recorded vagrant bird species for the NWT. Additional data on species population size, distribution and trend were used. These data came from a variety of sources including the research mentioned above. BBS trends were a primary resource and the volunteer-based global online bird observation tool "eBird" also provided information on distribution where studies are not currently conducted. Please consider submitting any observations you can, of any bird species, from any season, to www.ebird.ca.

Over the next five years, through long-term monitoring programs and new initiatives, we hope to gather more information to help inform bird status ranks in the NWT. Continued monitoring, securing protected areas, and working collaboratively on conservation priorities are important to the preservation of bird populations within the NWT. In addition, international collaboration is the key to truly preserving our feathered friends, which spend time across many international borders.

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Peregrine Falcon
Photo Credit: G Court

List 3. **Birds**

A total of 241 species of birds can be observed regularly in the NWT. Of these, two species are alien to the NWT. An additional 54 species are vagrant and have been observed irregularly, sometimes only once. Two species are of global conservation concern. Species are listed alphabetically according to *Family* organized taxonomically according to the 7th North American bird list and supplements published by the American Ornithologist Union (AOU). Nomenclature follows AOU (2016).

Peregrine Falcon
Photo Credit: G Court

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Chordata – Aves					**Chordates – Birds**
Anseriformes – Anatidae					Waterfowl – Ducks and geese
Northern Pintail	*Anas acuta*	Sensitive	B		
American Wigeon	*Anas americana*	Secure	B		
Northern Shoveler	*Anas clypeata*	Secure	B		
Green-winged Teal	*Anas crecca*	Secure	B		
Cinnamon Teal	*Anas cyanoptera*	Vagrant			
Blue-winged Teal	*Anas discors*	Secure	B		
Eurasian Wigeon	*Anas penelope*	Vagrant			
Mallard	*Anas platyrhynchos*	Secure	B		
American Black Duck	*Anas rubripes*	Vagrant			
Gadwall	*Anas strepera*	Undetermined	B		
Greater White-fronted Goose	*Anser albifrons*	Secure	B		
Lesser Scaup	*Aythya affinis*	Sensitive	B		
Redhead	*Aythya americana*	Secure	B		
Ring-necked Duck	*Aythya collaris*	Secure	B		
Greater Scaup	*Aythya marila*	Secure	B		
Canvasback	*Aythya valisineria*	Secure	B		
Brant	*Branta bernicla*	Sensitive	B		
Canada Goose	*Branta canadensis*	Secure	B		
Cackling Goose	*Branta hutchinsii*	Secure	B		
Bufflehead	*Bucephala albeola*	Secure	B		
Common Goldeneye	*Bucephala clangula*	Secure	B		
Barrow's Goldeneye	*Bucephala islandica*	Secure	B		
Snow Goose	*Chen caerulescens*	Secure	B		
Ross's Goose	*Chen rossii*	Secure	B		
Long-tailed Duck	*Clangula hyemalis*	Sensitive	B		
Trumpeter Swan	*Cygnus buccinator*	Secure	B	ⓘ[3]	
Tundra Swan	*Cygnus columbianus*	Secure	B		

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Harlequin Duck	*Histrionicus histrionicus*	May Be At Risk	B		
Hooded Merganser	*Lophodytes cucullatus*	Secure	B		
Black Scoter	*Melanitta americana*	Sensitive	B		
White-winged Scoter	*Melanitta fusca*	Sensitive	B		
Surf Scoter	*Melanitta perspicillata*	Sensitive	B		
Common Merganser	*Mergus merganser*	Secure	B		
Red-breasted Merganser	*Mergus serrator*	Secure	B		
Ruddy Duck	*Oxyura jamaicensis*	Secure	B		
Spectacled Eider	*Somateria fischeri*	Vagrant		∃[6]	
Common Eider	*Somateria mollissima*	Sensitive	B		
King Eider	*Somateria spectabilis*	Sensitive	B, W		
Galliformes – Phasianidae					Chickens – Grouse and relatives
Ruffed Grouse	*Bonasa umbellus*	Secure	B, W		
Dusky Grouse	*Dendragapus obscurus*	Undetermined	B, W		
Spruce Grouse	*Falcipennis canadensis*	Secure	B, W		
Willow Ptarmigan	*Lagopus lagopus*	Secure	B, W		
White-tailed Ptarmigan	*Lagopus leucura*	Undetermined	B, W		
Rock Ptarmigan	*Lagopus muta*	Secure	B, W		
Sharp-tailed Grouse	*Tympanuchus phasianellus*	Secure	B, W		
Gaviiformes – Gaviidae					Loons – Loons
Yellow-billed Loon	*Gavia adamsii*	Sensitive	B	ⓘ[5]	
Common Loon	*Gavia immer*	Secure	B		
Pacific Loon	*Gavia pacifica*	Secure	B		
Red-throated Loon	*Gavia stellata*	Secure	B		
Podicipediformes – Podicipedidae					Grebes – Grebes
Horned Grebe	*Podiceps auritus*	Sensitive	B		Special Concern – 2009
Red-necked Grebe	*Podiceps grisegena*	Secure	B		
Eared Grebe	*Podiceps nigricollis*	Undetermined	B	ⓘ[9]	
Pied-billed Grebe	*Podilymbus podiceps*	Undetermined	B	∃[3]	

Pacific Loon
Photo Credit: S Fochuk

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Procellariiformes – Procellariidae					Shearwaters – Shearwaters
Short-tailed Shearwater	*Puffinus tenuirostris*	Vagrant		∃[6]	
Suliformes – Phalacrocoracidae					Cormorants – Cormorants
Double-crested Cormorant	*Phalacrocorax auritus*	Vagrant		∃[5]	
Pelecaniformes – Pelecanidae					Pelican-like birds – Pelicans
American White Pelican	*Pelecanus erythrorhynchos*	May Be At Risk	B		
Pelecaniformes – Ardeidae					Pelican-like birds – Herons
Great Egret	*Ardea alba*	Vagrant			
Great Blue Heron	*Ardea herodias*	Vagrant			
American Bittern	*Botaurus lentiginosus*	Sensitive	B		
Cattle Egret	*Bubulcus ibis*	Vagrant			
Snowy Egret	*Egretta thula*	Vagrant			
Accipitriformes – Cathartidae					Hawk-like birds of prey – American vultures
Turkey Vulture	*Cathartes aura*	Vagrant			
Accipitriformes – Pandionidae					Hawk-like birds of prey – Osprey
Osprey	*Pandion haliaetus*	Secure	B		
Accipitriformes – Accipitridae					Hawk-like birds of prey – Hawks
Cooper's Hawk	*Accipiter cooperii*	Vagrant			
Northern Goshawk	*Accipiter gentilis*	Secure	B, W		
Sharp-shinned Hawk	*Accipiter striatus*	Secure	B		
Golden Eagle	*Aquila chrysaetos*	Secure	B		
Red-tailed Hawk	*Buteo jamaicensis*	Secure	B		
Rough-legged Hawk	*Buteo lagopus*	Secure	B		
Broad-winged Hawk	*Buteo platypterus*	Undetermined	B		
Swainson's Hawk	*Buteo swainsoni*	Undetermined	B		
Northern Harrier	*Circus cyaneus*	Secure	B		
Bald Eagle	*Haliaeetus leucocephalus*	Secure	B		
Falconiformes – Falconidae					Falcon-like birds of prey – Falcons
Merlin	*Falco columbarius*	Secure	B		
Peregrine Falcon	*Falco peregrinus*	Sensitive	B		Special Concern – 2007
Gyrfalcon	*Falco rusticolus*	Secure	B		
American Kestrel	*Falco sparverius*	Secure	B		
Gruiformes – Rallidae					Crane-like birds – Rails
Yellow Rail	*Coturnicops noveboracensis*	Sensitive	B	ⓘ[2]	Special Concern – 2009
American Coot	*Fulica americana*	Secure	B		
Sora	*Porzana carolina*	Secure	B		
Gruiformes – Gruidae					Crane-like birds – Cranes
Whooping Crane	*Grus americana*	At Risk	B		Endangered – 2010 / G1 2008
Sandhill Crane	*Grus canadensis*	Secure	B		

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Charadriiformes – Charadriidae					Shore birds – Plovers
Semipalmated Plover	*Charadrius semipalmatus*	Secure	B		
Killdeer	*Charadrius vociferus*	Secure	B		
American Golden Plover	*Pluvialis dominica*	Sensitive	B		
Pacific Golden Plover	*Pluvialis fulva*	Vagrant			
Black-bellied Plover	*Pluvialis squatarola*	Sensitive	B		
Charadriiformes – Recurvirostridae					Shore birds – Avocets
American Avocet	*Recurvirostra americana*	Undetermined	B		
Charadriiformes – Scolopacidae					Shore birds – Waders
Spotted Sandpiper	*Actitis macularius*	Secure	B		
Ruddy Turnstone	*Arenaria interpres*	Sensitive	B		
Black Turnstone	*Arenaria melanocephala*	Vagrant		Ǝ[6]	
Upland Sandpiper	*Bartramia longicauda*	Undetermined	B		
Sanderling	*Calidris alba*	Sensitive	B		
Dunlin	*Calidris alpina*	Sensitive	B		
Baird's Sandpiper	*Calidris bairdii*	Secure	B		
Red Knot	*Calidris canutus*	At Risk	B		Endangered – 2007 (rufa); Special Concern – 2007 (islandica); Threatened – 2007 (rosellari)
White-rumped Sandpiper	*Calidris fuscicollis*	Secure	B		
Stilt Sandpiper	*Calidris himantopus*	Secure	B		
Purple Sandpiper	*Calidris maritima*	Undetermined	B		
Western Sandpiper	*Calidris mauri*	Vagrant			
Pectoral Sandpiper	*Calidris melanotos*	Secure	B		
Least Sandpiper	*Calidris minutilla*	Secure	B	ⓘ[3]	
Semipalmated Sandpiper	*Calidris pusilla*	Sensitive	B		
Buff-breasted Sandpiper	*Calidris subruficollis*	Sensitive	B		Special Concern – 2012
Wilson's Snipe	*Gallinago delicata*	Secure	B		
Short-billed Dowitcher	*Limnodromus griseus*	Undetermined	B		
Long-billed Dowitcher	*Limnodromus scolopaceus*	Undetermined	B	Ǝ[3]	
Hudsonian Godwit	*Limosa haemastica*	Sensitive	B		
Long-billed Curlew	*Numenius americanus*	Vagrant			
Eskimo Curlew	*Numenius borealis*	At Risk	B (H)		Endangered – 2009 / GH – 2002
Whimbrel	*Numenius phaeopus*	Secure	B	ⓘ[3]	
Red Phalarope	*Phalaropus fulicariux*	Secure	B	ⓘ[3]	
Red-necked Phalarope	*Phalaropus lobatus*	Sensitive	B		Special Concern – 2014
Wilson's Phalarope	*Phalaropus tricolor*	Undetermined	B		
Lesser Yellowlegs	*Tringa flavipes*	Sensitive	B		
Wandering Tattler	*Tringa incana*	Undetermined	B		

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Greater Yellowlegs	*Tringa melanoleuca*	Undetermined	B		
Willet	*Tringa semipalmata*	Vagrant			
Solitary Sandpiper	*Tringa solitaria*	Secure	B	ⓘ[5]	
Charadriiformes – Laridae					Shore birds – Gulls
Black Tern	*Chlidonias niger*	Sensitive	B		
Bonaparte's Gull	*Chroicocephalus philadelphia*	Secure	B		
Black-headed Gull	*Chroicocephalus ridibundus*	Vagrant			
Little Gull	*Hydrocoloeus minutus*	Vagrant			
Caspian Tern	*Hydroprogne caspia*	Sensitive	B		
Herring Gull	*Larus argentatus*	Secure	B		
California Gull	*Larus californicus*	Secure	B		
Mew Gull	*Larus canus*	Secure	B		
Black-tailed Gull	*Larus crassirostris*	Vagrant			
Ring-billed Gull	*Larus delawarensis*	Secure	B		
Lesser Black-backed Gull	*Larus fuscus*	Vagrant			
Glaucous-winged Gull	*Larus glaucescens*	Vagrant			
Glaucous Gull	*Larus hyperboreus*	Secure	B		
Slaty-backed Gull	*Larus schistisagus*	Vagrant			
Thayer's Gull	*Larus thayeri*	Sensitive	B	ⓘ[4]	
Franklin's Gull	*Leucophaeus pipixcan*	Undetermined	B		
Ivory Gull	*Pagophila eburnea*	At Risk	B (H)		Endangered – 2006
Ross's Gull	*Rhodostethia rosea*	Vagrant			Threatened – 2007
Black-legged Kittiwake	*Rissa tridactyla*	Undetermined	B		
Common Tern	*Sterna hirundo*	Secure	B		
Arctic Tern	*Sterna paradisaea*	Secure	B		
Sabine's Gull	*Xema sabini*	Secure	B		
Charadriiformes – Stercorariidae					Shore birds – Jeagers
Long-tailed Jaeger	*Stercorarius longicaudus*	Secure	B	ⓘ[5]	
Parasitic Jaeger	*Stercorarius parasiticus*	Secure	B	ⓘ[5]	
Pomarine Jaeger	*Stercorarius pomarinus*	Secure	B	ⓘ[5]	
Charadriiformes – Alcidae					Sea birds – Auks
Least Auklet	*Aethia pusilla*	Vagrant		∃[6]	
Black Guillemot	*Cepphus grylle*	Undetermined	B		
Common Murre	*Uria aalge*	Vagrant		∃[6]	
Thick-billed Murre	*Uria lomvia*	Sensitive	B		
Columbiformes – Columbidae					Dove-like birds – Pigeons and doves
Eurasian Collared-Dove	*Streptopelia decaocto*	Vagrant		#	
White-winged Dove	*Zenaida asiatica*	Vagrant		#	
Mourning Dove	*Zenaida macroura*	Vagrant			

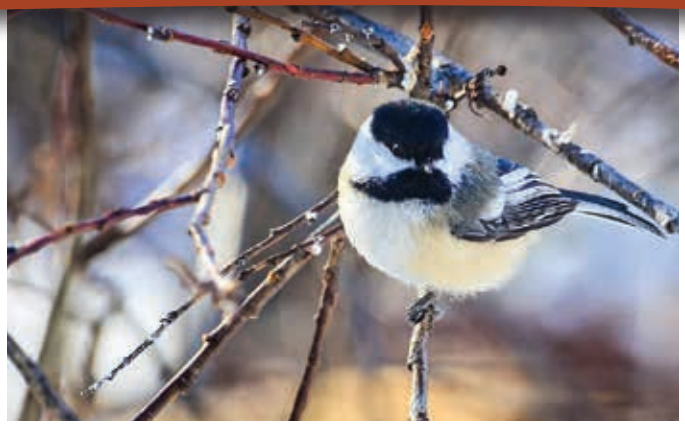
Snowy Owl
Photo Credit: G Court

Snowy Owl Photo Credit: D Johnson

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Strigiformes – Strigidae					Owls – Owls
Boreal Owl	*Aegolius funereus*	Secure	B, W		
Short-eared Owl	*Asio flammeus*	Sensitive	B		
Long-eared Owl	*Asio otus*	Undetermined	B		
Snowy Owl	*Bubo scandiacus*	Secure	B, W		
Great Horned Owl	*Bubo virginianus*	Secure	B, W		
Great Grey Owl	*Strix nebulosa*	Secure	B, W		
Barred Owl	*Strix varia*	Undetermined	B		
Northern Hawk Owl	*Surnia ulula*	Secure	B, W		
Caprimulgiformes – Caprimulgidae					Night birds – Nighthawks
Common Nighthawk	*Chordeiles minor*[d]	At Risk	B		Threatened – 2007
Apodiformes – Trochilidae					Swift-like birds – Hummingbirds
Calliope Hummingbird	*Selasphorus calliope*	Vagrant			
Rufous Hummingbird	*Selasphorus rufus*	Vagrant			
Coraciiformes – Alcedinidae					Roller-like birds – Kingfishers
Belted Kingfisher	*Megaceryle alcyon*	Secure	B		
Piciformes – Picidae					Woodpeckers – Woodpeckers
Northern Flicker	*Colaptes auratus*	Secure	B		
Pileated Woodpecker	*Dryocopus pileatus*	Secure	B		
Black-backed Woodpecker	*Picoides arcticus*	Secure	B		
American Three-toed Woodpecker	*Picoides dorsalis*	Secure	B		
Downy Woodpecker	*Picoides pubescens*	Secure	B		
Hairy Woodpecker	*Picoides villosus*	Secure	B		
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Secure	B		
Passeriformes – Tyrannidae					Perching birds – Tyrant flycatchers
Olive-sided Flycatcher	*Contopus cooperi*[d]	At Risk	B		Threatened – 2007
Western Wood-Pewee	*Contopus sordidulus*	Secure	B		
Alder Flycatcher	*Empidonax alnorum*	Secure	B		
Yellow-bellied Flycatcher	*Empidonax flaviventris*	Secure	B		
Hammond's Flycatcher	*Empidonax hammondii*	Secure	B		
Least Flycatcher	*Empidonax minimus*	Secure	B		
Dusky Flycatcher	*Empidonax oberholseri*	Undetermined	B		
Ash-throated Flycatcher	*Myiarchus cinerascens*	Vagrant			

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Great Crested Flycatcher	*Myiarchus crinitus*	Vagrant			
Eastern Phoebe	*Sayornis phoebe*	Secure	B		
Say's Phoebe	*Sayornis saya*	Undetermined	B		
Eastern Kingbird	*Tyrannus tyrannus*	Secure	B		
Western Kingbird	*Tyrannus verticalis*	Vagrant			
Passeriformes – Laniidae					Perching birds – Shrikes
Northern Shrike	*Lanius excubitor*	Secure	B		
Passeriformes – Vireonidae					Perching birds – Vireos
Warbling Vireo	*Vireo gilvus*	Secure	B		
Red-eyed Vireo	*Vireo olivaceus*	Secure	B		
Philadelphia Vireo	*Vireo philadelphicus*	Undetermined	B		
Blue-headed Vireo	*Vireo solitarius*	Secure	B		
Passeriformes – Corvidae					Perching birds – Corvids
American Crow	*Corvus brachyrhynchos*	Secure	B, W		
Common Raven	*Corvus corax*	Secure	B, W		
Gray Jay	*Perisoreus canadensis*	Secure	B, W		
Black-billed Magpie	*Pica hudsonia*	Secure	B, W		
Passeriformes – Alaudidae					Perching birds – Larks
Horned Lark	*Eremophila alpestris*	Secure	B		
Passeriformes – Hirundinidae					Perching birds – Swallows
Barn Swallow	*Hirundo rustica*[d]	At Risk	B	A, ↗[3]	Threatened – 2011
Cliff Swallow	*Petrochelidon phyrrhonota*	Secure	B		
Bank Swallow	*Riparia riparia d*	At Risk	B	A, ↗[4]	Threatened – 2013
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Vagrant		∃[6]	
Tree Swallow	*Tachycineta bicolor*	Secure	B		
Violet-green Swallow	*Tachycineta thalassina*	Undetermined	B		
Passeriformes – Paridae					Perching birds – Chickadees
Black-capped Chickadee	*Poecile atricapillus*	Secure	B, W		
Gray-headed Chickadee	*Poecile cinctus*	Undetermined	B, W	∃[2]	
Boreal Chickadee	*Poecile hudsonicus*	Secure	B, W	ⓘ[3]	
Passeriformes – Sittidae					Perching birds – Nuthatches
Red-breasted Nuthatch	*Sitta canadensis*	Secure	B		
Passeriformes – Certhidae					Perching birds – Creepers
Brown Creeper	*Certhia americana*	Undetermined	B		
Passeriformes – Troglodytidae					Perching birds – Wrens
Marsh Wren	*Cistothorus palustris*	Undetermined	B		
Rock Wren	*Salpinctes obsoletus*	Vagrant		∃[6]	
Winter Wren	*Troglodytes hiemalis*	Secure	B		
Passeriformes – Cinclidae					Perching birds – Dippers
American Dipper	*Cinclus mexicanus*	Undetermined	B		

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Passeriformes – Regulidae					Perching birds – Kinglets
Ruby-crowned Kinglet	*Regulus calendula*	Secure	B		
Golden-crowned Kinglet	*Regulus satrapa*	Undetermined	B		
Passeriformes – Phylloscopidae					Perching birds – Leaf warbers
Kamchatka Leaf Warbler	*Phylloscopus examinandus*[e]	Vagrant			
Passeriformes – Turdidae					Perching birds – Thrushes
Hermit Thrush	*Catharus guttatus*	Secure	B		
Gray-cheeked Thrush	*Catharus minimus*	Secure	B		
Swainson's Thrush	*Catharus ustulatus*	Secure	B		
Varied Thrush	*Ixoreus naevius*	Undetermined	B		
Townsend's Solitaire	*Myadestes townsendi*	Secure	B		
Northern Wheatear	*Oenanthe oenanthe*	Undetermined	B		
Mountain Bluebird	*Sialia currucoides*	Undetermined	B		
American Robin	*Turdus migratorius*	Secure	B		
Passeriformes – Mimidae					Perching birds – Mockingbirds
Grey Catbird	*Dumetella carolinensis*	Vagrant			
Northern Mockingbird	*Mimus polyglottos*	Vagrant			
Passeriformes – Sturnidae					Perching birds – Starlings
European Starling	*Sturnus vulgaris*	Alien	B		
Passeriformes – Motacillidae					Perching birds – Wagtails
American Pipit	*Anthus rubescens*	Undetermined	B		
Gray Wagtail	*Motacilla cinerea*	Vagrant		∃[6]	
Eastern Yellow Wagtail	*Motacilla tschutschensis*	Undetermined	B	ⓘ[10]	
Passeriformes – Bombycillidae					Perching birds – Waxwings
Cedar Waxwing	*Bombycilla cedrorum*	Secure	B		
Bohemian Waxwing	*Bombycilla garrulus*	Secure	B		
Passeriformes – Calcariidae					Perching birds – Longspurs
Lapland Longspur	*Calcarius lapponicus*	Secure	B		
Smith's Longspur	*Calcarius pictus*	Undetermined	B		
Snow Bunting	*Plectrophenax nivalis*	Secure	B		
Passeriformes – Parulidae					Perching birds – Warblers
Canada Warbler	*Cardellina canadensis*[f]	At Risk	B		Threatened – 2008
Wilson's Warbler	*Cardellina pusilla*	Secure	B		
Mourning Warbler	*Geothlypis philadelphia*	Secure	B	ⓘ[5]	
Common Yellowthroat	*Geothlypis trichas*	Secure	B		
Black-and-white Warbler	*Mniotilta varia*	Secure	B		
Connecticut Warbler	*Oporornis agilis*	Undetermined	B		
Orange-crowned Warbler	*Oreothlypis celata*	Secure	B		
Tennessee Warbler	*Oreothlypis peregrina*	Secure	B		
Northern Waterthrush	*Parkesia noveboracensis*	Secure	B		



Black-capped Chickadee Photo Credit: D Johnson

Yellow Warbler Photo Credit: J Nagy

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
Ovenbird	*Seiurus aurocapilla*	Secure	B		
Bay-breasted Warbler	*Setophaga castanea*	Secure	B		
Yellow-rumped Warbler	*Setophaga coronata*	Secure	B		
Magnolia Warbler	*Setophaga magnolia*	Secure	B		
Palm Warbler	*Setophaga palmarum*	Secure	B		
Yellow Warbler	*Setophaga petechia*	Secure	B		
American Redstart	*Setophaga ruticilla*	Secure	B		
Blackpoll Warbler	*Setophaga striata*	Secure	B	∃[3]	
Cape May Warbler	*Setophaga tigrina*	Secure	B		
Townsend's Warbler	*Setophaga townsendi*	Vagrant			
Black-throated Green Warbler	*Setophaga virens*	Vagrant		∃[6]	
Passeriformes – Cardinalidae					Perching birds – Cardinals
Lazuli Bunting	*Passerina amoena*	Vagrant			
Blue Grosbeak	*Passerina caerulea*	Vagrant		∃[6]	
Indigo Bunting	*Passerina cyanea*	Vagrant			
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Secure	B		
Western Tanager	*Piranga ludoviciana*	Secure	B		
Summer Tanager	*Piranga rubra*	Vagrant		∃[6]	
Passeriformes – Emberizidae					Perching birds – Sparrows
Le Conte's Sparrow	*Ammodramus leconteii*	Secure	B		
Nelson's Sparrow	*Ammodramus nelsoni*	Undetermined	B		
Lark Sparrow	*Chondestes grammacus*	Vagrant			
Dark-eyed Junco	*Junco hyemalis*	Secure	B		
Swamp Sparrow	*Melospiza georgiana*	Secure	B		
Lincoln's Sparrow	*Melospiza lincolnii*	Secure	B		
Song Sparrow	*Melospiza melodia*	Undetermined	B		
Savannah Sparrow	*Passerculus sandwichensis*	Secure	B		
Fox Sparrow	*Passerella iliaca*	Secure	B		
Vesper Sparrow	*Pooecetes gramineus*	Undetermined	B		
Clay-colored Sparrow	*Spizella pallida*	Secure	B	ⓘ[5]	
Chipping Sparrow	*Spizella passerina*	Secure	B		
American Tree Sparrow	*Spizelloides arborea*	Secure	B	∃[3]	

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
White-throated Sparrow	*Zonotrichia albicollis*	Secure	B	ⓘ[3]	
Golden-crowned Sparrow	*Zonotrichia atricapilla*	Undetermined	B	∃[4]	
White-crowned Sparrow	*Zonotrichia leucophrys*	Secure	B		
Harris's Sparrow	*Zonotrichia querula*	Undetermined	B	∃[3]	
Passeriformes – Icteridae					Perching birds – Blackbirds
Red-winged Blackbird	*Agelaius phoeniceus*	Secure	B		
Bobolink	*Dolichonyx oryzivorus*	Vagrant		#	Threatened – 2010
Rusty Blackbird	*Euphagus carolinus*	Sensitive	B		Special Concern – 2006
Brewer's Blackbird	*Euphagus cyanocephalus*	Undetermined	B		
Baltimore Oriole	*Icterus galbula*	Vagrant			
Brown-headed Cowbird	*Molothrus ater*	Secure	B		
Common Grackle	*Quiscalus quiscula*	Secure	B		
Western Meadowlark	*Sturnella neglecta*	Vagrant			
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	Vagrant			
Passeriformes – Fringillidae					Perching birds – Finches
Common Redpoll	*Acanthis flammea*	Secure	B, W		
Hoary Redpoll	*Acanthis hornemanni*	Undetermined	B, W		
Evening Grosbeak	*Coccothraustes vespertinus*	Secure	B, W		Special Concern – 2016
Brambling	*Fringilla montifringilla*	Vagrant			
House Finch	*Haemorhous mexicanus*	Vagrant			
Purple Finch	*Haemorhous purpureus*	Secure	B		
Gray-crowned Rosy Finch	*Leucosticte tephrocotis*	Undetermined	B, W		
Red Crossbill	*Loxia curvirostra*	Secure	B		

Savanah Sparrow
Photo Credit: S Fochuk

Common Name	Scientific Species Name	Rank	Life History Note[a]	Reason for Change[b]	COSEWIC Status in Canada/Global Conservation Concern[c]
White-winged Crossbill	*Loxia leucoptera*	Secure	B, W		
Pine Grosbeak	*Pinicola enucleator*	Secure	B, W		
Pine Siskin	*Spinus pinus*	Secure	B		
American Goldfinch	*Spinus tristis*	Vagrant			
Passeriformes – Passeridae					Perching birds – Weaver Finches
House Sparrow	*Passer domesticus*	Alien	B, W		

[a] Life history notes: B = species known to breed in the NWT, W = species known to reside in the NWT during winter, i,e, year-round residents. ? = denodes uncertainties and lack of evidence. H = historical breeding evidence for a species known to breed in the NWT in the past but not there is no evidnence in the past 10 years. No vagrant bird species breeds in the NWT. The vast majority of them were observed outside the winter season, except Spectacled eider and Steller's eider. These species are occasionnaly seen in winter in openings in the sea ice in the NWT waters of Beaufort Sea.

[b] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[c] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. COSEWIC Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no bird species has been assessed by SARC. Note that SARC does not have the legislated authority to assess a bird species under federal jurisdiction. For more information consult https://ec.gc.ca/nature/default.asp?lang=En&n=496E2702-1#_004.

[d] Common Nighthawk, Olive-sided Flycatcher, Barn Swallow, Bank Swallow populations are in decline in most of Canada. Although these species have wide distribution in the NWT and may have a large population size, there are little data to generate NWT-specific trends with good precision, so national BBS data were used.

[e] Following the split of Arctic Warbler into three separate species (AOU 2016), mtDNA analysis of the NWT specimen from Prince Patrick Island on 21 July 1949 indicated it was actually Kamchatka Leaf Warbler.

[f] Canada Warbler populations are in decline in most of Canada. This species is at the northern edge of its distribution in southern NWT, but there are data to generate NWT-specific trends with good precision from the Liard Valley Long-term Monitoring Program and they show no significant change in population over 1998-2011. The rank was determined by rule as At Risk due to its recent detailed assessement as a threatened species in Canada.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

White-tailed Ptarmigan Photo Credit: S Carriere

Raven Photo Credit: D Johnson

6.4 Fishes

Arctic Grayling
Photo Credit: P Vecsei

Fishes are vertebrates with gills that live in water. Three major groups of fishes are recognized: the cartilaginous fishes (e.g., sharks and skates), the jawless fishes (e.g., lampreys), and all the others, bony fishes (e.g., chars, whitefishes, herring). Fishes are excellent indicators of water quality and ecosystem health. The presence or absence of certain species can provide immediate clues about the conditions within a given area. Fish are one of the most important food and economic resources in the NWT. We are known for our trophy-sized fish, for healthy populations, and for delicacies.

In 2015, we reviewed all ranks for freshwater species and updated the list of all marine fishes known to occur in the NWT's section of the Western Arctic Ocean.

Research on Great Slave Lake

Great Slave Lake is the 11th largest lake in the world and the deepest lake in North America. In 2011, Fisheries and Oceans Canada (DFO) researchers and neighbouring communities began an integrated eco-monitoring and assessment study of cumulative impacts on Great Slave Lake fisheries under the NWT Cumulative Impact Program (NWT-CIMP). The focus of this research is to develop adaptive management strategies, evaluate the sustainability of fishable populations, and incorporate uncertainties and environmental risks into the Integrated Fisheries Management Plan. This project includes a community-based ecomonitoring component, which allows researchers to work in partnership with community members. An effort is also being made to assess Lake Trout to better understand the life history variation exhibited by this species in Great Slave Lake.

Lake Whitefish is one of the dominant benthivorous salmonids in Great Slave Lake, sustaining the largest commercial freshwater fishery in the NWT since the 1950s. Despite the recent downturn in commercial market value, Lake Whitefish is still one of the staple subsistence fish resources for the communities around the lake. Since the inception of the commercial fishery, Lake Whitefish has been a focus of research and monitoring activities. Long-term data collection includes fish biology, fishing capture efficiency, tag-recapture data, trophic ecology and fisheries stock assessment. The recent focus of research has been to establish a community-based eco-monitoring framework through a multidisciplinary research design and depth-stratified sampling approach. The overarching objectives are to better incorporate community-specific traditional knowledge into the fisheries management system and to enhance the capacities of research and management of Arctic freshwater fisheries.

Inconnu is a top predator that serves as an indicator species of ecosystem health. This species is harvested in subsistence and commercial fisheries in Great Slave Lake. Inconnu are highly vulnerable to human activities. As a result of overharvest in the 1970s, stocks declined significantly in Great Slave Lake, particularly the Buffalo River stock.

Inconnu are vulnerable because they are highly migratory. This leads to a concentration of fish both spatially and temporally which in turn makes these populations especially susceptible to exploitation. During the last few years there has been an increase in the commercial harvest of Inconnu and local water levels have decreased. Further research is required to better understand how this will impact Inconnu stocks. Details on the migratory routes, timing of migration, spawning locations and rearing, feeding and overwintering areas in the Buffalo River and other tributaries remain largely unknown. This information is necessary for the sustainable management of this species. Habitat use patterns may change over time due to changes in the ecosystem resulting from development or climate change. Inconnu also exhibit a high degree of population variation.

An acoustic tagging study is being conducted in Great Slave Lake to assess the overall health of this species in relation to human impacts. The initial focus of this study is on the Buffalo River system. Acoustic transmitters will be surgically implanted in the Inconnu and receivers will be installed in Great Slave Lake and tributary rivers to track fish movement. This will be coupled with genetic sampling and assessments of parasites as natural tags for stock discrimination. As a result, new information on Inconnu seasonal movements, spawning and stock discrimination will be gathered which will aid in the study of the cumulative impacts of human activities and natural processes on these stocks and their habitat. Additionally, ongoing research on Inconnu includes the collection of long-term abundance index data (since the late 1960s), biological characteristics and harvest data (since 1947) and tag-recapture data (since 1995). These long term datasets have contributed greatly to the management of this species.

Salmon collection project

DFO is collecting samples of salmon for research. The study aims to chart the occurrence of vagrant salmon and to ultimately relate the movement of salmon in the NWT to potential climate changes in the Pacific Ocean and the Western Arctic Ocean. DFO is working with local renewable resource councils throughout the NWT to obtain as many samples as possible. Salmon can be turned in to local DFO offices for rewards, attention Fisheries Management staff. Documenting any evidence of occurrence and possible colonisation of the Western Arctic Ocean by vagrant species and ultimately relating this to climate change is a key part of the study. This will allow for a better understanding of how to manage new fisheries if they arise.

Cisco
Photo Credit: P Vecsei

Lake Trout, Great Bear Lake Photo Credit: P Vecsei

Research on burbot

Research is being conducted to better understand the ecology of Burbot, a common but poorly understood species that is important in many local fisheries. It is currently known that two subspecies (*Lota lota lota* and *L. l. maculosa*) are present in the NWT. Morphological and ecological variation was found among sampling locations but further studies are needed to examine variation between subspecies groupings. In addition, near-shore coastal seining activities in arctic coastal harvesting programs have documented the presence of Burbot. Their use of the outer Mackenzie Delta and coastline waters has not been well documented, although occurrences have been reported through the 1970's to the 1990's for Kendall Island and Philips Bay, NWT. Focus of this research is on migration movements, reproduction, and the importance of sound to their mating behaviour, as well as understanding the role of Burbot in food webs.

Diversity of ciscoes and Lake Trout in Great Bear Lake

The existence of ecologically segregated forms of both Lake Trout and ciscos in Great Bear Lake has recently been confirmed. These studies have identified the morphological, genetic, trophic niche and life history diversity of these species in Great Bear Lake. Additionally, there is an ongoing study in Great Bear Lake to collect water quality, invertebrate (pelagic and benthic), and fish (multi-species) information from various habitats among the different arms of the lake. This will allow for a better understanding of ecological interactions in order to help conserve the diversity of trout and cisco in the lake and to evaluate the effects of climate change.

Research on chars

Extensive research has been and continues to be conducted on Dolly Varden (*Salvelinus malma malma*), Bull Trout (*S. confluentus*), and Arctic Char (*S. alpinus*) in the NWT. Population assessment research on Dolly Varden (Rat River and Big Fish River stocks) and Arctic Char (Hornaday River and Kuujjua River stocks) is ongoing and several other research projects have been conducted to gain a better understanding of these species' overall biology, ecosystem interactions, life histories, distributions, and habitat. Both Bull Trout and Dolly Varden occupy watersheds within the Mackenzie River basin. Our understanding of the distribution of spawning and rearing habitats across these watersheds continues to grow. A project documenting the distribution of Bull Trout and Dolly Varden across northern watersheds to aid in proper identification of this group of fish and improve our understanding of the ecology of these northern chars is ongoing.

Research is also being conducted to improve our understanding of habitat associations and temperature requirements for northern chars in an effort to assess potential impacts of climate change. Bull Trout was assessed by COSEWIC and designated as a species of special concern in 2012. Research on Dolly Varden in the NWT includes studies of genetics, fluctuations in abundance, and likages between habitat quality and population dynamics. This work is linked to similar studies on this species on the North Slope of Yukon Territory. Dolly Varden (northern form) was assessed by COSEWIC as a species of Special Concern in 2010. One component of a project examining the effects of climate change on chars in the Canadian Arctic focused on responses of lake-dwelling and sea-run chars to climate and habitat change in lakes and rivers near Sachs Harbour and Ulukhaktok. This work is ongoing, and early results suggest both forms of chars respond with greater growth. Additional work is being conducted regarding the effects of climate change on lake productivity needed to sustain such growth.

Arctic Char Photo Credit: P Vecsei

Research on marine fishes

The Northern Coastal Marine Studies Program (2003-2009) was a multidisciplinary study aimed at characterizing the physical and biological nature of the Canadian Beaufort Sea Shelf. Marine fish and invertebrate surveys were conducted from the Canadian Coast Guard Ship *Nahidik* to study the composition and spatial distribution of fishes and invertebrates relative to physical and chemical habitat parameters, and to contribute to the general biological and ecological information of offshore fish and invertebrate populations. The Beaufort Sea Marine Fishes project (2011-2015) expanded this multidisciplinary approach to outer shelf and continental slope habitats to 1,500m depth aboard the chartered Fishing Vessel *Frosti*. Sampling was also conducted in shelf areas west of Banks Island and throughout Amundsen Gulf, including bays and inlets which had not been previously studied in this context. Samples are contributing to follow-up studies of trophic structure and energy transfer within the Beaufort Sea ecosystem, and to focused studies on the ecology of important marine fishes such as Arctic Cod (*Boreogadus saida*) and Greenland Halibut (*Reinhardtius hippoglossoides*). In addition, samples will contribute toward species inventories of marine fishes and invertebrates, including cold water corals and sponges, decapods, and echinoderms such as sea urchins and sea cucumbers. Together with coastal fish studies conducted throughout the NWT, these studies are updating information on invertebrate and anadromous and marine fish species.

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Northern Pike, Baker Creek Photo Credit: P Vecsei

Inconnu and Whitefish
Photo Credit: P Vecsei

List 4. **Fishes**

A total of 100 species of fish can be found regularly in our rivers and lakes, and in the NWT's section of the Western Arctic Ocean. An additional 4 species are vagrant and may be seen in the NWT irregularly and an additional 16 species of marine fishes are expected to be present. Two species were introduced (alien) in the NWT. Atlantic Herring (*Clupea harengus*), Bering Wolffish (*Anarhichas orientalis*) and Aurora Unernak (*Gymnelus retrodorsalis*) were recorded in the Western Arctic Ocean but not in NWT waters. Two species are of global conservation concern. Sixty-six species of fish are marine (M) and live exclusively in the ocean. Other species live exclusively in freshwater (F) or live in freshwater during at least one part of their life (A, anadromous). Some species have one freshwater form, and one marine or anadromous form. These life forms and habitat preferences are described in the Habitat Note column. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows the standard from the American Fisheries Society (Page *et al*. 2013), except for whitefish (see footnote).

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	COSEWIC Status in Canada/ Global Conservation Concern[c]
Chordata – Chondrichthyes					**Chordates – Cartilaginous fishes**
Rajiformes – Rajidae					Skate-like fishes – Skates
Thorny Skate	*Amblyraja radiata*	Presence Expected	M		
Arctic Skate	*Amblyraja hyperborea*	Undetermined	M		
Squaliformes – Dalatiidae					Dogfish sharks – Sleeper sharks
Pacific Sleeper Shark	*Somniosus pacificus*	Presence Expected	M		
Chordata – Hyperoartia					**Chordates – Jawless fishes**
Petromyzontiformes – Petromyzontidae					Lamprey-like fishes – Lampreys
Alaskan Brook Lamprey	*Lethenteron alaskense*[e]	Undetermined	F		Data deficient – 2006 / G3Q – 2012
Arctic Lamprey	*Lethenteron camtschaticum*	Undetermined	F, A		
Chordata – Osteichthyes – Actinopterygii					**Chordates – Bony fishes – Ray-finned fishes**
Clupeiformes – Clupeidae					Herring-like fishes – Herrings
Pacific Herring	*Clupea pallasii*	Undetermined	M		
Cypriniformes – Catostomidae					Carp-like fishes – Suckers
Longnose Sucker	*Catostomus catostomus*	Secure	F		
White Sucker	*Catostomus commersonii*	Secure	F		
Largescale Sucker	*Catostomus macrocheilus*	Presence Expected	F		
Cypriniformes – Cyprinidae					Carp-like fishes – Minnows
Northern Redbelly Dace	*Chrosomus eos*	Secure	F		
Finescale Dace	*Chrosomus neogaeus*	Secure	F		
Lake Chub	*Couesius plumbeus*	Secure	F		
Northern Pearl Dace	*Margariscus margarita*	Secure	F		
Emerald Shiner	*Notropis atherinoides*	Secure	F		
Spottail Shiner	*Notropis hudsonius*	Secure	F		
Fathead Minnow	*Pimephales promelas*	Undetermined	F		
Flathead Chub	*Platygobio gracilis*	Secure	F		
Longnose Dace	*Rhinichthys cataractae*	Secure	F		

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	COSEWIC Status in Canada/ Global Conservation Concern[c]
Esociformes – Esocidae					Pike-like fishes – Pikes
Northern Pike	*Esox lucius*	Secure	F		
Gadiformes – Gadidae					Cod-like fishes – Cods
Polar Cod	*Arctogadus glacialis*	Undetermined	M		
Arctic Cod	*Boreogadus saida*	Secure	M		
Saffron Cod	*Eleginus gracilis*	Undetermined	M		
Ogac (Greenland Cod)	*Gadus ogac*	Undetermined	M		
Burbot (Loche)	*Lota lota*	Secure	F, A?		
Pacific Tomcod	*Microgadus proximus*	Undetermined	M		
Gasterosteiformes – Gasterosteidae					Stickleback-like fishes – Sticklebacks
Brook Stickleback	*Culaea inconstans*	Secure	F		
Three-spine Stickleback	*Gasterosteus aculeatus*	Secure	A, M		
Ninespine Stickleback	*Pungitius pungitius*	Secure	F		
Osmeriformes – Osmeridae					Smelt-like fishes – Smelts
Pond Smelt	*Hypomesus olidus*	Undetermined	F		
Capelin	*Mallotus villosus*	Undetermined	M		
Rainbow Smelt	*Osmerus mordax*	Undetermined	F, A		
Osteoglossiformes – Hiodontidae					Bonytongues – Goldeyes
Goldeye	*Hiodon alosoides*	Secure	F		
Perciformes – Ammodytidae					Perch-like fishes – Lances
Northern Sand Lance	*Ammodytes dubius*	Undetermined	M		
Pacific Sand Lance	*Ammodytes hexapterus*	Undetermined	M		
Perciformes – Anarhichadidae					Perch-like fishes – Wolffishes
Northern Wolffish	*Anarhichas denticulatus*	At Risk	M	A, ⓘ[5]	Threatened – 2012
Perciformes – Percidae					Perch-like fishes – Perches
Iowa Darter	*Etheostoma exile*	Presence Expected	F		
Yellow Perch	*Perca flavescens*	Undetermined	F		
Walleye	*Sander vitreus*	Secure	F		
Perciformes – Pholidae					Perch-like fishes – Gunnels
Banded Gunnel	*Pholis fasciata*	Undetermined	M	#	
Perciformes – Stichaeidae					Perch-like fishes – Shannies
Blackline Prickleback	*Acantholumpenus mackayi*	Undetermined	M		
Stout Eelblenny	*Anisarchus medius*	Undetermined	M		
Fourline Snakeblenny	*Eumesogrammus praecisus*	Undetermined	M		
Daubed Shanny	*Leptoclinus maculatus*	Undetermined	M		
Slender Eelblenny	*Lumpenus fabricii*	Undetermined	M		
Arctic Shanny	*Stichaeus punctatus*	Undetermined	M		

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	COSEWIC Status in Canada/ Global Conservation Concern[c]
Perciformes – Zoarcidae					Perch-like fishes – Eelpouts
Bigeye Unernak	*Gymnelus hemifasciatus*	Undetermined	M		
Fish Doctor	*Gymnelus viridis*	Undetermined	M		
Glacial Eelpout	*Lycodes frigidus*	Undetermined	M	#	
Shulupaoluk	*Lycodes jugoricus*	Undetermined	M		
White Sea Eelpout	*Lycodes marisalbi*	Undetermined	M	ⓘ[10]	
Saddled Eelpout	*Lycodes mucosus*	Secure	M		
Wattled Eelpout	*Lycodes palearis*	Presence Expected	M		
Pale Eelpout	*Lycodes pallidus*	Undetermined	M	#	
Canadian Eelpout	*Lycodes polaris*	Undetermined	M		
Arctic Eelpout	*Lycodes reticulatus*	Undetermined	M	#	
Threespot Eelpout	*Lycodes rossii*	Secure	M		
Archer Eelpout	*Lycodes sagittarius*	Undetermined	M	ⓘ[10]	
Longear Eelpout	*Lycodes seminudus*	Undetermined	M		
Scalebelly Eelpout	*Lycodes squamiventer*	Presence Expected	M		
Turner Eelpout	*Lycodes turneri*	Presence Expected	M		
Percopsiformes – Percopsidae					Trout-perches – Trout-perches
Trout-Perch	*Percopsis omiscomaycus*	Secure	F		
Pleuronectiformes – Pleuronectidae					Flatfishes – Flounders
Bering Flounder	*Hippoglossoides robustus*	Undetermined	M		
Longhead Dab	*Limanda proboscidea*	Undetermined	M	#	
Starry Flounder	*Platichthys stellatus*	Undetermined	M		
Arctic Flounder	*Pleuronectes glacialis*	Undetermined	M		
Alaska Plaice	*Pleuronectes quadrituberculatus*	Presence Expected	M		
Greenland Halibut	*Reinhardtius hippoglossoides*	Secure	M		
Salmoniformes – Salmonidae					Salmon-like fishes – Salmonids
Cisco	*Coregonus artedi*	Secure	F, A		
Arctic Cisco	*Coregonus autumnalis*	Sensitive	F, A		
Lake Whitefish	*Coregonus clupeaformis*[e]	Secure	F, A		
Bering Cisco	*Coregonus laurettae*	Presence Expected	F, A		
European Whitefish	*Coregonus lavaretus*[e]	Undetermined	F, A		
Broad Whitefish	*Coregonus nasus*	Secure	F, A		
Least Cisco	*Coregonus sardinella*	Secure	F, A		
Shortjaw Cisco	*Coregonus zenithicus*	At Risk	F		Threatened – 2003 / G3 – 2015
Pink Salmon	*Oncorhynchus gorbuscha*	Vagrant	A		
Chum Salmon	*Oncorhynchus keta*	Undetermined	A		

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	COSEWIC Status in Canada/ Global Conservation Concern[c]
Coho Salmon	*Oncorhynchus kisutch*	Vagrant	A		
Rainbow Trout	*Oncorhynchus mykiss*	Alien	F		
Sockeye Salmon/ Kokanee	*Oncorhynchus nerka*	Vagrant	F, A		
Chinook Salmon	*Oncorhynchus tshawytscha*	Vagrant	A		
Pygmy Whitefish	*Prosopium coulterii*	Undetermined	F		
Round Whitefish	*Prosopium cylindraceum*	Secure	F, A		
Mountain Whitefish	*Prosopium williamsoni*	Secure	F, A		
Arctic Char	*Salvelinus alpinus*	Secure	F, A		
Bull Trout	*Salvelinus confluentus*	Sensitive	F	A, ⓘ[2]	Special Concern – 2012
Brook Trout	*Salvelinus fontinalis*	Alien	F		
Dolly Varden	*Salvelinus malma*	Sensitive	F, A		Special Concern – 2010
Lake Trout	*Salvelinus namaycush*	Secure	F		
Inconnu	*Stenodus leucichthys*	Sensitive	F, A		
Arctic Grayling	*Thymallus arcticus*	Secure	F	ⓘ[3]	
Scorpaeniformes – Agonidae					Scorpionfishes – Poachers
Arctic Alligatorfish	*Aspidophoroides olrikii*	Undetermined	M		
Atlantic Poacher	*Leptagonus decagonus*	Undetermined	M		
Veteran Poacher	*Podothecus veternus*	Presence Expected	M		
Scorpaeniformes – Cottidae					Scorpionfishes – Cottids
Hamecon	*Artediellus scaber*	Undetermined	M		
Arctic Hookear Sculpin	*Artediellus uncinatus*	Undetermined	M		
Slimy Sculpin	*Cottus cognatus*	Secure	F		
Spoonhead Sculpin	*Cottus ricei*	Secure	F		
Antlered sculpin	*Enophrys diceraus*	Presence Expected	M		
Arctic Staghorn Sculpin	*Gymnocanthus tricuspis*	Undetermined	M		
Twohorn Sculpin	*Icelus bicornis*	Undetermined	M		
Spatulate Sculpin	*Icelus spatula*	Undetermined	M		
Belligerent Sculpin	*Megalocottus platycephalus*	Presence Expected	M		
Plain Sculpin	*Myoxocephalus jaok*	Presence Expected	M		
Fourhorn Sculpin	*Myoxocephalus quadricornis*[f]	Secure	F, M	ⓘ[5]	Landlocked freshwater from: Data Deficient – 2003; Marine form: Not at risk – 2003
Arctic Sculpin	*Myoxocephalus scorpioides*	Undetermined	M		
Shorthorn Sculpin	*Myoxocephalus scorpius*	Undetermined	M		
Deepwater Sculpin	*Myoxocephalus thompsonii*	Secure	F		
Moustache sculpin	*Triglops murrayi*	Undetermined	M		
Bigeye Sculpin	*Triglops nybelini*	Undetermined	M		
Ribbed Sculpin	*Triglops pingelii*	Undetermined	M		

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	COSEWIC Status in Canada/ Global Conservation Concern[c]
Scorpaeniformes – Cyclopteridae					Scorpionfishes – Lumpsuckers
Pimpled Lumpsucker	*Eumicrotremus andriashevi*	Presence Expected	M		
Leathernfin Lumpsucker	*Eumicrotremus derjugini*	Undetermined	M		
Atlantic Spiny Lumpsucker	*Eumicrotremus spinosus*	Undetermined	M		
Scorpaeniformes – Hexagrammidae					Scorpionfishes – Greenlings
Whitespotted Greenling	*Hexagrammos stelleri*	Presence Expected	M		
Scorpaeniformes – Liparidae					Scorpionfishes – Snailfishes
Sea Tadpole	*Careproctus reinhardti*	Undetermined	M		
Gelatinous Snailfish	*Liparis fabricii*	Undetermined	M		
Variegated Snailfish	*Liparis gibbus*	Undetermined	M		
Kelp Snailfish	*Liparis tunicatus*	Undetermined	M		
Scorpaeniformes – Psychrolutidae					Scorpionfishes – Fatheads
Sadko Fathead	*Cottunculus sadko*	Presence Expected	M		

[a] Habitat Note: F = Species (form) lives exclusively in freshwater. A = Species (form) lives in both marine and freshwater. M = Species (form) lives in marine water exclusively.

[b] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[c] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. COSEWIC Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no fish species has been assessed by SARC. Note that SARC does not have the legislated authority to assess a species under federal jurisdiction.

[d] The taxonomy of the non parasitic, Alaskan Brook Lamprey (*Lethenteron alaskense*) is under review. This taxon is found nowhere else in the world but in Martin River, NWT. It is considered a species of global conservation concern (G3Q).

[e] General Status Ranks are given for Lake Whitefish (*Coregonus clupeaformis*, including *C. pidschian*, *C. nelsonnii*) and for European Whitefish (*C. lavaretus*). However, these species cannot easily be distinguished using standard morphometric methods. The relative distribution of each species in the NWT is still unclear. Taxonomy for these species follows Mee *et al*. (2016).

[f] Fourhorn Sculpin (*Myoxocephalus quadricornis*) is a marine species, but a lake form exists in some Arctic Islands of NWT (and Nunavut). The rank is given for the whole species.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
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[10] Changed from Presence Expected

Inconnus Photo Credit: P Vecsei

Northern Leopard Frog
Photo Credit: Leslie Bol/RESCAN

6.5 Amphibians

Amphibians and reptiles are mostly found in the forested areas of the NWT, although the hardy wood frog can be seen just north of the tree line. We have not observed any new species of amphibians and reptiles in the NWT since 2011.

Globally, amphibians are declining at rates that are unparalleled among other vertebrates. The main threats to amphibians elsewhere in Canada are habitat loss and pollution. Other threats include droughts, increased UV exposure due to ozone depletion, and increased frequency of infectious diseases. Although many populations in the NWT are isolated, they appear to be affected by the same infectious diseases that impact populations farther south. Two pathogens of particular importance are the chytrid fungus *Batrachochytrium dendrobatidis* (Bd), and ranaviruses. Both Bd and ranaviruses are capable of infecting and being transmitted among several amphibian species and ranaviruses can also infect reptiles. These infectious pathogens are not transmittable to humans. They have been linked to the declines of several amphibian species globally. However not all species or populations appear to decline when infected with Bd or ranaviruses. Discovering the underlying explanations for why some populations and species decline in the presence of these pathogens while others do not is an area of active research.

Recent investigations of amphibian health in the NWT have shown that both Bd and ranaviruses are circulating in amphibian populations in the Dehcho and South Slave regions, and that ranaviruses are also in wood frog populations in the Sahtu. This finding greatly extends the known geographic distributions of these diseases in North America. It is unknown whether Bd or ranaviruses are recent arrivals to the North.

To date, Bd has been detected in western toads, Canadian toads, wood frogs, and boreal chorus frogs. Although Bd has not been detected in northern leopard frogs in the NWT, testing of this species has been limited. Bd has been detected in northern leopard frog populations elsewhere in Canada and the USA.

Red-sided Garter Snake
Photo Credit: JF Bienentreu

and Reptiles

Ranaviruses have been detected in wood frogs and boreal chorus frogs in the NWT. Work is underway to confirm if the ranavirus is present in Canadian toads and red-sided garter snakes from the South Slave and to better understand community disease dynamics of ranaviruses in all amphibians in the NWT

In 2012 and 2015 amphibian tissue and wetland water samples were collected from several wetlands in the South Slave Region (Fort Smith and Fort Resolution areas) to test for several heavy metals and organic contaminants. Population biology data and other indicators of population health were collected at these wetlands. Sample testing at accredited analytical chemistry laboratories is ongoing and interpretation of contaminant levels is underway.

Since 2011 more information on western toad and northern leopard frog populations was gathered for the detailed assessments of these species. Both species were assessed as threatened in the NWT and as special concern in Canada. A management plan for all amphibians in the NWT is being developed and will include specific actions to help conservation these species at risk as well as all other amphibian species.

All can help in monitoring by learning how to identify species of both amphibians and reptiles and by reporting observations using a pamphlet available at your nearest ENR Office or on the Facebook group NWT SPECIES.

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List 5. **Amphibians and Reptiles**

Five species of amphibians and one species of reptile are confirmed to occur in the NWT. One additional species of amphibian and one species of reptile are expected to be present. No species are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Crother (2012).

Boreal Chorus Frog — Photo Credit: JF Bienentreu

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Chordata – Amphibia					**Chordates – Amphibians**
Anura – Bufonidae					Frog-like amphibians – Toads
Western Toad	*Anaxyrus boreas*	At Risk	A, ⓘ[3]	Threatened – 2014	Special Concern – 2012
Canadian Toad	*Anaxyrus hemiophrys*	Sensitive	ⓘ[2]		
Anura – Hylidae					Frog-like amphibians – Tree Frogs
Boreal Chorus Frog	*Pseudacris maculata*	Secure			
Anura – Ranidae					Frog-like amphibians – True Frogs
Northern Leopard Frog	*Lithobates pipiens*	At Risk	A, ⓘ[3]	Threatened – 2013	Special Concern – 2009
Wood Frog	*Lithobates sylvaticus*	Secure			
Caudata – Ambystomidae					Salamander-like amphibians – Salamanders
Long-toed Salamander	*Ambystoma macrodactylum*	Presence Expected			
Chordata – Reptilia					**Chordates – Reptiles**
Serpentes – Colubridae					Serpent-like reptiles – Garter Snakes
Terrestrial Garter Snake	*Thamnophis elegans*	Presence Expected			
Red-sided Garter Snake	*Thamnophis sirtalis*	May Be At Risk			

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. SARC Status: Status for a species in the NWT if it ihas already been assessed in detail by SARC as of December 2016. COSEWIC Status: Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

1 Changed from At Risk
2 Changed from May Be at Risk
3 Changed from Sensitive
4 Changed from Secure
5 Changed from Undetermined
6 Changed from Not Assessed
7 Changed from Alien
8 Changed from Extirpated
9 Changed from Vagrant
10 Changed from Presence Expected

Wood Frog
Photo Credit: D Schock

6.6 Corals

Northern Red Anemone
Photo Credit: J Madle

Cnidaria (corals) are clusters of small invertebrate creatures called polyps. The most famous corals are reef forming. Formation of coral systems and reefs begins as one polyp secures to a rock or structure and then reproduces. A new polyp joins the first and so on until a large interconnected system of polyps develops. Polyps have a small limestone skeleton located at the base of their bodies. This structure remains after a polyp dies and acts as a surface for new polyps to build from. Polyps can build and stack in this fashion for thousands of years, eventually constructing massive systems such as the Great Barrier Reef.

Like reef corals, true sea anemones are also polyps. However, these organisms tend to be solitary and much larger. Their anatomy consists of a sac like structure firmly attached to the ocean substrate or other structure. The mouth is located at the top of the organism and is surrounded by one or more whorls of tentacles that help grasp and draw in food.

Tube anemones, although very similar in appearance to true anemones, are in fact a separate and distinct subclass. As their name describes, these organisms live in a tube structure made from a fibrous secretion. They are able to draw themselves into these tubes for protection.

Corals known to be present in the NWT waters of the Western Arctic Ocean, including the Beaufort Sea, have a wide variety of structures and appearances.

So far in the NWT three orders of coral species have been found: the sea anemones, the tube-dwelling anemones and the soft corals.

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Research on marine invertebrates

Benthic (sea bottom) invertebrates are considered good environmental indicators[5], as they form part of fish diet. Describing benthic communities is essential to a better understanding of fish habitats.

During the Beaufort Sea Marine Fishes Project (2011-2015), invertebrate samples were taken from the Beaufort Sea. Cold water corals were mostly represented by specimens of the soft-coral family Neptheidae (*Gersemia* sp., *Drifa* sp.). This group of species is part of the United Nations General Assembly (UNGA) Resolution 61/105 which calls upon "States to take action immediately, individually and through regional fisheries management organizations and arrangements, and consistent with the precautionary approach and ecosystem approaches, to sustainably manage fish stocks and protect vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, from destructive fishing practices, recognizing the immense importance and value of deep sea ecosystems and the biodiversity they contain".

The benthic biodiversity in the Canadian portion of the Arctic Ocean is not well understood. Corals are poorly represented and underestimated in samples taken so far[6,7]. About 34% to 59% of larger benthic species in Canadian Arctic Ocean waters are still to be documented[8,9].

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[5] Snelgrove and Butman (1994)
[6] Roy (2014)
[7] Piepenburg et al. (2011)
[8] Roy et al. (2015)
[9] Archambault et al. (2010)

Sea Strawberry Octocoral and Nodular Anemone
Photo Credit: E Svensen

List 6. **Corals**

A total of ten species of corals are known to occur in the NWT's section of the Western Arctic Ocean. An unknown number of additional species may be present. As of 2016, no coral species found in NWT waters are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows WoRMS (2015).

Common Name	Scientific Species Name	Rank	Habitat Notes[a]	Global Conservation Concern[b]
Cnidaria – Anthozoa				**Cnidarians – Corals**
Actiniaria – Actiniidae				Sea anemones – Actinid anemones
Northern Red Anemone	*Urticina felina*	Undetermined	M	
Actiniaria – Actinostolidae				Sea anemones – Actinostolid anemones
Spitsbergen Sea Anemone	*Glandulactis spetsbergensis*	Undetermined	M	
Scarlet Sea Anemone	*Stomphia coccinea*	Undetermined	M	
Actiniaria – Bathyphelliidae				Sea anemones – Bathyphelid amenomes
Pearly Deep-sea Anemone	*Bathyphellia margaritacea*	Undetermined	M	
Actiniaria – Hormathiidae				Sea anemones – Hormathid anemones
Allantactis Sea Anemone	*Allantactis parasitica*	Undetermined	M	
Nodular Anemone	*Hormathia nodosa*	Undetermined	M	
Alcyonacea – Nephtheidae				Soft corals – Tree corals
Drifa Octocoral	*Drifa glomerata*	Undetermined	M	
Sea Strawberry Octocoral	*Gersemia rubiformis*	Undetermined	M	
Ceriantharia – Cerianthidae				Tube-dwelling anemones – Cerianthids
Northern Cerianthid	*Pachycerianthus borealis*	Undetermined	M	
Fringed Cerianthid	*Pachycerianthus fimbriatus*	Undetermined	M	

[a] Habitat Note: M = Species (form) lives in marine water exclusively.

[b] For your convenience, the global conservation rank of a species is given. These ranks are assigned by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no species known to be present in the NWT waters of the Western Arctic Ocean are of global conservation concern.

Nodular Anemone
Photo Credit: E Svensen

6.7 Sponges

Lake Sponge
Photo Credit: B Bennett

Although seemingly bizarre creatures, sponges are actually very simple multi-celled organisms. Their basic structure lacks any nervous, digestive, or circulatory systems; but instead consists of densely porous flesh and a series of inner "tubes" working together to pump water through the organism. By this means, the sponge is able to filter feed very effectively. They may consume any number of items found in the water they filter, from microscopic bacteria to larger plant particles.

This simple structure is supported by a "skeleton", a series of spine-like projections that form a loose network throughout the organism. These skeletons are highly important in identifying the various species of sponges, and are often the only way to distinguish them correctly. In the NWT there are few species of sponges. All are ocean-dwelling except the freshwater lake sponge (*Spongilla lacustris*), so far found in a lake near Inuvik and expected to be present in other lakes in the NWT.

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Beaufort Sea Project

During the Beaufort Sea Marine Fishes Project (2011-2015) very few species (and specimens) of sponges were collected. The benthic biodiversity was dominated by arthropods and polychaetes (worms), while echinoderms (species lists in the next pages) were the dominant taxa in term of biomass. Compared to this, taxa more difficult to identify such as Porifera (sponges) and Cnidaria (corals) are poorly represented and underestimated.

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List 7. **Sponges**

A total of eight species of sponges are known to occur in the NWT's portion of the Western Arctic Ocean. An unknown number of additional species may be present. As of 2016, no sponge species found in NWT waters are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows WoRMS (2015).

White Tit-sponge Photo Credit: J Swanepoel

Common Name	Scientific Species Name	Rank	Habitat Notes[a]	Global Conservation Concern[b]
Porifera – Demospongiae				**Sponges – Demosponges**
Axinellida – Axinellidae				Axinellids – Axinellid sponges
Bowerbank's Demosponge	*Phakellia bowerbanki*	Undetermined	M	
Hadromerida – Chalinidae				Hadromerids – Chalinid sponges
Gracile Demosponge	*Haliclona gracilis*	Undetermined	M	
Polymastiida – Polymastiidae				Polymastids – Pimpled sponges
White Tit-sponge	*Polymastia mamillaris*	Undetermined	M	
Sunshine Round Sponge	*Radiella sol*	Undetermined	M	
Hemispherical Round Sponge	*Radiella hemisphaerica*	Undetermined	M	
Spongillida – Spongillidae				Spongillids – Freshwater sponges
Lake Sponge	*Spongilla lacustris*	Undetermined	F	
Suberitida – Suberitidae				Suberitids – Suberitid sponges
Cold-water Sea Sponge	*Suberites suberia*	Undetermined	M	
Tetractinellida – Theneidae				Tetratinellids – Theneid sponges
Deep-sea Demosponge	*Thenea abyssorum*	Undetermined	M	

[a] Habitat Note: F = Species (form) lives exclusively in freshwater. M = Species (form) lives in marine water exclusively.

[b] For your convenience, the global conservation rank of a species is given. These ranks are assigned by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no species known to be present in the NWT waters of the Western Arctic Ocean are of global conservation concern.

Orange-footed Sea Cucumber
Photo Credit: K Tehnes

6.8 Selected Echinoderms

Phylum Echinodermata includes sea cucumbers and sea urchins presented in the list below, as well as starfishes. These last species will be included in future reports.

Sea cucumbers

Sea cucumbers vary greatly in size and shape but all have the same general anatomy consisting of a roughly cylindrical body, tube feet, and a mouth equipped with tentacles. The sea cucumber's tube feet are long pipe-like projections that can be inflated by pumping water into them to enable movement. Depending on the species, the specific type and number of tube feet can vary greatly (some cucumbers in fact have no real tube feet and move via muscle undulations, much like earth worms). Equally variable is the type of oral tentacles a sea cucumber may have. They are typically classified as branched or not branched, and by the number of whorls surrounding the mouth parts. However, all sea cucumbers possess a ring of calcareous plates that form the only substantial "skeletal" structure in the organism. This structure acts as an anchor for major muscles and also allows the cucumber to retract its tentacles into its body for protection.

Sea cucumbers are typically found in lower depths where they tend to sift through sediment in search of food. Their diet consists largely of plankton, detritus and organic debris. Some species filter such a significant amount of sand that they play important ecological roles in maintaining healthy sea bed ecosystems.

Sea urchins

Sea urchins are small, aquatic animals often recognized by their spikey, spherical appearance. Their bodies consist of a shell, or "test", which is most often round and covered in long spines providing them with camouflage and protection. They are also equipped with "tube feet" and a central mouth, which includes grinding teeth and a surrounding whorl of tentacles. They are highly effective at grasping and scraping food off rocks. As such, their diets consist of an array of organisms including: algae, plankton, kelp, barnacles, and molluscs.

Urchins are such effective grazers that in some areas they can play a key role in preventing algae outbreaks. However, if urchin populations become abundant they may also have negative impacts on coral growth and sea floor biomass coverage.

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During the the Beaufort Sea Project (2011-2015), echinoderms were represented mostly by starfishes (ophiuroids and asteroids not listed below). Only one genus of sea urchins (*Strongylocentrotus* sp.) and a few sea cucumbers (mostly *Molpadia arctica*) were found.

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List 8. **Selected Echinoderms**

There are nine species of sea cucumbers and three species of sea urchins confirmed present in the NWT section of the Western Arctic Ocean. None of the species ranked in this report is of global conservation concern.

Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows WoRMS (2015).

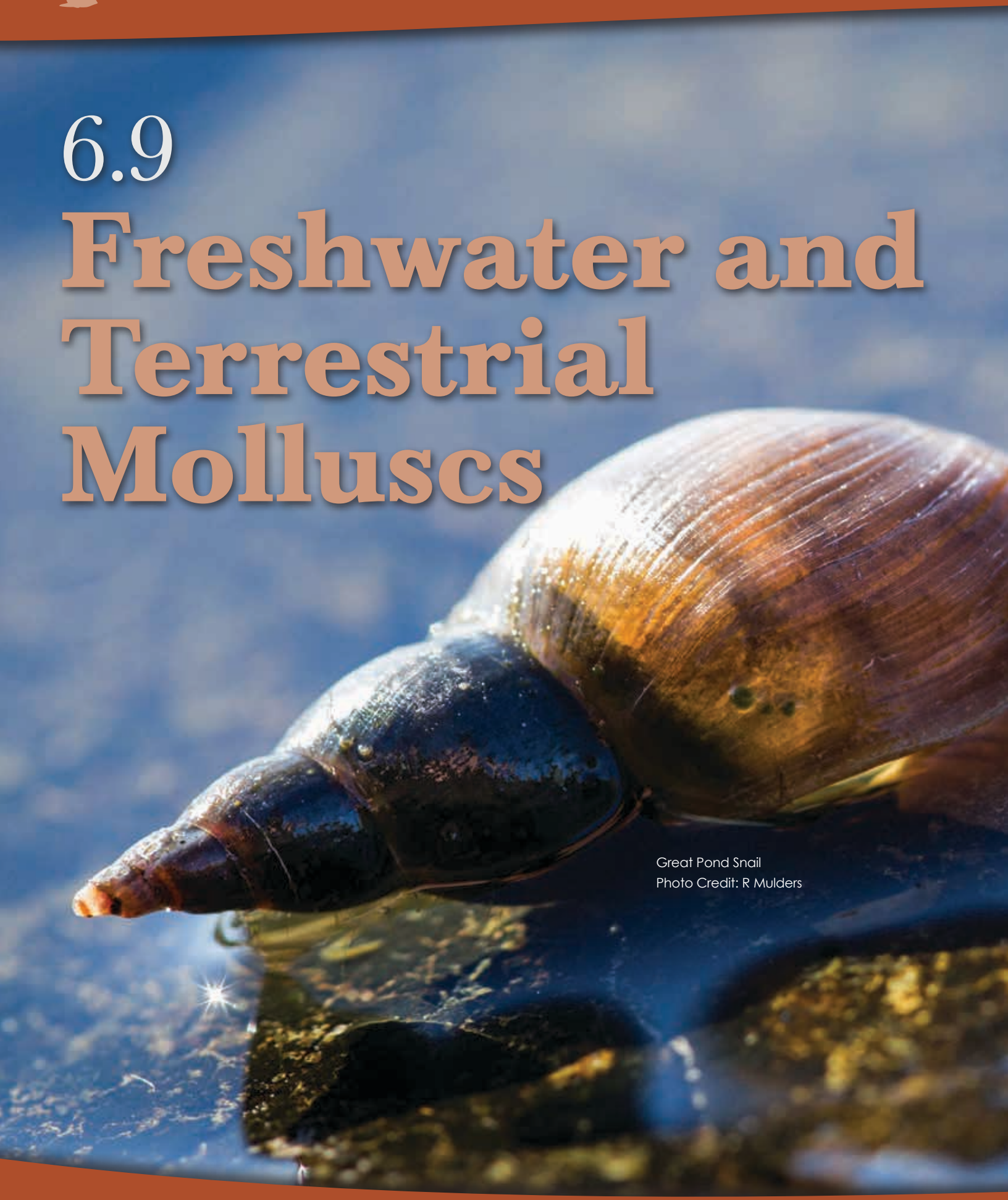
Common Name	Scientific Species Name	Rank	Habitat Notes[a]	Global Conservation Concern[b]
Echinodermata – Holothuroidea				**Echinoderms – Sea cucumbers**
Apodida – Chiridotidea				Apodid cucumbers – Silky cucumbers
Silky Sea Cucumber	*Chiridota laevis*	Undetermined	M	
Apodida – Myriotrochidae				Apodid cucumbers – Abyssal cucumbers
Rink's Deep Sea Cucumber	*Myriotrochus rinkii*	Undetermined	M	
Dendrochirotida – Cucumariidae				Tentacular cucumbers – True sea cucumbers
Orange-footed Sea Cucumber	*Cucumaria frondosa*	Undetermined	M	
Dendrochirotida – Phyllophoridae				Tentacular cucumbers – Phyllophorid sea cucumbers
Far-Eastern Sea Cucumber	*Pentamera calcigera*	Undetermined	M	
Dendrochirotida – Psolidae				Tentacular cucumbers – Psolus
Scarlet Psolus	*Psolus fabricii*	Undetermined	M	
Phantom Psolus	*Psolus phantapus*	Undetermined	M	
Elasipodida – Elpidiidae				Appendaged cucumbers – Elpid sea cucumbers
Polar Abyss Elpid Cucumber	*Elpidia glacialis*	Undetermined	M	
Molpadida – Gephyrothuriidae				Tailed cucumbers – Gephyrothurid sea cucumbers
Alcock's Tailed Cucumber	*Gephyrothuria alcocki*	Undetermined	M	
Molpadida – Molpadiidae				Tailed cucumbers – Molpadid sea cucumbers
Arctic Molpadiid Cucumber	*Molpadia arctica*	Undetermined	M	
Echinodermata – Echinoidea				**Echinoderms -Sea urchins**
Camarodonta – Strongylocentrotidae				Globular sea urchins – Strongylocentrotids
Green Sea Urchin	*Strongylocentrotus droebachiensis*	Undetermined	M	
Pale Urchin	*Strongylocentrotus pallidus*	Undetermined	M	
Clypeasteroida – Echinarachniidae				Burrowing sea urchins – Sand dollars
Common Sand Dollar	*Echinarachnius parma*	Undetermined	M	

[a] Habitat Note: F = Species (form) lives exclusively in freshwater. M = Species (form) lives in marine water exclusively.

[b] For your convenience, the global conservation rank of a species is given. These ranks are assigned by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no species known to be present in the NWT waters of the Western Arctic Ocean are of global conservation concern.

Green Sea Urchin
Photo Credit: K Tehnes

6.9 Freshwater and Terrestrial Molluscs



Great Pond Snail
Photo Credit: R Mulders

Molluscs (Phylum Mollusca) are invertebrates with a soft or hard shell, a mantle (fold of skin) that secretes the shell and a muscular foot that is used to move around. In terms of global abundance and diversity, molluscs are only surpassed by arthropods, which include the numerous insects. The land and freshwater molluscs in the NWT are divided into two major groups or classes: Class Bivalvia (mussels and clams) and Class Gastropoda (snails and slugs). Marine molluscs also include the sea slugs, mussels, clams, squids, and octopi.

All freshwater and terrestrial molluscs are ranked in this report. Marine molluscs will be ranked in future reports.

Freshwater snails

There are two major types of freshwater snails (Phylum Mollusca, Class Gastropoda) in the NWT: those that can breathe air (pulmonates) and those with gills (prosobranchs) used to extract oxygen from the water, much like fish. All have shells that are either cone shaped or flat with all except one species group having a spiral shell. The prosobranchs have a trap door, called an operculum, which they can close to seal their bodies into their shells. All except one family of freshwater snails in Canada (Physidae) have shells that twist to the right. Some freshwater snails have separate sexes whereas others (pulmonates) are hermaphrodites, having both female and male sex organs. They are micro and macro-herbivores, scavengers, and detritivores, scraping their food from surfaces using a multi-toothed "tongue" called a radula. Some can even filter-feed using their gills as do the mussels. They are found in all types of water bodies, from large lakes and rivers to small ponds, streams, and marshes with or without permanent standing water. Birds, fish, and small mammals eat them. Some birds even eat empty snail shells to gain the calcium that is then used for the development of their own eggs. Shells range in size from a diameter of only 3 mm to a shell length of over 5 cm.

Only one species is currently known to be endemic to northern Canada. The western arctic stagnicola is found no-where else in the world except in the NWT and Nunavut. Surveys of several hot springs in Nahanni National Park Reserve in 2003 found some of the springs to be inhabited by at least three species of freshwater snails. One species was originally thought to be a common freshwater snail found throughout much of Canada but in 2015 DNA barcoding results from specimens collected in 2003 suggest it may be a different and potentially new species. Two other thermal spring snails were not fully identified and could either be new species or closely related to other species found in thermal springs in Kamchatka, Russia. They have not yet been subject to DNA barcoding or thorough analysis.

Many of the records of freshwater snails in the NWT come from historical museum collections. The first large survey of Canadian freshwater molluscs occurred from 1959 until 1969 with this collection being held in the Canadian Museum of Nature, Ottawa. While most of the collection sites were in southern Canada, there are also collections from the NWT by the Fisheries Research Board.

The entire NWT has not been adequately surveyed for freshwater snails but progress is being made. For example, the Mollusc Species Specialist Subcommittee of COSEWIC had the opportunity for two days of surveys around Hay River in 2013. This brief survey added one previously unknown species to the list of NWT freshwater snails. Additional survey and work on already collected specimens could very well increase the size of the list and provide data for further status assessments and result in changing the many "undetermined" ranks.

Freshwater bivalves

Freshwater bivalves are so named because they have two "valves" that are similar in shape and face each other, forming a two-part shell. The two valves come together at the "hinge". Freshwater bivalves include the strictly aquatic Unionids (freshwater mussels), and the related pea and fingernail clams, some of which can survive extended periods of time being dry.

Twenty species of fingernail and pea clams have been recorded in the NWT. Only two species of unionids are found in NWT: the fat mucket and the giant floater. In contrast, there are 54 species of freshwater mussels in all of Canada. The status ranks of these two species have not changed since 2011 although the known range of the fat mucket has expanded northwards by recent discoveries in 2015. These two species can easily be told apart. The fatmucket has protuberances or teeth on the hinge inside the shell whereas the giant floater's hinge is toothless.

Freshwater mussels feed by filtering water and eating plankton and other fine particulate organic matter. Mussels use their foot to anchor or half bury themselves at the bottom of water bodies. Mussels often live together in a group. Because they filter large quantities of water and spend a large portion of their life in one area, mussels are excellent indicators of aquatic ecosystem quality. The sudden disappearance or a decline in growth rate of a species of freshwater mussel could indicate declining aquatic ecosystem health. Mussels are also food for muskrats, river otters, and humans among others. Separate male and female mussels produce sperm and eggs with the male releasing his sperm into the water. The female filters the sperm out of the water and transports it to a specialized area of her gills where her eggs are fertilized and develop into larvae (called "glochidia").

All except a couple of species of freshwater mussels produce parasitic glochidia that attach to the gills or fins of fish. The larvae of some mussels are species-specific, and can live only if they attach to the appropriate host fish species. All larvae eventually detach from their host and, if they fall in suitable habitat, will develop into adult mussels. The fat mucket has 14 known host fish species, including Yellow Perch and Walleye. It is found in southern NWT where it is considered abundant. New records for 2015 extend its previously known range to the Johnny Hoe River, just south of Great Bear Lake. The giant floater may be found across the NWT along the Mackenzie River watershed, but its host fish is unknown and there is no information on numbers or population health. The best-known and most studied population of giant floater can be found at the aptly named Shell Lake, near Inuvik.

Fat Mucket
Photo Credit: D Lepitzki

Terrestrial snails and slugs

Terrestrial snails and slugs also belong to the class Gastropoda, which is represented in marine and freshwater environments.

Terrestrial snails and slugs are gastropod molluscs (see above) that have adapted to life on land. Terrestrial snails have a single, spiral, external calcareous shell that serves as protection against predators and desiccation. Slugs have evolved from snail-like ancestors in separate lineages and are simply snails in which the shell is much reduced in size and usually internal or sometimes altogether absent. Semi-slugs, such as the western glass-snail, have a body form and shell that are intermediate between slugs and snails.

There are just over 200 species, counting both native and introduced ones, of terrestrial snails and slugs in Canada. Most, if not all the NWT species of snails and slugs have expansive ranges, likely across much of the arctic, boreal North America, or beyond, into northern Eurasia. At least one species, grey fieldslug, is introduced to the NWT. Knowledge of the presence of this species in NWT was the result of the 2013 Hay River survey.

Little is known about the natural history of most NWT terrestrial snails and slugs. In general, terrestrial species need moisture to survive and seek shelter within loose accumulations of fallen leaves, under logs, rocks, and other objects. Worldwide, terrestrial snails occur in almost every imaginable habitat, some not generally thought to be ideal for snails. In the NWT they should be expected in boreal, subarctic and tundra ecosystems, as well as in modified habitats in towns. Habitats include a wide variety of wetlands and forests, tundra, and coastal beach ridges/dunes.

Terrestrial snails and slugs are mostly scavengers and herbivores and feed on dead and living plant material, fungi, and carrion. A few are active predators on invertebrates, including other snails. In general, NWT terrestrial snails and slugs are simultaneous hermaphrodites, like all the air-breathing freshwater snails. That is, both male and female reproductive organs are present at the same time in all individuals. Cross-fertilization between individuals, however, is still usually required, although self-fertilization is known to be common in some species. All NWT species are probably short-lived, under one or two years.

But for a few exceptions, all species in the NWT are tiny, less than 6 mm. The small size of the majority of NWT land snails has likely contributed to the lack of knowledge on these animals in the NWT, as has the remoteness of many parts of the territory. Taxonomic difficulties, the absence of accessible reference books, and the presence of just a few experts on terrestrial molluscs in all of Canada have also prevented better knowledge of this group.

Little of the NWT has been surveyed for terrestrial snails and slugs. While most or perhaps all species in the territory are predicted to be secure based on what we know about them elsewhere, we have few data on which to base territorial ranks. New records, in the form of vouchered, expertly identified collections are needed. However, casual searches are unlikely to find most species, and collections of minute snails may be best made by gathering accumulations of fallen leaves and dead grasses, drying and screening to remove large material, and finally picking though the remaining debris for snails. If you would like to collect snails or slugs, and add to our knowledge of this group in the NWT, contact Robert Forsyth (rforsyth@mollus.ca) for further ideas on how to proceed.

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List 9. **Freshwater and Terrestrial Molluscs**

There are 56 species of freshwater molluscs and 24 species of terrestrial molluscs confirmed present in the NWT. One species of terrestrial snail is alien to the NWT. One species is of global conservation concern. The classification system for molluscs is under review and no single system has been universally adopted. The higher taxonomy in the list below follows NatureServe. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. The species level taxonomy follows Graf and Cummings (2014) for freshwater bivalves and Forsyth and Lepitzki (2015) for non-marine snails and slugs.

Multirib Vallonia — Photo Credit: R Forsyth

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	Global Conservation Concern[c]
Mollusca – Bivalva					**Molluscs – Bivalves**
Unionoida – Unionidae					Freshwater mussels – Freshwater mussels
Fat Mucket	*Lampsilis siliquoidea*	Secure	F		
Giant Northern Floater	*Pyganodon grandis*	Undetermined	F		
Veneroida – Sphaeriidae					Veneroids – Fingernail and pea clams
Ubiquitous Pea Clam	*Pisidium casertanum*	Secure	F		
Ridged-beak Pea Clam	*Pisidium compressum*	Secure	F		
Arctic-Alpine Pea Clam	*Pisidium conventus*	Secure	F		
River Pea Clam	*Pisidium fallax*	Undetermined	F		
Rusty Pea Clam	*Pisidium ferrugineum*	Secure	F		
Giant Northern Pea Clam	*Pisidium idahoense*	Secure	F		
Lilljeborg's Pea Clam	*Pisidium lilljeborgi*	Secure	F		
Quadrangular Pill Clam	*Pisidium milium*	Undetermined	F		
Shiny Pea Clam	*Pisidium nitidum*	Secure	F		
Fat Pea Clam	*Pisidium rotundatum*	Undetermined	F		
Short-ended Pea Clam	*Pisidium subtruncatum*	Secure	F		
Triangular Pea Clam	*Pisidium variabile*	Secure	F		
Globular Pea Clam	*Pisidium ventricosum*	Secure	F		
Walker's Pea Clam	*Pisidium walkeri*	Undetermined	F		
Lake Fingernail Clam	*Sphaerium lacustre*	Secure	F		
Arctic Fingernail Clam	*Sphaerium nitidum*	Secure	F		
Swamp Fingernail Clam	*Sphaerium partumeium*	Undetermined	F		
Pond Fingernail Clam	*Sphaerium securis*	Undetermined	F		
Striated Fingernail Clam	*Sphaerium striatinum*	Secure	F		
Long Fingernail Clam	*Sphaerium transversum*	Undetermined	F		

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	Global Conservation Concern[c]
Mollusca – Gastropoda					**Molluscs – Gastropods**
Basommatophora – Lymnaeidae					Air-breathing aquatic snails – Pond snails
Shouldered Northern Galba	*Galba galbana*	Undetermined	F		
Modest Galba	*Galba modicella*	Undetermined	F		
Golden Fossaria	*Galba obrussa*	Undetermined	F		
Amphibious Galba	*Galba parva*	Undetermined	F		
Rustic Galba	*Galba rustica*	Undetermined	F		
Alaskan Pond Snail	*Lymnaea atkaensis*	Undetermined	F		
Great Pond Snail	*Lymnaea stagnalis*	Secure	F		
Muskeg Stagnicola	*Stagnicola arctica*	Secure	F		
Blade-ridged Stagnicola	*Stagnicola caperata*	Undetermined	F		
Lake Stagnicola	*Stagnicola catascopium*	Undetermined	F		
Common Stagnicola	*Stagnicola elodes*	Secure	F		
Western Arctic Stagnicola	*Stagnicola kennicotti*	Undetermined	F		G3 – 2015
Basommatophora – Physidae					Air-breathing aquatic snails – Bubble snails
Polished Tadpole Snail	*Aplexa elongata*	Undetermined	F		
Blunt Arctic Physa	*Physa jennessi*	Undetermined	F		
Frigid Physa	*Physa sibirica*	Undetermined	F		
Glass Physa	*Physa skinneri*	Undetermined	F		
Tadpole Snail	*Physella gyrina*	Undetermined	F		

Giant Floater
Photo Credit: M Holloway

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	Global Conservation Concern[c]
Basommatophora – Planorbidae					Air-breathing aquatic snails – Ramshorn snails
Creeping Ancylid	*Ferrissia rivularis*	Undetermined	F		
Flatly Coiled Gyraulus	*Gyraulus circumstriatus*	Undetermined	F		
Tiny Nautilus Snail	*Gyraulus crista*	Undetermined	F		
Irregular Gyraulus	*Gyraulus deflectus*	Secure	F		
Tuba Gyraulus	*Gyraulus hornensis*	Undetermined	F		
Modest Gyraulus	*Gyraulus parvus*	Undetermined	F		
Two-ridged Ramshorn	*Helisoma anceps*	Undetermined	F		
File Rams-horn	*Planorbella pilsbryi*	Undetermined	F		
Larger Prairie Ramshorn	*Planorbella subcrenata*	Undetermined	F		
Larger Eastern Ramshorn	*Planorbella trivolvis*	Undetermined	F		
Say's Toothed Planorbid	*Planorbula armigera*	Undetermined	F		
Prairie Toothed Planorbid	*Planorbula campestris*	Undetermined	F		
Keeled Promenetus	*Promenetus exacuous*	Secure	F		
Heterostropha – Valvatidae					Different-gilled snails – Valve snails
Fringed Valvata	*Valvata lewisi*	Undetermined	F		
Rams-horn Valvata	*Valvata mergella*	Undetermined	F		
Mossy Valvata	*Valvata sincera*	Undetermined	F		
Three-keeled Valvata	*Valvata tricarinata*	Undetermined	F		
Neotaenioglossa – Amnicolidae					Littoral snails – Gilled snails
Mud Amnicola	*Amnicola limosus*	Undetermined	F		
Neotaenioglossa – Hydrobiidae					Littoral snails – Mud snails
Boreal Marstonia	*Marstonia lustrica*	Undetermined	F		
Delta Hydrobe	*Probythinella emarginata*	Undetermined	F		
Pulmonata – Agriolimacidae					Air-breathing land snails – Slugs
Meadow Slug	*Deroceras laeve*	Secure	T		
Grey Fieldslug	*Deroceras reticulatum*	Alien	T		
Pulmonata – Cochlicopidae					Air-breathing land snails – Pillar snails
Glossy Pillar Snail	*Cochlicopa lubrica*	Undetermined	T		
Pulmonata – Discidae					Air-breathing land snails – Disc snails
Striate Disc Snail	*Discus shimekii*	Secure	T		
Forest Disc Snail	*Discus whitneyi*	Secure	T		
Pulmonata – Euconulidae					Air-breathing land snails – Hive snails
Brown Hive Snail	*Euconulus fulvus*	Secure	T		
Pulmonata – Gastrodontidae					Air-breathing land snails – Gastrodontid snails
Quick Gloss Snail	*Zonitoides arboreus*	Secure	T		
Black Gloss Snail	*Zonitoides nitidus*	Undetermined	T		
Pulmonata – Oxychilidae					Air-breathing land snails – Oxychilid snails
Blue Glass Snail	*Nesovitrea binneyana*	Undetermined	T		
Amber Glass Snail	*Nesovitrea electrina*	Undetermined	T		
Pulmonata – Pupillidae					Air-breathing land snails – Pupillid snails
Hudsonian Column Snail	*Pupilla hudsoniana*	Secure	T		

Common Name	Scientific Species Name	Rank	Habitat Note[a]	Reason for Change[b]	Global Conservation Concern[c]
Pulmonata – Succineidae					Air-breathing land snails – Ambersnails
Suboval Ambersnail	*Mediappendix vermeta*	Undetermined	T		
Striate Ambersnail	*Novisuccinea strigata*	Secure	T		
Blunt Ambersnail	*Oxyloma retusum*	Undetermined	T		
Santa Rita Ambersnail	*Succinea grosvenori*	Undetermined	T		
Pulmonata – Valloniidae					Air-breathing land snails – Vallonid snails
Multirib Vallonia	*Vallonia gracilicosta*	Secure	T		
Boreal Top Snail	*Zoogenetes harpa*	Undetermined	T		
Pulmonata – Vertiginidae					Air-breathing land snails – Whorl snails
Mellow Little-column Snail	*Columella columella*	Undetermined	T		
Callus Vertigo	*Vertigo arthuri*	Undetermined	T		
Cordillera Vertigo	*Vertigo cristata*	Undetermined	T		
Tapered Vertigo	*Vertigo elatior*	Undetermined	T		
Cross Vertigo	*Vertigo modesta*	Secure	T		
Ovate Vertigo	*Vertigo ovata*	Undetermined	T		
Pulmonata – Vitrinidae					Air-breathing land snails – Glass snails
Western Glass-snail	*Vitrina pellucida*	Undetermined	T		

[a] Habitat Note: F = Species lives in freshwater. T = Species lives on land. M = Species lives in marine water exclusively.

[b] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[c] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Western Glass-snail Photo Credit: R Forsyth

Meadow Slug Photo Credit: R Forsyth

6.10 Decapods

Aesop Shrimp
Photo Credit: K Tehnes

Decapods are arthropods, a group of invertebrate animals with an exoskeleton, a segmented body, and jointed legs. Other groups of arthropods are included in this report in the next few pages of insects and spiders.

Decapods are crustacean animals, a group separated from other arthropods by their biramous (two branches) limbs, and by their typical larval forms. Most crustaceans live in marine habitat. These include crabs, lobsters, crayfish, prawns, shrimps, krill, and barnacles. Some are terrestrial and plant parasites (woodlice), some live in freshwater as fish parasites (fish lice)[10] and some are free living and have colonized freshwater bodies, such as many species of plankton.

As their name implies, decapods are crustaceans with ten feet, referring to their five pairs of legs. The Order Decapoda includes decapod shrimps, lobsters, crayfishes and crabs. All known species of decapods in the NWT are marine, living in the NWT portion of the Western Arctic Ocean. No freshwater decapods, such as the freshwater crayfish, are known to occur in the NWT.

Decapod shrimp have elongated abdomens, two pairs of long antennae, and slender legs. The most numerous family of decapod shrimps in the NWT is the Hippolytidae or broken-back shrimps (otherwise known as cleaner shrimp). All freshwater "shrimps" found in lakes and rivers of the NWT are non-decapods and will be included in the next reports.

There are two known families of crab in the NWT, the oregonid crab and the hermit crab. Like other hermit crabs, the hermit crab has a soft abdomen protected by a construction of discarded shells, typically from gastropods (snails). With a curved body and modified hind limbs, these crabs are specially adapted to fit and secure themselves to the inner whirls of such shells, until a time when they become too large and must move to a new casing. Oregonid crabs are true crabs, and in the NWT, include the snow crab and Arctic lyre crab.

Beaufort Sea Marine Project (2011-2015)

In samples from Beaufort Sea, arthropods were represented mostly by amphipods whereas decapods were dominant in terms of biomass. The dominant species was the circumpolar eualid shrimp (*Eualus gaimardi*).

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[10] See Stewart and Bernier 1999.

Polar Lebbeid Shrimp
Photo Credit: K Telnes

List 10. **Decapods**

There are 21 known species of decapods confirmed present in the NWT. No species are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows WoRMS (2015).

Polar Shrimp Photo Credit: Diomedia

Common Name	Scientific Species Name	Rank	Habitat Notes[a]	Global Conservation Concern[b]
Arthropoda – Crustacea – Malacostraca				**Arthropods – Malacostracan crustaceans**
Decapoda – Acanthephyridae				Decapods – Acanthephyrid shrimps
Northern Ambereye Shrimp	*Hymenodora glacialis*	Undetermined	M	
Decapoda – Crangonidae				Decapods – Crangonid shrimps
Arctic Argid Shrimp	*Argis dentata*	Undetermined	M	
Norwegian Shrimp	*Pontophilus norvegicus*	Undetermined	M	
Sevenline Shrimp	*Sabinea septemcarinata*	Undetermined	M	
Northern Sculptured Shrimp	*Sclerocrangon boreas*	Undetermined	M	
Polar Shrimp	*Sclerocrangon ferox*	Undetermined	M	
Decapoda – Hippolytidae				Decapods – Broken-back shrimps
Cold Deep-sea Shrimp	*Bythocaris cryonesus*	Undetermined	M	
Arctic Eualid Shrimp	*Eualus fabricii*	Undetermined	M	
Circumpolar Eualid Shrimp	*Eualus gaimardii*	Undetermined	M	
Greenland Eualid Shrimp	*Eualus macilentus*	Undetermined	M	
Comb-beak Eualid Shrimp	*Eualus stoneyi*	Undetermined	M	
Spiny Lebbeid Shrimp	*Lebbeus groenlandicus*	Undetermined	M	
Polar Lebbeid Shrimp	*Lebbeus polaris*	Undetermined	M	
Curved Blade Shrimp	*Spirontocaris arcuata*	Undetermined	M	
Punctate Blade Shrimp	*Spirontocaris phippsii*	Undetermined	M	
Parrot Shrimp	*Spirontocaris spinus*	Undetermined	M	
Decapoda – Oregoniidae				Decapods – Oregonid crabs
Snow Crab	*Chionoecetes opilio*	Undetermined	M	
Arctic Lyre Crab	*Hyas coarctatus*	Undetermined	M	
Decapoda – Paguridae				Decapods – Hermit crabs
Hairy Hermit Crab	*Pagurus pubescens*	Undetermined	M	
Decapoda – Pandalidae				Decapods – Pandalid shrimps
Great Northern Prawn	*Pandalus borealis*	Undetermined	M	
Aesop Shrimp	*Pandalus montagui*	Undetermined	M	

[a] M = marine habitat

[b] For your convenience, the global conservation rank of a species is given. These ranks are assigned by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org. As of 2016, no species known to be present in the NWT waters of the Western Arctic Ocean are of global conservation concern.

Hairy Hermit Crab
Photo Credit: E Svensen

6.11 Beetles

Eyespot Lady Beetle
Photo Credit: D Johnson

Coleoptera is the most diverse order of insect – of all animals in fact – in the world. They are easily recognizable by their hardened fore-wing covers (elytra), which can be very colourful. In the NWT, the bulk of diversity of beetles occurs in the boreal forest, but many species are also found north of the treeline.

Beetle identification can be challenging but it is often possible to determine the family of beetle by using some basic characteristics. The most easily recognized feature, the elytra, are actually modified front wings, which serve as protection for their hind wings and in turn are used for flight (if the species can fly). Other characteristics that may help in the identification include length and shape of antennae, body shape, leg modifications, or habitat. Some are commonly found on flowers, eating pollen or waiting for prey insects to visit the flower. Others tend to be common under bark or in rotting logs.

Beetles are fascinating insects to observe, photograph, and collect. Amateur enthusiasts of all ages can help improve our understanding of the northern fauna by collecting and preserving beetles, taking notes on the habitat, and reporting findings to local biologists to verify identifications. Sharing this information adds to our knowledge of biodiversity. Information will help us all track new arrivals of southern species and track changes in conservation status.

Beetles are extremely important members of all terrestrial and freshwater ecosystems in the North. They act as predators, detritivores, herbivores, fungivores, scavengers, and as prey for other animals. Relative to southern species, our knowledge about beetle diversity and ecology in the North is incomplete. This is changing with large-scale sampling projects such as the Northern Biodiversity Program. Information from this project and other sampling programs was compiled and used to assess species status throughout Canada, including the NWT.

The entire list of beetles known to be in the NWT is presented in the following pages. All species of lady beetles, predaceaous diving beetles and ground beetles ranked in 2006 have been reviewed and the rank was updated if required. The biology and ecology of a selected number of families is summarized below.

Jewel beetles

The Buprestidae are also called metallic wood boring beetles. In the NWT species are mostly grey, brown or black with a metallic luster versus the bright iridescent greens and blues of some tropical species (the elytra of these bright buprestids are often used in jewelry making). These beetles have a unique body shape: they are long, narrow beetles, with heavily textured exoskeleton. Some genera have distinctively "pointed" elytra. They are often observed resting on trees, both bark and foliage, where they may be laying eggs. These beetles feed on pollen as adults. However, the larvae feed on plant matter under the bark of trees and shrubs, thus giving the group the common name as "wood boring beetles".

Ground beetles

The Carabidae often have shiny elytra, which can be quite colourful. Most species are carnivorous, hunting other invertebrates at night, except for tiger beetles (*Cicindela* sp.), some species of *Bembidion*, and *Lebia viridis*, which are active during the day. Their preferred hunting grounds include sand dunes, beaches, fields, open soil surfaces, forest litter, marshes or bogs, creek and river edges. Some even hunt on snow-fields at night (some *Nebria*) or on plants (some *Lebia*). In daytime, adults of most species will rest under tree bark, logs and rocks, in sand or under debris around ponds and near rivers. Only one species may be considered rare, *Elaphrus lecontei* (salt-marsh elaphrus beetle). In the NWT it is restricted to the salt plains in Wood Buffalo National Park. The NWT population of this beetle appears to be different from more southern populations. However; further study is required before its status can be determined in the NWT.

Longhorn beetles

The Cerambicidae are large, long beetles often with spectacularly long antennae. Adults feed on plant matter and are important for plant pollination. Longhorn beetle larvae are woodborers, and of economical importance due to the damage they can cause to wood products. In summer, when the adults are active, it is not uncommon to see them… especially when they use people as landing pads.

Lady beetles

The Coccinellidae are probably the most universally recognizable beetle. Lady beetles (ladybugs, or ladybirds) are predators of other insects in both the adult and larval form. They can be frequently found on plants where they may be feeding on other insects, such as aphids. Because of this most gardeners are happy to find lady beetles on their plants. Larvae are also very common, but less recognizable than the adults. The larval form resembles tiny black crocodiles, and can often be found moving quickly on any plant that is home to a vibrant population of aphids.

Snout beetles

The Curculionidae are also called weevils. They are one of the most easily recognized families of beetles, due to their characteristic long snout, "elbowed" antennae, and the sheer number of species in most ecosystems. They include the economically important bark beetles. Their heads are not visible when observed from above; they lack a pronounced snout and elbowed antennae. Curculionid weevils (including bark beetles) are herbivorous, preying upon roots and leaves. These beetles tend to have a narrow range of preferred host plants. Bark beetles can even be limited to a particular portion of their host tree. For example, genus *Pityophthorus* is limited to small branches and the members of the genus *Dendroctonus* tend to be found in bolls or roots.

Predaceous diving beetles

The Dytiscidae are the most common aquatic beetles in the NWT. They tend to be dark in colour and sometimes have a gaseous sheen or gold markings. These beetles have well-developed swimming legs, and flattened bodies. The larvae of predaceous diving beetles are also known as "water-dragons", and like the adults, the larvae are predators on other aquatic invertebrates. The swimming behavior of predaceous diving beetles can often help identify them: they move their rear legs simultaneously in a smooth "rowing" motion. Adults carry a reservoir of air under their elytra. When they need to replenish this reservoir they swim to the surface and pierce the surface tension with the rear of their abdomen to access more air.

Click beetles

The Elateridae are easy to identify by behaviour: when flipped onto their back, they "click" their abdomen and thorax to flip into the air and back onto their legs. This jumping is made possible by an unusually flexible joint between the rear and midsection of their bodies in addition to a dorsal spine between these segments. Careful entomologists, armed with a magnifying glass, can observe this spine…. if you can keep the beetle on its back! Elaterids can also be identified by distinctive rear facing spines on their middle section, or thorax. Adults eat plants and plant matter, while larvae, also known as "wireworms" due to their worm-like appearance, feed on dead and decaying organic matter.

Firefly beetles

Fireflies are not flies and lightning bugs are not bugs, they are the Lampyridae. A family of beetles best known for the light signals they flash as part of a mating display, or sometimes to attract prey. This fascinating behaviour involves elaborate species-specific displays. Not all fireflies have light displays, some use chemical cues to attract mates. Of the species found in the NWT, only the long-range firefly is known to have light displays.

Scarab beetles

The Scarabaeidae or scarab beetles contain some of the largest beetles in the world – up to 15 cm long for African goliath beetles. Some of the most colourful are tropical and temperate species with iridescent colours. Because they are often spectacular, scarab beetles tend to be well studied, and frequently collected. Species in the NWT are not so large but no less interesting. One species is very unusual. *Trichiotinus assimilis* (bee mimic beetle), is a dark brown to black beetle, notable for its thick coat of blonde hairs primarily on the underside of its abdomen. This yellowish fuzz, combined with light stripes on its elytra and its tendency to be found on flowers where it feeds on nectar and pollen, make the beetle look like a bee. This mimicry is likely a protective strategy. In contrast to this relatively extravagant beetle, the other scarabs found in the NWT are small dark beetles that feed on decaying matter or dung.

Rove beetles

The Staphylinidae is the most diverse family of beetles in the world. Rove beetles range in size from 1 mm to almost 4 cm long. They have very short elytra – causing them to appear similar to earwigs (minus the cerci, or "pincers" on the abdomen, characteristic of earwigs). The short elytra leave most of the abdomen exposed, but still functions as protective covers for the hind wings, which are tucked up under them. Rove beetles tend to be dark, and are active predators. They prefer moist habitats, and are commonly found in leaf litter. Rove beetles are even found in the far north above the tree line. Once you can recognize a rove beetle, and know what to look for, you will see them everywhere!

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The text included in these pages is a summary of a longer report including a full reference list. The full report is available upon request at NWTbugs@gov.nt.ca.

List 11. **Beetles**

There are 1,130 species of beetles confirmed present in the NWT, of these 25 species are alien to the NWT. Fifteen additional species are expected to be present. One species is of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Bousquet *et al.* (2013).

Vietinghoff's Ground Beetle Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Arthropoda – Insecta				**Arthropods – Insects**
Coleoptera – Agyrtidae				Beetles – Primitive carrion beetles
Bearing Agyrtid Beetle	*Ipelates latus*	Undetermined		
Coleoptera – Anthicidae				Beetles – Ant-like beetles
Raven Antlike Flower Beetle	*Anthicus coracinus*	Undetermined		
Golden Antlike Flower Beetle	*Anthicus flavicans*	Undetermined		
Leconte's Antlike Flower Beetle	*Anthicus lecontei*	Undetermined		
Black Antlike Flower Beetle	*Anthicus nigritus*	Undetermined		
Grappling Antlike Flower Beetle	*Notoxus anchora*	Undetermined		
Coleoptera – Anthribidae				Beetles – Fungus weevils
Birch Fungus Weevil	*Gonotropis dorsalis*	Undetermined		
Smut Fungus Weevil	*Trigonorhinus sticticus*	Undetermined		
Coleoptera – Artematopodidae				Beetles – Soft-bodied plant beetles
Pitchblack Soft-bodied Beetle	*Macropogon piceus*	Undetermined		
Coleoptera – Attelabidae				Beetles – Leaf-rolling beetles
Eastern Rose Curculio	*Merhynchites bicolor*	Undetermined		
Western Rose Curculio	*Merhynchites wickhami*	Undetermined		
Copper-blue Leaf-rolling Weevil	*Temnocerus cyanellus*	Undetermined		
Coleoptera – Boridae				Beetles – Conifer bark beetles
Burnt Conifer Bark Beetle	*Lecontia discicollis*	Undetermined		
Coleoptera – Bostrichidae				Beetles – Auger beetles
Apple Twig Borer	*Amphicerus bicaudatus*	Undetermined		
Sifting Powderpost Beetle	*Stephanopachys cribratus*	Undetermined		
Pine Powderpost Beetle	*Stephanopachys substriatus*	Undetermined		
Coleoptera – Brachyceridae				Beetles – Brachycerid snout beetles
Horsetail Weevil	*Grypus equiseti*	Presence Expected		
Aethiops Grey Weevil	*Notaris aethiops*	Undetermined		
Pale-spotted Grey Weevil	*Notaris puncticollis*	Undetermined		
LeConte's Brachycerid Weevil	*Procas lecontei*	Undetermined		
Two-spotted Brachycerid Weevil	*Tournotaris bimaculata*	Undetermined		
Coleoptera – Brentidae				Beetles – Straight-snouted weevils
Alaskan Pear-shaped Weevil	*Eutrichapion viciae*	Undetermined		
Blue Milkvetch Weevil	*Loborhynchapion cyanitinctum*	Undetermined		

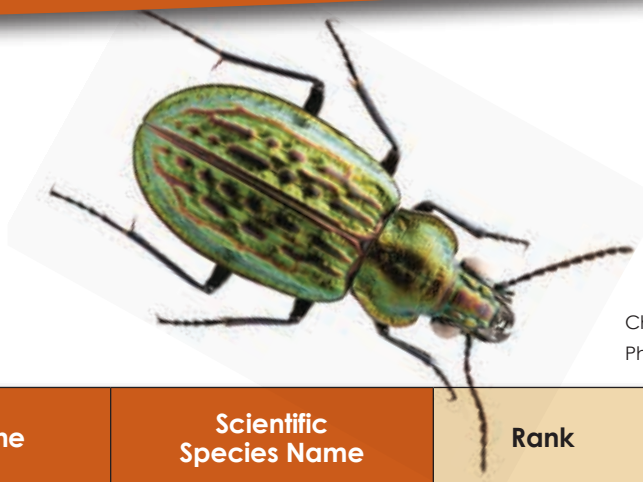
Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Coleoptera – Buprestidae				Beetles – Jewel beetles
Willow Gall Limb Borer	*Agrilus politus*	Undetermined		
Dandelion Anthaxia Beetle	*Anthaxia inornata*	Secure		
Spotted-belly Buprestid	*Buprestis maculativentris*	Undetermined		
Nuttall's Buprestid	*Buprestis nuttalli*	Secure		
Wrinkled-neck Buprestid	*Buprestis sulcicollis*	Undetermined		
Sifting Metallic Wood-borer	*Chrysobothris cribraria*	Undetermined		
Spurred Metallic Wood-borer	*Chrysobothris dentipes*	Undetermined		
Larch Metallic Wood-borer	*Chrysobothris laricis*	Undetermined		
Rough Metallc Wood-borer	*Chrysobothris scabripennis*	Undetermined		
Coniferous Metallic Wood-borer	*Chrysobothris trinervia*	Secure		
Pitted Jewel Borer	*Dicerca callosa*	Undetermined		
Tailed Jewel Borer	*Dicerca caudata*	Undetermined		
Lugubrious Jewel Borer	*Dicerca lugubris*	Undetermined		
Dusky Jewel Borer	*Dicerca tenebrica*	Secure		
Dark Jewel Beetle	*Dicerca tenebrosa*	Undetermined		
Black Fire Beetle	*Melanophila acuminata*	Secure		
Drummond's Flathead Fir Borer	*Phaenops drummondi*	Secure		
Hemlock Borer	*Phaenops fulvoguttata*	Undetermined		
Eastern Poplar Buprestid	*Poecilonota cyanipes*	Undetermined		
Coleoptera – Byrrhidae				Beetles – Pill beetles
Arctic Grey Pill Beetle	*Arctobyrrhus subcanus*	Undetermined		
Two-coloured Pill Beetle	*Byrrhus concolor*	Undetermined		
Ringed Pill Beetle	*Byrrhus cyclophorus*	Undetermined		
Superb Pill Beetle	*Byrrhus eximius*	Undetermined		
Kirby's Pill Beetle	*Byrrhus kirbyi*	Undetermined		
Prickly Pill Beetle	*Curimopsis echinata*	Undetermined		
Mount Moosilauke Pill Beetle	*Curimopsis moosilauke*	Undetermined		
Hairy Pill Beetle	*Curimopsis setulosa*	Undetermined		
Alternate Pill Beetle	*Cytilus alternatus*	Undetermined		
Mimic Pill Beetle	*Cytilus mimicus*	Undetermined		
Brass Pill Beetle	*Morychus aeneolus*	Undetermined		
Long Pill Beetle	*Simplocaria elongata*	Undetermined		
Metallic Pill Beetle	*Simplocaria metallica*	Alien		
Coleoptera – Byturidae				Beetles – Fruitworm beetles
Raspberry Fruitworm Beetle	*Byturus unicolor*	Undetermined		
Coleoptera – Cantharidae				Beetles – Soldier beetles
Mountaineer Cantharid Beetle	*Cantharis alticola*	Undetermined		
Deceptive Soldier Beetle	*Dichelotarsus deceptus*	Undetermined		
Extreme Soldier Beetle	*Dichelotarsus extremus*	Undetermined		
Yellow-handed Soldier Beetle	*Dichelotarsus flavimanus*	Undetermined		

Elegant Purple-green Ground Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Furtive Soldier Beetle	*Dichelotarsus furtivus*	Undetermined		
Crookedjaw Soldier Beetle	*Dichelotarsus heteronychus*	Undetermined		
Softnecked Soldier Beetle	*Dichelotarsus laevicollis*	Undetermined		
Dark-striped Soldier Beetle	*Dichelotarsus obscurevittatus*	Undetermined		
Obscure Soldier Beetle	*Dichelotarsus perplexus*	Undetermined		
Treehugger Soldier Beetle	*Dichelotarsus piniphilus*	Undetermined		
Flour-plated Soldier Beetle	*Dichelotarsus tetragonoderus*	Undetermined		
Curtis's Pacific Soldier Beetle	*Pacificanthia curtisi*	Undetermined		
Bigjaw Soldier Beetle	*Rhagonycha mandibularis*	Undetermined		
Hardy Soldier Beetle	*Silis difficilis*	Undetermined		
Coleoptera – Carabidae				Beetles – Ground beetles
Svelte Ground Beetle	*Agonum affine*	Undetermined		
Beige Ground Bettle	*Agonum anchomenoides*	Undetermined		
Two-coloured Ground Beetle	*Agonum bicolor*	Undetermined		
Consimile Ground Beetle	*Agonum consimile*	Undetermined		
Cypress Ground Beetle	*Agonum cupreum*	Undetermined		
Elegant Purple-green Ground Beetle	*Agonum cupripenne*	Undetermined		
Painted Ground Beetle	*Agonum exaratum*	Secure		
Gracious Ground Beetle	*Agonum gratiosum*	Undetermined		
Brown-prothorax Ground Beetle	*Agonum lutulentum*	Undetermined		
Metallic Ground Beetle	*Agonum metallescens*	Undetermined		
Variable Ground Beetle	*Agonum mutatum*	Undetermined		
Black-shanked Ground Beetle	*Agonum nigriceps*	Undetermined		
Close Ground Beetle	*Agonum propinquum*	Undetermined		
Five-spotted Ground Beetle	*Agonum quinquepunctatum*	Undetermined		
Forest-litter Ground Beetle	*Agonum retractum*	Undetermined		
Sordens Ground Beetle	*Agonum sordens*	Undetermined		
Superior Ground Beetle	*Agonum superioris*	Undetermined		
Thorey's Ground Beetle	*Agonum thoreyi*	Secure		
Aneopolita Sun Beetle	*Amara aeneopolita*	Undetermined		
Alpine Sun Beetle	*Amara alpina*	Secure		
Exposed Sun Beetle	*Amara apricaria*	Alien	∃[6]	
Bokor's Sun Beetle	*Amara bokori*	Secure		
Brown's Sun Beetle	*Amara browni*	Undetermined		
Copper Sun Beetle	*Amara brunnea*	Undetermined		
Baikal Sun Beetle	*Amara daurica*	Undetermined		
Erratic Sun Beetle	*Amara erratica*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Gibb Sun Beetle	*Amara gibba*	Undetermined		
Glacier Sun Beetle	*Amara glacialis*	Undetermined		
Hicks' Sun Beetle	*Amara hicksi*	Undetermined		
Taiga Sun Beetle	*Amara hyperborea*	Undetermined		
Idaho Sun Beetle	*Amara idahoana*	Undetermined		
Intertitialis Sun Beetle	*Amara interstitialis*	Undetermined		
Kurnakow's Sun Beetle	*Amara kurnakowi*	Undetermined		
Lake-loving Sun Beetle	*Amara lacustris*	Undetermined		
Smooth-winged Sun Beetle	*Amara laevipennis*	Undetermined		
Shore-lover Sun Beetle	*Amara littoralis*	Undetermined		
Moon-collar Sun Beetle	*Amara lunicollis*	Undetermined		
Large Sun Beetle	*Amara obesa*	Undetermined		
Pale-footed Sun Beetle	*Amara pallipes*	Undetermined		
Neighbouring Sun Beetle	*Amara patruelis*	Undetermined		
Brass Sun Beetle	*Amara pseudobrunnea*	Undetermined		
Quensel's Ground Beetle	*Amara quenseli*	Undetermined		
Schwarz's Ground Beetle	*Amara schwarzi*	Undetermined		
Marked Ground Beetle	*Amara sinuosa*	Undetermined		
Spurred Ground Beetle	*Amara spuria*	Undetermined		
Tough Ground Beetle	*Amara tenax*	Undetermined		
Torrid Ground Beetle	*Amara torrida*	Undetermined		
Trans-beringian Ground Beetle	*Amara transberingiensis*	Undetermined		
Alaska Ground Beetle	*Asaphidion alaskanum*	Secure		
Red-black Spotted Beetle	*Badister neopulchellus*	Undetermined		
Short Spotted Beetle	*Badister obtusus*	Undetermined		
Sharp-nosed Bembidion Beetle	*Bembidion acutifrons*	Undetermined		
Arctic Bembidion Beetle	*Bembidion arcticum*	Undetermined	∃[6]	
Bimarked Bembidion Beetle	*Bembidion bimaculatum*	Undetermined		
Brachythorax Bembidion Beetle	*Bembidion brachythorax*	Undetermined		
Canadian Bembidion Beetle	*Bembidion canadianum*	Undetermined		
Sand-loving Bembidion Beetle	*Bembidion carinula*	Undetermined		
Brass Bembidion Beetle	*Bembidion chalceum*	Undetermined		
Colorado Bembidion Beetle	*Bembidion coloradense*	Undetermined		
Compressed Bembidion Beetle	*Bembidion compressum*	Undetermined		
Two-coloured Bembidion Beetle	*Bembidion concolor*	Undetermined		
Concrete Bembidion Beetle	*Bembidion concretum*	Undetermined		
Short Bembidion Beetle	*Bembidion curtulatum*	Undetermined		
Diligent Bembidion Beetle	*Bembidion diligens*	Undetermined	#	
Dauricum Bembidion Beetle	*Bembidion dauricum*	Undetermined		
Striated Bembidion Beetle	*Bembidion fortestriatum*	Undetermined		
Pitted Bembidion Beetle	*Bembidion foveum*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Marked Bembidion Beetle	*Bembidion graphicum*	Undetermined		
Grap's Bembidion Beetle	*Bembidion grapii*	Secure		
Hast's Bembidion Beetle	*Bembidion hastii*	Undetermined		
Taiga Bembidion Beetle	*Bembidion hyperboraeorum*	Undetermined		
Longer Bembidion Beetle	*Bembidion incrematum*	Undetermined		
Salt Bembidion Beetle	*Bembidion insulatum*	Undetermined		
Bling Bembidion Beetle	*Bembidion interventor*	Undetermined		
Kuprianov's Bembidion Beetle	*Bembidion kuprianovii*	Undetermined	∃[6]	
Lapland Bembidion Beetle	*Bembidion lapponicum*	Undetermined		
Dawson Bembidion Beetle	*Bembidion lenae*	Undetermined		
Sandy-beach Bembidion Beetle	*Bembidion levettei*	Undetermined		
Manning Bembidion Beetle	*Bembidion manningense*	Undetermined		
Mulberry Bembidion Beetle	*Bembidion morulum*	Undetermined		
Changing Bembidion Beetle	*Bembidion mutatum*	Undetermined		
Black Bembidion Beetle	*Bembidion nigripes*	Secure		
Brillant Bembidion Beetle	*Bembidion nitidum*	Undetermined		
Dry-field Bembidion Beetle	*Bembidion obscurellum*	Undetermined		
Clay-beach Bemdidion Beetle	*Bembidion patruele*	Undetermined		
Oily Bembidion Beetle	*Bembidion petrosum*	Undetermined		
Flat Bembidion Beetle	*Bembidion planatum*	Undetermined		
Pseudocautum Bembidion Beetle	*Bembidion pseudocautum*	Undetermined		
Dotted-lined Bembidion Beetle	*Bembidion punctatostriatum*	Undetermined		
Quadri-pitted Bembidion Beetle	*Bembidion quadrifoveolatum*	Undetermined	∃[6]	
Graden Bembidion Beetle	*Bembidion quadrimaculatum*	Undetermined		
Field Bembidion Beetle	*Bembidion rupicola*	Undetermined		
Salebratum Bembidon Beetle	*Bembidion salebratum*	Undetermined		
Two-spotted Bembidion Beetle	*Bembidion scopulinum*	Undetermined		
Saline Bembidion Beetle	*Bembidion sejunctum*	Undetermined		
Semipunctuated Bembidon Beetle	*Bembidion semipunctatum*	Undetermined		
Dark Bembidion Beetle	*Bembidion sordidum*	Undetermined		
Grooved Bembidion Beetle	*Bembidion sulcipenne*	Undetermined		
Timid Bembidion Beetle	*Bembidion timidum*	Undetermined		
Transparent Bembidion Beetle	*Bembidion transparens*	Undetermined		
Rocky-creek Bembidion Beetle	*Bembidion transversale*	Undetermined		
Shadow Bembidion Beetle	*Bembidion umbratum*	Undetermined		
Umiat Bembidion Beetle	*Bembidion umiatense*	Undetermined	∃[6]	
Multicolour Bembidion Beetle	*Bembidion versicolor*	Undetermined		
Viridicolle Bembidion Beetle	*Bembidion viridicolle*	Undetermined		
Yukon Bembidion Beetle	*Bembidion yukonum*	Undetermined		
Chain-link Blethisa Beetle	*Blethisa catenaria*	Undetermined		
Marsh Blethisa Beetle	*Blethisa hudsonica*	Undetermined		



Chain-link Blethisia Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Bog Blethisa Beetle	*Blethisa julii*	Undetermined		
Many-spotted Blethisa Beetle	*Blethisa multipunctata*	Undetermined		
Large Blethisa Beetle	*Blethisa quadricollis*	Undetermined		
Leconte's Blethisa Beetle	*Bradycellus lecontei*	Undetermined		
Basket Ground Beetle	*Calathus ingratus*	Undetermined		
Fiery Hunter Ground Beetle	*Calosoma calidum*	Undetermined	∃[6]	
Worn-out Hunter Ground Beetle	*Calosoma obsoletum*	Undetermined	∃[6]	
Chamisson Ground Beetle	*Carabus chamissonis*	Undetermined		
Meander Ground Beetle	*Carabus maeander*	Undetermined		
Gravel Ground Beetle	*Carabus taedatus*	Undetermined		
Short-necked Ground Beetle	*Carabus truncaticollis*	Undetermined		
Vietinghoff's Ground Beetle	*Carabus vietinghoffii*	Secure		
Dark-copper Stinking Beetle	*Chlaenius alternatus*	Undetermined		
Small-green Stinking Beetle	*Chlaenius lithophilus*	Undetermined		
Black Stinking Beetle	*Chlaenius niger*	Undetermined		
Prairie Stinking Beetle	*Chlaenius purpuricollis*	Undetermined		
Twelve-spotted Tiger Beetle	*Cicindela duodecimguttata*	Secure		
Common Claybank Tiger Beetle	*Cicindela limbalis*	Secure		
Sandy Tiger Beetle	*Cicindela limbata*	Sensitive		
Boreal Long-lipped Tiger Beetle	*Cicindela longilabris*	Secure		
Western Tiger Beetle	*Cicindela oregona*	Secure		
Oblique-lined Tiger Beetle	*Cicindela tranquebarica*	Secure		
Sand Cymindis Beetle	*Cymindis cribricollis*	Undetermined		
Flat Cymindis Beetle	*Cymindis planipennis*	Undetermined		
Tundra Cymindis Beetle	*Cymindis unicolor*	Undetermined		
Richardson Mountain Cymindis Beetle	*Cymindis vaporariorum*	Undetermined		
Cold-seep Ground Beetle	*Diacheila arctica*	Undetermined		
Moss-loving Ground Beetle	*Diacheila polita*	Undetermined		
Kindred Ground Beetle	*Dicheirotrichus cognatus*	Secure		
Mannerheim's Ground Beetle	*Dicheirotrichus mannerheimii*	Undetermined		
Blunt Ground Beetle	*Diplocheila obtusa*	Undetermined		
Striped Ground Beetle	*Diplocheila striatopunctata*	Undetermined		
Aterrimus Ground Beetle	*Diplous aterrimus*	Undetermined		
Golden-green Ground Beetle	*Dyschirius aeneolus*	Undetermined		

Chamisson Ground Beetle
Photo Credit: H Goulet

Gravel Ground Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Dejean's Ground Beetle	*Dyschirius dejeanii*	Undetermined		
Globular Ground Beetle	*Dyschirius globulosus*	Undetermined	#	
Winter Ground Beetle	*Dyschirius hiemalis*	Undetermined		
Melancholic Ground Beetle	*Dyschirius melancholicus*	Undetermined		
Polite Ground Beetle	*Dyschirius politus*	Undetermined		
Subarctic Ground Beetle	*Dyschirius subarcticus*	Undetermined		
Truncated Ground Beetle	*Dyschirius truncatus*	Undetermined		
Anceps Ground Beetle	*Elaphropus anceps*	Undetermined		
Boreal Elaphrus Beetle	*Elaphrus americanus*	Secure		
Invisible Elaphrus Beetle	*Elaphrus angusticollis*	Undetermined		
Clay-loving Elaphrus Beetle	*Elaphrus californicus*	Undetermined		
Clairville's Elaphrus Beetle	*Elaphrus clairvillei*	Secure		
Sooty Elaphrus Beetle	*Elaphrus fuliginosus*	Undetermined	#	
Lapland Elaphrus Beetle	*Elaphrus lapponicus*	Secure		
Salt-marsh Elaphrus Beetle	*Elaphrus lecontei*	Undetermined	∃[2]	
Olive Elaphrus Beetle	*Elaphrus olivaceus*	Undetermined	∃[3]	
Mountain-creek Elaphrus Beetle	*Elaphrus purpurans*	Secure	∃[5]	
Tundra Elaphrus Beetle	*Elaphrus trossulus*	Undetermined		
Subarctic-river Elaphrus Beetle	*Elaphrus tuberculatus*	Secure		
Olympian Small Beetle	*Gehringia olympica*	Undetermined		
Sand-blowout Harpaline Beetle	*Harpalobrachys leiroides*	Undetermined		
Lame Harpaline Beetle	*Harpalus amputatus*	Undetermined		
Fulvia Harpaline Beetle	*Harpalus fulvilabris*	Undetermined		
Brown Harpaline Beetle	*Harpalus fuscipalpis*	Undetermined		
Inoffensive Harpaline Beetle	*Harpalus innocuus*	Undetermined		
Left-footed Harpaline Beetle	*Harpalus laevipes*	Undetermined		
Large-headed Harpaline Beetle	*Harpalus laticeps*	Undetermined		
Lewis' Harpaline Beetle	*Harpalus lewisii*	Undetermined		
Black-legged Harpaline Beetle	*Harpalus nigritarsis*	Undetermined		
Opaque Harpaline Beetle	*Harpalus opacipennis*	Undetermined		
Plenalis Harpaline Beetle	*Harpalus plenalis*	Undetermined		
Solitary Harpaline Beetle	*Harpalus solitaris*	Undetermined		
Field Harpaline Beetle	*Harpalus somnulentus*	Undetermined		
Flower Lebia Beetle	*Lebia viridis*	Undetermined		
Litter Loricera Beetle	*Loricera pilicornis*	Undetermined		

Mannerheim's Ground Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Arctic Smooth Beetle	*Miscodera arctica*	Undetermined		
Beringian Nebria Beetle	*Nebria frigida*	Secure	ⓘ[5]	
Gyllenhal's Nebria Beetle	*Nebria gyllenhali*	Secure	ⓘ[5]	
Hudson Nebria Beetle	*Nebria hudsonica*	Undetermined		
Snow-loving Nebria Beetle	*Nebria nivalis*	Secure	ⓘ[5]	
Oblique Nebria Beetle	*Nebria obliqua*	Undetermined		
Sahlberg's Nebria Beetle	*Nebria sahlbergii*	Undetermined		G1G3 – 2007
Aquatic Curious Beetle	*Notiophilus aquaticus*	Undetermined		
Boreal Curious Beetle	*Notiophilus borealis*	Undetermined		
Intermediate Curious Beetle	*Notiophilus intermedius*	Undetermined	#	
Striated Curious Beetle	*Notiophilus semistriatus*	Undetermined	∃[6]	
Ocellate Creek Beetle	*Opisthius richardsoni*	Undetermined		
Pitted Patrobus Beetle	*Patrobus foveocollis*	Undetermined		
Long-horned Patrobus Beetle	*Patrobus longicornis*	Undetermined		
Nothern Patrobus Beetle	*Patrobus septentrionis*	Undetermined		
Marked Patrobus Beetle	*Patrobus stygicus*	Undetermined		
Boreal Marsh Beetle	*Pelophila borealis*	Secure		
Tussock Marsh Beetle	*Pelophila rudis*	Undetermined		
Proper Platynus Beetle	*Platynus decentis*	Undetermined		
Mannerheim's Platynus Beetle	*Platynus mannerheimii*	Undetermined		
Beaver-pond Shore Ground Beetle	*Platypatrobus lacustris*	Undetermined		
Gardener Ground Beetle	*Poecilus lucublandus*	Undetermined		
Russian Ground Beetle	*Poecilus nearcticus*	Undetermined		
Pitted Ground Beetle	*Pterostichus adstrictus*	Secure		
Agonus Ground Beetle	*Pterostichus agonus*	Undetermined		
Arctic Ground Beetle	*Pterostichus arcticola*	Undetermined		
Barryorum Ground Beetle	*Pterostichus barryorum*	Undetermined		
Small-horned Ground Beetle	*Pterostichus brevicornis*	Undetermined		
Bryant's Ground Beetle	*Pterostichus bryanti*	Undetermined		
Caribou Ground Beetle	*Pterostichus caribou*	Undetermined		
Wood Ground Beetle	*Pterostichus caudicalis*	Undetermined		
Chipewyan Ground Beetle	*Pterostichus chipewyan*	Undetermined		
Raven Ground Beetle	*Pterostichus corvinus*	Undetermined		
Beaufort Ground Beetle	*Pterostichus costatus*	Undetermined		
Female Ground Beetle	*Pterostichus empetricola*	Undetermined		
Hudson Ground Beetle	*Pterostichus hudsonicus*	Undetermined		
Mandibulate Ground Beetle	*Pterostichus mandibularoides*	Secure		
Cousin Ground Beetle	*Pterostichus patruelis*	Undetermined	#	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Deciduous Ground Beetle	*Pterostichus pensylvanicus*	Undetermined		
Pingo Ground Beetle	*Pterostichus pinguedineus*	Secure		
Elegant Ground Beetle	*Pterostichus punctatissimus*	Undetermined		
Riparian Ground Beetle	*Pterostichus riparius*	Undetermined		
Soper's Ground Beetle	*Pterostichus soperi*	Undetermined		
Soper's Ground Beetle	*Pterostichus soperi*	Undetermined		
Almost-smooth Ground Beetle	*Pterostichus sublaevis*	Undetermined		
Tareumuit Ground Beetle	*Pterostichus tareumiut*	Secure		
Belly Ground Beetle	*Pterostichus ventricosus*	Secure		
Grub Ground Beetle	*Pterostichus vermiculosus*	Undetermined		
Burning Forest Ground Beetle	*Sericoda bembidioides*	Undetermined		
Campfire Ground Beetle	*Sericoda obsoleta*	Undetermined		
Burnt-wood Ground Beetle	*Sericoda quadripunctata*	Undetermined		
Tundra Ground Beetle	*Stereocerus haematopus*	Undetermined		
Sunshine Ground Beetle	*Syntomus americanus*	Secure		
Apex Ground Beetle	*Trechus apicalis*	Undetermined		
Coleoptera – Cerambycidae				Beetles – Longhorn beetles
Little Flatface Longhorn Beetle	*Acanthocinus pusillus*	Undetermined		
Shapeless Flower Longhorn Beetle	*Acmaeops proteus*	Undetermined		
Bloody Flower Longhorned Beetle	*Anastrangalia sanguinea*	Undetermined		
Ridged Bark Longhorn Beetle	*Arhopalus asperatus*	Undetermined		
Pitted Bark Longhorn Beetle	*Arhopalus foveicollis*	Undetermined		
Striated Bark Longhorn Beetle	*Asemum striatum*	Undetermined		
Vancouver Flower Longhorn Beetle	*Evodinus monticola vancouveri*	Undetermined		
Meadow Flower Longhorn Beetle	*Gnathacmaeops pratensis*	Undetermined		
Silver Flower Longhorn Bettle	*Grammoptera subargentata*	Undetermined		
Ground Flower Longhorn Beetle	*Judolia montivagans*	Undetermined		
Square Flower Longhorn Beetle	*Judolia quadrata*	Undetermined		
Golden Flower Longhorn Beetle	*Lepturobosca chrysocoma*	Undetermined		
Bareland Longhorned Beetle	*Megasemum asperum*	Undetermined		
Shape-shifter Longhorn Beetle	*Meriellum proteus*	Undetermined		
Spotted Pine Sawyer	*Monochamus mutator*	Undetermined		
Northeastern Pine Sawyer	*Monochamus notatus*	Undetermined		
White-spotted Sawyer	*Monochamus scutellatus*	Secure		
Epaulette Longhorn Beetle	*Neoclytus leucozonus*	Undetermined		
Lamed Flower Longhorn Beetle	*Pachyta lamed*	Undetermined		
Scribbling Flower Longhorn Beetle	*Pidonia scripta*	Undetermined		
Mixed-spotted Flatface Sawyer	*Pogonocherus mixtus*	Undetermined		
Tufted Flatface Sawyer	*Pogonocherus penicillatus*	Undetermined		
Redneck Longhorn Beetle	*Pronocera collaris*	Undetermined		
Rusty Flower Longhorn Beetle	*Pygoleptura nigrella*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Ribbed Pine Borer	*Rhagium inquisitor*	Undetermined		
Small Poplar Borer	*Saperda populnea*	Undetermined		
Fir-tree Borer	*Semanotus litigiosus*	Undetermined		
Cinnamon Bark Longhorn Beetle	*Tetropium cinnamopterum*	Undetermined		
Orange Bark Longhorn Beetle	*Tetropium parvulum*	Undetermined		
Rough Flower Longhorn Beetle	*Trachysida aspera*	Undetermined		
Variable Flower Longhorn Beetle	*Trachysida mutabilis*	Undetermined		
Harris's Gladiator Longhorn Beetle	*Tragosoma harrisii*	Undetermined		
Grizzled Zebra Borer	*Xylotrechus annosus*	Undetermined		
Schaeffer's Zebra Beetle	*Xylotrechus schaefferi*	Undetermined		
Spruce Zebra Beetle	*Xylotrechus undulatus*	Undetermined		
Coleoptera – Cerylonidae				Beetles – Minute bark beetles
Unicolour Minute Bark Beetle	*Cerylon unicolor*	Undetermined		
Coleoptera – Chrysomelidae				Beetles – Leaf beetles
Little-brother Pea Beetle	*Acanthoscelides fraterculus*	Undetermined		
Sand Willow Flea Beetle	*Altica bimarginata*	Undetermined		
Dogwood Flea Beetle	*Altica corni*	Undetermined		
Lazy Flea Beetle	*Altica inaerata*	Undetermined		
Bronzed Flea Beetle	*Altica tombacina*	Undetermined		
Western Grape Rootworm	*Bromius obscurus*	Undetermined		
Calfornian Caligraphy Leaf Beetle	*Calligrapha californica*	Undetermined		
Spotted Caligraphy Leaf Beetle	*Calligrapha multipunctata*	Undetermined		
Embossed Caligraphy Leaf Beetle	*Calligrapha verrucosa*	Undetermined		
Pale Tortoise Beetle	*Cassida flaveola*[c]	Alien		
Erratic Flea Beetle	*Chaetocnema irregularis*	Undetermined		
Long Flea Beetle	*Chaetocnema protensa*	Presence Expected		
Hudsonian Leaf Beetle	*Chrysolina hudsonica*	Undetermined		
Blaisdel's Leaf Beetle	*Chrysomela blaisdelli*	Undetermined		
Aspen Leaf Beetle	*Chrysomela crotchi*	Undetermined		

Calfornian Caligraphy Leaf Beetle
Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Fake Leaf Beetle	*Chrysomela falsa*	Undetermined		
St. Lawrence Leaf Beetle	*Chrysomela laurentia*	Undetermined		
Linear-spotted Leaf Beetle	*Chrysomela lineatopunctata*	Undetermined		
Maine Leaf Beetle	*Chrysomela mainensis*	Undetermined		
Separated Leaf Beetle	*Chrysomela semota*	Undetermined		
Our Lord Leaf Beetle	*Coleothorpa dominicana*	Undetermined		
Shining Flea Beetle	*Crepidodera digna*	Undetermined		
Heikertinger's Flea Beetle	*Crepidodera heikertingeri*	Undetermined		
Small Flea Beetle	*Crepidodera nana*	Undetermined		
Poplar Flea Beetle	*Crepidodera populivora*	Undetermined		
Alternate Flea Beetle	*Disonycha alternata*	Undetermined		
Tall Flea Beetle	*Disonycha procera*	Undetermined		
Pinpoint Flea Beetle	*Disonycha punctigera*	Undetermined		
Spinach Flea Beetle	*Disonycha xanthomelas*	Undetermined		
Cazier's Water Leaf Beetle	*Donacia cazieri*	Undetermined		
Beautiful Swimming Leaf Beetle	*Donacia distincta*	Undetermined		
Hairy Swimming Leaf Beetle	*Donacia hirticollis*	Undetermined		
Aquatic Sedge Leaf Beetle	*Donacia porosicollis*	Undetermined		
Shoreline Water Leaf Beetle	*Donacia proxima*	Undetermined		
Red Turnip Beetle	*Entomoscelis americana*	Undetermined		
Waterlily Leaf Beetle	*Galerucella nymphaeae*	Undetermined		
Seablue Leaf Beetle	*Gastrophysa cyanea*	Undetermined		
Peerless Leaf Beetle	*Gastrophysa dissimilis*	Undetermined		
American Aspen Beetle	*Gonioctena americana*	Undetermined		
Snow Leaf Beetle	*Gonioctena nivosa*	Undetermined		
Notman's Leaf Beetle	*Gonioctena notmani*	Undetermined		
Horsetail Flea Beetle	*Hippuriphila canadensis*	Undetermined		
Mourning Flea Beetle	*Kuschelina lugens*	Undetermined		
Red-lined Flea Beetle	*Kuschelina vians*	Undetermined		
Wide Bean Beetle	*Kytorhinus prolixus*	Undetermined		
Longlegged Flea Beetle	*Longitarsus erro*	Undetermined		
Stefansson's Arctic Leaf Beetle	*Neogalerucella stefanssoni*	Undetermined		
Arctic Ophrarella Beetle	*Ophraella arctica*	Undetermined		
Dark-marked Casebearer Beetle	*Pachybrachis melanostictus*	Undetermined		
Wetland Phaedon Beetle	*Phaedon armoraciae*	Alien		
Light Phaedon Beetle	*Phaedon laevigatus*	Alien		
Mustard Phaedon Beetle	*Phaedon oviformis*	Undetermined		
Sprout Phaedon Beetle	*Phaedon viridis*	Undetermined		
Birch Leaf Beetle	*Phratora hudsonia*	Undetermined		
Beringian Willow Leaf Beetle	*Phratora interstitialis*	Undetermined		
Aspen Skeletonizer	*Phratora purpurea*	Undetermined		
Decorated Leaf Beetle	*Phyllobrotica decorata*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Oblong Flea Beetle	*Phyllotreta oblonga*	Undetermined		
Striated Flea Beetle	*Phyllotreta striolata*	Alien		
Zimmerman's Flea Beetle	*Phyllotreta zimmermanni*	Undetermined		
Mountain Flea Beetle	*Phyllotreta ramosoi*	Undetermined		
Golden Swimming Leaf Beetle	*Plateumaris aurifera*	Undetermined		
Yellowfooted Swimming Leaf Beetle	*Plateumaris flavipes*	Undetermined		
Frost's Aquatic Leaf Beetle	*Plateumaris frosti*	Undetermined		
Tawny-legged Aquatic Leaf Beetle	*Plateumaris fulvipes*	Undetermined		
Germar's Swimming Leaf Beetle	*Plateumaris germari*	Undetermined		
Shining Aquatic Leaf Beetle	*Plateumaris nitida*	Undetermined		
Tiny Swimming Leaf Beetle	*Plateumaris pusilla*	Undetermined		
Strong Aquatic Leaf Beetle	*Plateumaris robusta*	Undetermined		
Northern Leaf Beetle	*Prasocuris boreella*	Undetermined		
Marsh Leaf Beetle	*Prasocuris phellandrii*	Undetermined		
Banded Leaf Beetle	*Prasocuris vittata*	Undetermined		
Hop Flea Beetle	*Psylliodes punctulatus*	Undetermined		
Hairy Leaf Beetle	*Syneta pilosa*	Undetermined		
Grey Willow Leaf Beetle	*Tricholochmaea decora*	Undetermined		
Pierced-winged Leaf Beetle	*Tricholochmaea punctipennis*	Undetermined		
Coleoptera – Ciidae				Beetles – Minute tree-fungus beetles
Darkfooted Cis Beetle	*Cis fuscipes*	Undetermined		
Shaggy Cis Beetle	*Cis horridulus*	Undetermined		
Miller Cis Beetle	*Cis pistorius*	Undetermined		
Groovy Cis Beetle	*Cis striolatus*	Undetermined		
Manitoba Tree-fungus Beetle	*Dolichocis manitoba*	Undetermined		
Pitted Fungus Beetle	*Orthocis punctatus*	Undetermined		
Coleoptera – Cleridae				Beetles – Checkered beetles
Violet Checkered Beetle	*Necrobia violacea*	Alien		
Leconte's Checkered Beetle	*Phyllobaenus lecontei*	Undetermined		
Wavering Checkered Beetle	*Thanasimus dubius*	Undetermined		
Wavy Checkered Beetle	*Thanasimus undatulus*	Undetermined		
Ornate Checkered Beetle	*Trichodes ornatus*	Undetermined		
Coleoptera – Coccinellidae				Beetles – Lady beetles
Two-spotted Lady Beetle	*Adalia bipunctata*	Secure		
Eye-spotted Lady Beetle	*Anatis mali*	Undetermined		
Marsh Lady Beetle	*Anisosticta bitriangularis*	Secure		
Boreal Lady Beetle	*Anisosticta borealis*	Undetermined		
White-fronted Lady Beetle	*Brachiacantha albifrons*	Undetermined		
Winter Lady Beetle	*Brumoides septentrionis*	Undetermined		
Cream-spotted Lady Beetle	*Calvia quatuordecimguttata*	Secure		
Ulke's Lady Beetle	*Ceratomegilla ulkei*	Undetermined		

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Nice Lady Beetle	*Coccidula lepida*	Undetermined		
Shining Lady Beetle	*Coccinella fulgida*	Undetermined		
Hieroglyphic Lady Beetle	*Coccinella hieroglyphica*	Undetermined		
Tamarack Lady Beetle	*Coccinella monticola*	Undetermined		
Seven-spotted Lady Beetle	*Coccinella septempunctata*	Alien	∃[6]	
Transverse Lady Beetle	*Coccinella transversoguttata*	Secure	ⓘ[5]	Special Concern – 2016
Three-banded Lady Beetle	*Coccinella trifasciata*	Secure		
Angular Lady Beetle	*Didion longulum*	Undetermined	#	
Twice-stained Lady Beetle	*Didion punctatum*	Undetermined		
American Lady Beetle	*Hippodamia americana*	Undetermined		
Arctic Lady Beetle	*Hippodamia arctica*	Undetermined		
Convergent Lady Beetle	*Hippodamia convergens*[d]	Presence Expected		
Waterside Lady Beetle	*Hippodamia falcigera*	Secure		
Glacial Lady Beetle	*Hippodamia glacialis*	Undetermined		
Parenthesis Lady Beetle	*Hippodamia parenthesis*	Secure		
Five-marked Lady Beetle	*Hippodamia quinquesignata*	Secure		
Sinuate Lady Beetle	*Hippodamia sinuata*	Undetermined	∃[4]	
Thirteen-spotted Lady Beetle	*Hippodamia tredecimpunctata*	Secure		
Poorly-known Lady Beetle	*Hyperaspis consimilis*	Undetermined		
Jasper Lady Beetle	*Hyperaspis jasperensis*	Undetermined		
Episcopalian Lady Beetle	*Macronaemia episcopalis*	Undetermined		
Hudsonian Lady Beetle	*Mulsantina hudsonica*	Undetermined	∃[6]	
Painted Lady Beetle	*Mulsantina picta*	Presence Expected	∃[6]	
Streaked Lady Beetle	*Myzia pullata*	Presence Expected	∃[6]	
Farmer's Lady Beetle	*Nephus georgei*	Undetermined		
Twenty-spotted Lady Beetle	*Psyllobora vigintimaculata*	Undetermined	∃[4]	
Lacustrine Lady Beetle	*Scymnus lacustris*	Undetermined		
Gloomy Lady Beetle	*Scymnus tenebrosus*	Undetermined	#	

Transverse Lady Beetle Photo Credit: H Goulet

Cream-coloured Lady Beetle Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Coleoptera – Corylophidae				Beetles – Hooded beetles
Lugubrious Hooded Beetle	*Clypastraea lugubris*	Undetermined		
Small-salver Hooded Beetle	*Orthoperus scutellaris*	Undetermined		
Coleoptera – Cryptophagidae				Beetles – Fungus beetles
Saddle Cloth Fungus Beetle	*Atomaria ephippiata*	Undetermined		
Rusty Silk Fungus Beetle	*Caenoscelis ferruginea*	Undetermined		
Angel Silk Fungus Beetle	*Cryptophagus jakowlewi*	Undetermined		
Thick Silk Fungus Beetle	*Henotiderus centromaculatus*	Undetermined		
Coleoptera – Cucujidae				Beetles – Flat bark beetle
Dark Flat Bark Beetle	*Pediacus fuscus*	Undetermined		
Coleoptera – Curculionidae				Beetles – Snout beetles
Carpin's Snout Beetle	*Acalyptus carpini*	Undetermined		
Potato Bud Weevil	*Anthonomus nigrinus*	Undetermined		
Fireweed Weevil	*Auleutes epilobii*	Undetermined		
Anderson's Bark Beetle	*Carphoborus andersoni*	Undetermined		
Carr's Bark Beetle	*Carphoborus carri*	Undetermined		
American Weevil	*Ceutorhynchus americanus*	Undetermined		
Quercetin Weevil	*Ceutorhynchus querceti*	Undetermined		
Hairy Weevil	*Ceutorhynchus subpubescens*	Undetermined		
Leconte's Weevil	*Cnemogonus lecontei*	Undetermined		
Artemisia Broad-nosed Weevil	*Connatichela artemisiae*	Presence Expected		
Boreal Cryptic Bark Beetle	*Crypturgus borealis*	Undetermined		
Mountain Pine Beetle	*Dendroctonus ponderosae*	Undetermined		
Boreal Spruce Beetle	*Dendroctonus punctatus*	Undetermined		
Red-winged Spruce Beetle	*Dendroctonus rufipennis*	Secure		
Eastern Larch Beetle	*Dendroctonus simplex*	Undetermined		
Red Turpentine Beetle	*Dendroctonus valens*	Undetermined		
Frost's Willow Weevil	*Dorytomus frostii*	Undetermined		
Innocent Willow Weevil	*Dorytomus imbecillus*	Undetermined		
Whitemarked Willow Weevil	*Dorytomus leucophyllus*	Undetermined		
Lurid Willow Beetle	*Dorytomus luridus*	Undetermined		
Mannerheim's Willow Weevil	*Dorytomus mannerheimi*	Undetermined		
Reddish Willow Beetle	*Dorytomus rufulus*	Undetermined		
Poplar Bud Weevil	*Dorytomus vagenotatus*	Undetermined		
Faber Spruce Bark Beetle	*Dryocoetes affaber*	Undetermined		
Hairy Spruce Bark Beetle	*Dryocoetes autographus*	Secure		
Scaled Broad-nosed Weevil	*Evotus naso*	Undetermined		
Douglas Fir Root Bark Beetle	*Hylastes nigrinus*	Undetermined		
Red Bark Beetle	*Hylastes ruber*	Undetermined		
Seedling Debarking Weevil	*Hylobius congener*	Undetermined		
Pine Debarking Weevil	*Hylobius pinicola*	Undetermined		

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Pore-making Hylurgops Beetle	*Hylurgops porosus*	Undetermined		
Net-making Hylurgops Beetle	*Hylurgops reticulatus*	Undetermined		
Steppe Weevil	*Hypera diversipunctata*	Undetermined		
Three-lined Weevil	*Hypera trivittata*	Undetermined		
Boreal Engraver	*Ips borealis*	Secure		
Northern Spruce Engraver	*Ips perturbatus*	Undetermined		
Pine Engraver	*Ips pini*	Undetermined		
Western Engraver	*Ips tridens*	Undetermined		
Arctic Flea Weevil	*Isochnus arcticus*	Presence Expected		
Whipping Flea Weevil	*Isochnus flagellum*	Undetermined		
Tundra Broad-nosed Weevil	*Lepidophorus lineaticollis*	Secure		
Hooded Lepyrus Weevil	*Lepyrus capucinus*	Undetermined		
Twin Lepyrus Weevil	*Lepyrus gemellus*	Undetermined		
Labrador Lepyrus Weevil	*Lepyrus labradorensis*	Undetermined		
Nordenskiold's Lepyrus Weevil	*Lepyrus nordenskioeldi*	Undetermined		
Wetland Lepyrus Weevil	*Lepyrus palustris*	Undetermined		
Stefansson's Lepyrus Weevil	*Lepyrus stefanssoni*	Undetermined		
Skinny Weevil	*Listronotus filiformis*	Undetermined		
Scattered Weevil	*Listronotus sparsus*	Undetermined		
Knotweed Weevil	*Lixus rubellus*	Undetermined		
Spruce Magdalid Weevil	*Magdalis alutacea*	Undetermined		
Saltbush Broad-nosed Weevil	*Ophryastes sulcirostris*	Undetermined		
Carving Bark Beetle	*Orthotomicus caelatus*	Undetermined		
Strawberry Root Weevil	*Otiorhynchus ovatus*	Alien		
Pine Bark Beetle	*Phloeosinus pini*	Undetermined		
White Spruce Engraver	*Phloeotribus piceae*	Undetermined		
European Water Milfoil Weevil	*Phytobius leucogaster*	Alien		
Pine Bole Weevil	*Pissodes affinis*	Undetermined		
Small Spruce Weevil	*Pissodes rotundatus*	Alien		
Schwarz's Yosemite Bark Weevil	*Pissodes schwarzi*	Undetermined		
White Spruce Weevil	*Pissodes strobi*	Undetermined		
Lodgepole Terminal Weevil	*Pissodes terminalis*	Undetermined		
Fir Twig Beetle	*Pityophthorus balsameus*	Undetermined		
Bassett's Twig Beetle	*Pityophthorus bassetti*	Undetermined		
Red Spruce Twig Beetle	*Pityophthorus cascoensis*	Undetermined		
Lodgepole Pine Twig Beetle	*Pityophthorus murrayanae*	Undetermined		
Pinales Twig Beetle	*Pityophthorus nitidus*	Undetermined		
Opaque Twig Weevil	*Pityophthorus opaculus*	Undetermined		
Eastern Pine Twig Beetle	*Pityophthorus pulchellus*	Undetermined		
Four-eyed Spruce Bark Beetle	*Polygraphus rufipennis*	Undetermined		
Armoured Willow Beetle	*Proctorus armatus*	Undetermined		
Grabbing Willow Beetle	*Proctorus decipiens*	Undetermined		

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Knotweed Weevil	*Rhinoncus pyrrhopus*	Undetermined		
Brown Bark Weevil	*Rhyncolus brunneus*	Undetermined		
Fanclub Bark Beetle	*Scierus annectans*	Undetermined		
Spruce Engraver	*Scolytus piceae*	Undetermined		
Sweetpea Broad-nosed Weevil	*Sitona aquilonius*	Undetermined		
Sweet Clover Weevil	*Sitona cylindricollis*	Alien		
Clover Root Weevil	*Sitona hispidulus*	Alien		
Alfalfa Curculio	*Sitona lineellus*	Secure		
Mixed Cleonid Weevil	*Stephanocleonus confusus*	Undetermined		
Immaculate Cleonid Weevil	*Stephanocleonus immaculatus*	Undetermined		
Parshus Cleonid Weevil	*Stephanocleonus parshus*	Undetermined		
Black Miner Weevil	*Tachyerges niger*	Undetermined		
Willow Miner Weevil	*Tachyerges salicis*	Undetermined		
Bristled-brush Broad-nosed Weevil	*Tanymecus confusus*	Undetermined		
Simple Broad-nosed Weevil	*Trichalophus simplex*	Undetermined		
Birch Ambrosia Beetle	*Trypodendron betulae*	Undetermined		
Striped Ambrosia Beetle	*Trypodendron lineatum*	Presence Expected		
Willow Bark Beetle	*Trypophloeus striatulus*	Undetermined		
Coleoptera – Dermestidae				Beetles – Skin beetles
Larder Beetle	*Dermestes lardarius*	Alien		
Hide and Tallow Dermestid	*Dermestes talpinus*	Undetermined		
Corn Carpet Beetle	*Megatoma cylindrica*	Undetermined		
Undertaker Carpet Beetle	*Reesa vespulae*	Undetermined		
Odd Beetle	*Thylodrias contractus*	Alien		
Sinister Granary Beetle	*Trogoderma sinistrum*	Undetermined		
Coleoptera – Dytiscidae				Beetles – Predaceous diving beetles
Athabascan Predaceous Diving Beetle	*Acilius athabascae*	Undetermined		
Woods Predaceous Diving Beetle	*Acilius semisulcatus*	Secure		
Rockshore Agabus Beetle	*Agabus adpressus*	Undetermined		

Flower Lebia Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Ajax Agabus Beetle	*Agabus ajax*	Undetermined		
Ambiguous Agabus Beetle	*Agabus ambiguus*	Undetermined		
Antenna Agabus Beetle	*Agabus antennatus*	Secure		
Coal-like Agabus Beetle	*Agabus anthracinus*	Secure		
Arctic Agabus Beetle	*Agabus arcticus*	Secure		
Auden's Agabus Beetle	*Agabus audeni*	Secure		
Austin's Agabus Beetle	*Agabus austinii*	Undetermined		
Two-colour Agabus Beetle	*Agabus bicolor*	Secure		
Twofold Agabus Beetle	*Agabus bifarius*	Secure		
Clubbed Agabus Beetle	*Agabus clavicornis*	Secure		
Shielded Agabus Beetle	*Agabus clypealis*	Undetermined		
Cousin Agabus Beetle	*Agabus confinis*	Secure		
Hipped Agabus Beetle	*Agabus coxalis*	Undetermined		
Thick-footed Diving Beetle	*Agabus crassipes*	Undetermined		
Coloured Agabus Beetle	*Agabus discolor*	Secure		
Long Agabus Beetle	*Agabus elongatus*	Secure		
Dark-winged Agabus Beetle	*Agabus fuscipennis*	Secure	ⓘ[5]	
Brown Agabus Beetle	*Agabus infuscatus*	Secure		
Graffiti Agabus Beetle	*Agabus inscriptus*	Secure		
Mackenzie Agabus Beetle	*Agabus mackenziensis*	Undetermined		
Sad Agabus Beetle	*Agabus moestus*	Secure		
Pale Agabus Beetle	*Agabus pallens*	Undetermined		
Dusky-winged Agabus Beetle	*Agabus phaeopterus*	Secure		
Comma Agabus Beetle	*Agabus semipunctatus*	Secure		
Lean Agabus Beetle	*Agabus strigulosus*	Undetermined		
Thomson's Agabus Beetle	*Agabus thomsoni*	Secure		
Drab Agabus Beetle	*Agabus tristis*	Undetermined		
Swift Agabus Beetle	*Agabus velox*	Undetermined		
Zetterstedt's Agabus Beetle	*Agabus zetterstedti*	Undetermined		
Greystriate Predaceous Diving Beetle	*Boreonectes griseostriatus*	Secure		
Bigdot Diving Beetle	*Coelambus impressopunctatus*	Secure		
Dark-brown Diving Beetle	*Coelambus infuscatus*	Secure		
Laccophilinus Diving Beetle	*Coelambus laccophilinus*	Undetermined		
Marklin's Diving Beetle	*Coelambus marklini*	Secure		
Nine-lined Diving Beetle	*Coelambus novemlineatus*	Secure		
Patruelis Diving Beetle	*Coelambus patruelis*	Secure		
Pied Diving Beetle	*Coelambus picatus*	Secure		
Halophilic Diving Beetle	*Coelambus salinarius*	Secure		
Saddled Diving Beetle	*Coelambus sellatus*	Undetermined		
Stitched Diving Beetle	*Coelambus suturalis*	Secure		

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Bulging Diving Beetle	*Coelambus tumidiventris*	Secure		
Mud Predaceous Diving Beetle	*Coelambus turbidus*	Secure		
Nail Diving Beetle	*Coelambus unguicularis*	Secure		
Dahuria Predaceous Diving Beetle	*Colymbetes dahuricus*	Secure		
Axe-like Predaceous Diving Beetle	*Colymbetes dolabratus*	Secure		
Hollowed Predaceous Diving Beetle	*Colymbetes exaratus*	Undetermined		
Paykull's Predaceous Diving Beetle	*Colymbetes paykulli*	Secure		
Sculptured Predaceous Diving Beetle	*Colymbetes sculptilis*	Undetermined		
Convex Predaceous Diving Beetle	*Desmopachria convexa*	Secure		
Alaska Dytiscid Diving Beetle	*Dytiscus alaskanus*	Secure		
Ringed Dytiscid Diving Beetle	*Dytiscus circumcinctus*	Secure		
Dauria Dytiscid Diving Beetle	*Dytiscus dauricus*	Secure		
Understriped Dytiscid Diving Beetle	*Dytiscus fasciventris*	Undetermined		
Harris's Dytiscid Diving Beetle	*Dytiscus harrisii*	Secure		
Free Predaceous Diving Beetle	*Graphoderus liberus*	Undetermined		
Occidental Predaceous Diving Beetle	*Graphoderus occidentalis*	Undetermined		
Complex Predaceous Diving Beetle	*Graphoderus perplexus*	Secure		
Haruspex Predaceous Diving Beetle	*Hydaticus aruspex*	Secure		
Paugus Predaceous Diving Beetle	*Hydrocolus paugus*	Secure		
Ruby Predaceous Diving Beetle	*Hydrocolus rubyae*	Undetermined		
Stagnalis Predaceous Diving Beetle	*Hydrocolus stagnalis*	Undetermined		
Appalachian Water Beetle	*Hydroporus appalachius*	Secure		

Predaceous Diving Beetle Larva
Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Aurora Water Beetle	*Hydroporus aurora*	Undetermined		
Badielus Water Beetle	*Hydroporus badiellus*	Secure		
Taiga Water Beetle	*Hydroporus boraeorum*	Undetermined		
Columbia Water Beetle	*Hydroporus columbianus*	Secure		
Lace Water Beetle	*Hydroporus dentellus*	Secure		
Belittled Water Beetle	*Hydroporus despectus*	Undetermined		
Brownish Water Beetle	*Hydroporus fuscipennis*	Secure		
Mountain Boreal Water Beetle	*Hydroporus geniculatus*	Undetermined		
Lapland Water Beetle	*Hydroporus lapponum*	Secure		
Larson's Water Beetle	*Hydroporus larsoni*	Secure		
Mannerheim's Water Beetle	*Hydroporus mannerheimi*	Undetermined		
Morio Water Beetle	*Hydroporus morio*	Secure		
High Boreal Water Beetle	*Hydroporus nigellus*	Secure		
Noble Water Beetle	*Hydroporus notabilis*	Secure		
Dark Water Beetle	*Hydroporus obscurus*	Secure		
Western Water Beetle	*Hydroporus occidentalis*	Undetermined		
Polar Water Beetle	*Hydroporus polaris*	Secure		
Hairy Water Beetle	*Hydroporus puberulus*	Secure		
Strait Water Beetle	*Hydroporus rectus*	Secure		
Reddish Water Beetle	*Hydroporus rufinasus*	Secure		
Siberian Water Beetle	*Hydroporus sibiricus*	Undetermined		
Marked Water Beetle	*Hydroporus signatus*	Undetermined		
Common Boreal Water Beetle	*Hydroporus striola*	Secure		
Mixed Boreal Water Beetle	*Hydroporus tartaricus*	Undetermined		
Bronzed Water Beetle	*Hydroporus tenebrosus*	Secure		
Plain Water Beetle	*Hydroporus tristis*	Secure		
Say's Diving Beetle	*Hygrotus sayi*	Secure		
Dotlined Predaceous Diving Beetle	*Ilybiosoma seriatum*	Undetermined		
Narrow Predaceous Diving Beetle	*Ilybius angustior*	Undetermined		
Churchill Predaceous Diving Beetle	*Ilybius churchillensis*	Undetermined		
Boreal Predaceous Diving Beetle	*Ilybius discedens*	Secure		
Erichson's Predaceous Diving Beetle	*Ilybius erichsoni*	Secure		
Prairie Predaceous Diving Beetle	*Ilybius fraterculus*	Undetermined		
Opaque Predaceous Diving Beetle	*Ilybius opacus*	Undetermined		
Pitch Predaceous Diving Beetle	*Ilybius picipes*	Secure		
Ribbed Predaceous Diving Beetle	*Ilybius pleuriticus*	Secure		
Copper-tinged Predaceous Diving Beetle	*Ilybius subaeneus*	Secure		
Striped Predaceous Diving Beetle	*Ilybius vittiger*	Undetermined		
Wasastjerna's Predaceous Diving Beetle	*Ilybius wasastjernae*	Secure		

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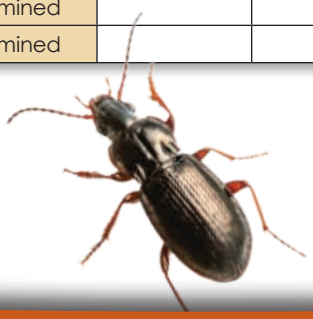
Two-spotted Predaceous Diving Beetle	*Laccophilus biguttatus*	Secure		
Common Laccornis Diving Beetle	*Laccornis conoideus*	Secure		
Oblong Laccornis Diving Beetle	*Laccornis oblongus*	Undetermined		
Dark Predaceous Diving Beetle	*Liodessus obscurellus*	Secure		
Small Predaceous Diving Beetle	*Nebrioporus depressus*	Undetermined		
Lake Superior Predaceous Diving Beetle	*Neoporus superioris*	Secure		
Twisted Predaceous Diving Beetle	*Neoporus undulatus*	Undetermined		
Horn's Predaceous Diving Beetle	*Neoscutopterus hornii*	Secure		
Lefty Predaceous Diving Beetle	*Oreodytes laevis*	Secure		
Sanmark's Predaceous Diving Beetle	*Oreodytes sanmarkii*	Undetermined	#	
Elegant Predaceous Diving Beetle	*Oreodytes scitulus*	Undetermined		
Double-marked Swimming Beetle	*Rhantus binotatus*	Undetermined		
Grassland Swimming Beetle	*Rhantus consimilis*	Undetermined		
Satiny Swimming Beetle	*Rhantus sericans*	Secure		
Signed Swimming Beetle	*Rhantus sinuatus*	Undetermined		
Sutured Swimming Beetle	*Rhantus suturellus*	Secure		
Wallis's Swimming Beetle	*Rhantus wallisi*	Secure		
Cool Predaceous Diving Beetle	*Sanfilippodytes compertus*	Undetermined		
Striate Predaceous Diving Beetle	*Stictotarsus striatellus*	Undetermined		
Coleoptera – Elateridae				Beetles – Click beetles
Sweet Click Beetle	*Aeolus mellillus*	Undetermined		
Muddy Click Beetle	*Agriotes limosus*	Undetermined		
Poplar Click Beetle	*Ampedus apicatus*	Undetermined		
Evan's Click Beetle	*Ampedus evansi*	Undetermined		
Fuscular Click Beetle	*Ampedus fusculus*	Undetermined		
Laurentian Click Beetle	*Ampedus laurentinus*	Undetermined		
Sorrowful Click Beetle	*Ampedus luctuosus*	Undetermined		
Small Click Beetle	*Ampedus miniipennis*	Undetermined		
Sad Click Beetle	*Ampedus moerens*	Undetermined		
Black Click Beetle	*Ampedus nigrinus*	Undetermined		
Chick Click Beetle	*Ampedus pullus*	Undetermined		
Quebec Click Beetle	*Ampedus quebecensis*	Undetermined		
Castle Click Beetle	*Ampedus varipilis*	Undetermined		
Sanborn's Click Beetle	*Ascoliocerus sanborni*	Undetermined		
Beringian Click Beetle	*Berninelsonius hyperboreus*	Undetermined		
Open Heart Click Beetle	*Cardiophorus fenestratus*	Undetermined		
Kindred Heart Click Beetle	*Cardiophorus propinquus*	Presence Expected		
Alaskan Click Beetle	*Corymbitodes lobatus*	Undetermined		
Pygmy Click Beetle	*Corymbitodes pygmaeus*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Kendall's Click Beetle	*Ctenicera kendalli*	Undetermined		
Short-horned Click Beetle	*Danosoma brevicorne*	Undetermined		
Covered Click Beetle	*Danosoma obtectum*	Undetermined		
Toothed Click Beetle	*Denticollis denticornis*	Undetermined		
Variable Click Beetle	*Denticollis varians*	Undetermined		
Decorated Click Beetle	*Eanus decoratus*	Undetermined		
Estriate Click Beetle	*Eanus estriatus*	Undetermined		
Extricated Click Beetle	*Fleutiauxellus extricatus*	Undetermined		
Bicolour Click Beetle	*Hypnoidus bicolor*	Undetermined		
Large-necked Click Beetle	*Hypnoidus impressicollis*	Undetermined		
Mountain Click Beetle	*Hypnoidus rivularius*	Undetermined		
Dark Click Beetle	*Ligmargus funebris*	Undetermined		
Troublesome Click Beetle	*Limonius aeger*	Undetermined		
Chesty Click Beetle	*Limonius pectoralis*	Undetermined		
Strickland's Click Beetle	*Liotrichus stricklandi*	Undetermined		
Western Gentle Click Beetle	*Neohypdonus gentilis*	Undetermined		
Restricted Click Beetle	*Neohypdonus restrictulus*	Undetermined		
Swelling Click Beetle	*Neohypdonus tumescens*	Undetermined		
Resplendent Click Beetle	*Nitidolimonius resplendens*	Undetermined		
Needle-duff Click Beetle	*Prosternon medianum*	Undetermined		
Ochre Click Beetle	*Pseudanostirus ochreipennis*	Undetermined		
Propelling Click Beetle	*Pseudanostirus propolus*	Undetermined		
Three-spotted Click Beetle	*Pseudanostirus triundulatus*	Undetermined		
Watson's Click Beetle	*Pseudanostirus watsoni*	Undetermined		
Grass Click Beetle	*Selatosomus aeripennis*	Undetermined		
Prairie Grain Wireworm	*Selatosomus destructor*	Undetermined		
Festive Click Beetle	*Selatosomus festivus*	Undetermined		
Sombre Click Beetle	*Selatosomus morulus*	Undetermined		
Noble Click Beetle	*Selatosomus pulcher*	Undetermined		
Strange Click Beetle	*Sericus incongruus*	Undetermined		
Plowing Click Beetle	*Setasomus aratus*	Undetermined		
Trim Click Beetle	*Setasomus nitidulus*	Undetermined		
Mendax Click Beetle	*Sylvanelater mendax*	Undetermined		
Coleoptera – Elmidae				Beetles – Riffle beetles
Fastidious Riffle Beetle	*Optioservus fastiditus*	Undetermined		

Pitted Ground Beetle
Photo Credit: H Goulet

Proper Platynus Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Coleoptera – Endomychidae				Beetles – Handsome fungus beetle
Two-spotted Handsome Fungus Beetle	*Endomychus biguttatus*	Undetermined		
Coleoptera – Eucinetidae				Beetles – Plate-thigh beetle
Bloody Plate-thigh Beetle	*Eucinetus haemorrhoidalis*	Alien		
Punctured Plate-thigh Beetle	*Nycteus punctulatus*	Undetermined		
Tiled Plate-thigh Beetle	*Nycteus testaceus*	Undetermined		
Coleoptera – Gyrinidae				Beetles – Whirligig beetle
Brass Whirligig Beetle	*Gyrinus aeratus*	Secure		
Neighbour's Whirligig Beetle	*Gyrinus affinis*	Undetermined		
Double Whirligig Beetle	*Gyrinus bifarius*	Undetermined		
Carved Whirligig Beetle	*Gyrinus cavatus*	Undetermined		
Cousin's Whirligig Beetle	*Gyrinus confinis*	Undetermined		
Dubius Whirligig Beetle	*Gyrinus dubius*	Undetermined		
Bordered Whirligig Beetle	*Gyrinus latilimbus*	Undetermined		
Spotted-belly Whirligig Beetle	*Gyrinus maculiventris*	Undetermined		
Minute Whirligig Beetle	*Gyrinus minutus*	Secure		
Dark Whirligig Beetle	*Gyrinus opacus*	Secure		
Pectoral Whirligig Beetle	*Gyrinus pectoralis*	Secure		
Black-footed Whirligig Beetle	*Gyrinus picipes*	Undetermined		
Say's Whirligig Beetle	*Gyrinus sayi*	Undetermined		
Wallis' Whirligig Beetle	*Gyrinus wallisi*	Secure		
Coleoptera – Haliplidae				Beetles – Crawling water beetles
Saltmarsh Crawling Water Beetle	*Haliplus apicalis*	Undetermined		
Canadian Crawling Water Beetle	*Haliplus canadensis*	Undetermined		
Columbian Crawling Water Beetle	*Haliplus columbiensis*	Undetermined		
Sieve Maker Crawling Water Beetle	*Haliplus cribrarius*	Undetermined		
Fall's Crawling Water Beetle	*Haliplus falli*	Undetermined		
Yellow Crawling Water Beetle	*Haliplus fulvus*	Undetermined		
Clearneck Crawling Water Beetle	*Haliplus immaculicollis*	Undetermined		
Leech's Crawling Water Beetle	*Haliplus leechi*	Undetermined		
Long Crawling Water Beetle	*Haliplus longulus*	Undetermined		
Sleek Crawling Water Beetle	*Haliplus nitens*	Undetermined		
Stagnant Water Crawling Beetle	*Haliplus stagninus*	Undetermined		
Coleoptera – Heteroceridae				Beetles – Variegated mud-loving beetles
Canadian Mud-loving Explorator	*Explorator canadensis*	Undetermined		
Brown Mud-loving Beetle	*Lanternarius brunneus*	Undetermined		
Parrot Mud-loving Beetle	*Lanternarius parrotus*	Undetermined		



Riparian Ground Beetle
Photo Credit: H Goulet

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Sinuous Mud-loving Beetle	*Lanternarius sinuosus*	Undetermined		
Sad Mud-loving Beetle	*Lapsus tristis*	Undetermined		
Coleoptera – Histeridae				Beetles – Clown beetles
Rotund Clown Beetle	*Paromalus teres*	Undetermined		
Spruce Clown Beetle	*Platysoma coarctatum*	Undetermined		
Leconte's Clown Beetle	*Platysoma leconti*	Undetermined		
Distinguished Clown Beetle	*Saprinus distinguendus*	Undetermined		
Coleoptera – Hydraenidae				Beetles – Minute moss beetles
Minute Gleaming Moss Beetle	*Gymnochthebius nitidus*	Undetermined		
Minute Sphagnum Beetle	*Hydraena angulicollis*	Undetermined		
Minute Boreal Moss Beetle	*Ochthebius costatellus*	Undetermined		
Minute Winter Moss Beetle	*Ochthebius hibernus*	Undetermined		
Coleoptera – Hydrophilidae				Beetles – Water scavenger beetles
Hatch's Water Scavenger	*Berosus hatchi*	Undetermined		
Striated Sandy Lake Scavenger	*Berosus sayi*	Undetermined		
Compost Pile Scavenger	*Cercyon analis*	Alien		
Girded Shore Scavenger	*Cercyon cinctus*	Undetermined		
Herceus Shore Scavenger	*Cercyon herceus*	Undetermined		
Manure Scavenger	*Cercyon lateralis*	Alien		
Debris Shore Scavenger	*Cercyon limbatus*	Undetermined		
Mariner Shore Scavenger	*Cercyon marinus*	Secure		
Rosen's Sphagnum Shore Scavenger	*Cercyon roseni*	Undetermined		
Civilized Water Scavenger	*Crenitis morata*	Undetermined		
Marsh Water Scavenger	*Cymbiodyta acuminata*	Secure		
Beaver Pond Scavenger	*Cymbiodyta vindicata*	Undetermined		
Western Pond Scavenger	*Enochrus diffusus*	Undetermined		
Hamilton's Water Scavenger	*Enochrus hamiltoni*	Undetermined		
Ochre Eastern Water Scavenger	*Enochrus ochraceus*	Undetermined		
Beringian Water Scavenger	*Helophorus browni*	Undetermined		
Columbian Lake Scavenger	*Helophorus columbianus*	Undetermined		
Sculpted Pool Scavenger	*Helophorus eclectus*	Undetermined		
Fierce Brook Scavenger	*Helophorus furius*	Undetermined		
Lake Water Scavenger	*Helophorus lacustris*	Secure		
Speckled Water Scavenger	*Helophorus nitiduloides*	Secure		
Oblong Pool Scavenger	*Helophorus oblongus*	Secure		
Oriental Water Scavenger	*Helophorus orientalis*	Undetermined		
Tundra Water Scavenger	*Helophorus parasplendidus*	Undetermined		
Forest Water Scavenger	*Helophorus sempervarians*	Secure		
Siberian Water Scavenger	*Helophorus sibiricus*	Undetermined		
Splendid Arctic Water Scavenger	*Helophorus splendidus*	Presence Expected		
Swampy Water Scavenger	*Hydrobius fuscipes*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Weedy Pond Scavenger	*Hydrochara obtusata*	Undetermined		
Agile Laccobius Scavenger	*Laccobius agilis*	Undetermined		
Boreal Laccobius Scavenger	*Laccobius borealis*	Undetermined		
Ashen Laccobius Scavenger	*Laccobius cinereus*	Secure		
Punctuated Laccobius Scavenger	*Laccobius reflexipenis*	Undetermined		
Parkland Laccobius Scavenger	*Laccobius truncatipenis*	Undetermined		
Copper Water Scavenger	*Paracymus subcupreus*	Secure		
Coleoptera – Kateretidae				Beetles – Short-winged flower beetles
Short-winged Marked Sedge Beetle	*Kateretes pusillus*	Undetermined		
Coleoptera – Lampyridae				Beetles – Firefly beetles
Winter Firefly	*Ellychnia corrusca*	Secure		
Long-range Firefly	*Pyractomena dispersa*	Undetermined		
Dark Firefly	*Pyropyga nigricans*	Undetermined		
Coleoptera – Latridiidae				Beetles – Minute brown fungus beetles
Toothed Brown Scavenger	*Corticaria dentiventris*	Undetermined		
Fiery Brown Scavenger	*Corticaria ferruginea*	Undetermined		
Ruddy-legged Brown Scavenger	*Corticaria rubripes*	Undetermined		
Small Brown Scavenger	*Corticarina minuta*	Undetermined		
Varied Brown Scavenger	*Corticaria varicolor*	Undetermined		
Mould Brown Scavenger	*Enicmus fictus*	Undetermined		
Very Minute Brown Scavenger	*Enicmus mimus*	Undetermined		
Montane Brown Scavenger	*Stephostethus montanus*	Undetermined		
Coleoptera – Leiodidae				Beetles – Round fungus beetles
Alpine Carrion Scavenger	*Catops alpinus*	Undetermined		
Cold-wary Carrion Scavenger	*Catops alsiosus*	Undetermined		
Basilar Carrion Scavenger	*Catops basilaris*	Undetermined		
Needy Carrion Scavenger	*Catops egenus*	Undetermined		
Lurid-winged Carrion Scavenger	*Catops luridipennis*	Undetermined		
Magricolle Fungus Scavenger	*Colon magnicolle*	Undetermined		
Oblong Fungus Scavenger	*Colon oblongum*	Undetermined		
Polished Fungus Scavenger	*Colon politum*	Undetermined		
Striated Round Fungus Beetle	*Hydnobius substriatus*	Undetermined		
Close Round Fungus Beetle	*Leiodes assimilis*	Undetermined		
Merkelian Round Fungus Beetle	*Leiodes merkeliana*	Undetermined		
Striated Round Fungus Beetle	*Leiodes punctostriata*	Undetermined		
Polkadot Round Fungus Beetle	*Leiodes punctulata*	Undetermined		
Red-legged Round Fungus Beetle	*Leiodes rufipes*	Undetermined		
Triepke's Round Fungus Beetle	*Leiodes triepkei*	Presence Expected		
Valid Round Fungus Beetle	*Leiodes valida*	Undetermined		
Beaver Nest Scavenger	*Leptinillus validus*	Undetermined		
Smoky Cholevine Scavenger	*Sciodrepoides terminans*	Undetermined		

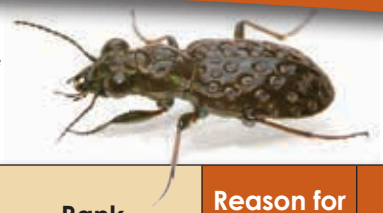
Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Blunt Sogda Scavenger	*Sogda obtusa*	Undetermined		
Coleoptera – Lucanidae				Beetles – Stag beetles
Aspen Stag Beetle	*Platycerus depressus*	Undetermined		
Marginal Stag Beetle	*Platycerus marginalis*	Undetermined		
Coleoptera – Lycidae				Beetles – Net-winged beetles
Golden Net-winged Beetle	*Dictyoptera aurora*	Undetermined		
Coleoptera – Megalopodidae				Beetles – Magalopodid leaf beetles
Strange Megalopodid Leaf Beetle	*Zeugophora abnormis*	Undetermined		
Black Megalopodid Leaf Beetle	*Zeugophora atra*	Undetermined		
Poplar Blackmine Beetle	*Zeugophora scutellaris*	Alien		
Variable Megalopodid Leaf Beetle	*Zeugophora varians*	Undetermined		
Coleoptera – Melandryidae				Beetles – False darkling beetles
Knife-lke False Darkling Beetle	*Orchesia cultriformis*	Undetermined		
Collared False Darkling Beetle	*Phryganophilus collaris*	Undetermined		
Striated False Darkling Beetle	*Serropalpus substriatus*	Undetermined		
Coleoptera – Meloidae				Beetles – Blister beetles
Impressive Meloine Beetle	*Meloe impressus*	Undetermined		
Black Meloine Beetle	*Meloe niger*	Undetermined		
Stansbury's Blister Beetle	*Tricrania stansburii*	Undetermined		
Coleoptera – Melyridae				Beetles – Soft-winged flower beetles
Hairy Soft-winged Flower Beetle	*Collops hirtellus*	Undetermined		
Banded Soft-winged Flower Beetle	*Collops vittatus*	Undetermined		
Hudsonian Dasytine	*Hoppingiana hudsonica*	Undetermined		
Coleoptera – Micropeplidae				Beetles – Micropeplid rove beetle
Tessera Micropeplid Beetle	*Arrhenopeplus tesserula*	Undetermined		
Coleoptera – Mordellidae				Beetles – Tumbling flower beetles
Tumbling Mourner Flower Beetle	*Mordella atrata*	Undetermined		
Tumbling Ragdoll Flower Beetle	*Mordella marginata*	Undetermined		
Tumbling Nun Flower Beetle	*Mordella melaena*	Undetermined		
Tumbling Little-maid Flower Beetle	*Mordellina ancilla*	Undetermined		
Tumbling Orphan Flower Beetle	*Mordellistena marginalis*	Undetermined		
Tumbling Lawyer Flower Beetle	*Mordellistena unicolor*	Undetermined		
Tumbling Cloak Flower Beetle	*Mordellochroa scapularis*	Undetermined		
Coleoptera – Nitidulidae				Beetles – Sap beetles
Nettle Pollen Beetle	*Brachypterus urticae*	Alien		
Lined Sap Beetle	*Epuraea linearis*	Undetermined		
Truncated Sap Beetle	*Epuraea truncatella*	Undetermined		
Black Sap Beetle	*Fabogethes nigrescens*	Undetermined		
Siepmann's Sap Beetle	*Glischrochilus siepmanni*	Undetermined		
Two-dots Sap Beetle	*Nitidula bipunctata*	Undetermined		
Red-leg Sap Beetle	*Nitidula rufipes*	Alien		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Ziczac Sap Beetle	*Nitidula ziczac*	Undetermined		
Pitted Golden Sap Beetle	*Pocadius helvolus*	Undetermined		
Coleoptera – Orsodacnidae				Beetles – Ravenous leaf beetles
Silver-backed Orsodacnid Beetle	*Orsodacne atra*	Undetermined		
Coleoptera – Ptinidae				Beetles – Spider beetles
Cub Buffball Beetle	*Caenocara scymnoides*	Undetermined		
Confused Xyletine Beetle	*Xyletinus confusus*	Undetermined		
Coleoptera – Pyrochroidae				Beetles – Fire-coloured beetles
Flaming-pillow Beetle	*Schizotus cervicalis*	Undetermined		
Coleoptera – Pythidae				Beetles – Dead log beetles
American Pythid Beetle	*Pytho americanus*	Undetermined		
Black Pythid Beetle	*Pytho niger*	Undetermined		
Seidlitz's Pythid Beetle	*Pytho seidlitzi*	Undetermined		
Coleoptera – Salpingidae				Beetles – Narrow-waisted bark beetle
Greenish Narrow-waisted Bark Beetle	*Sphaeriestes virescens*	Undetermined		
Coleoptera – Scarabaeidae				Beetles – Scarab beetles
Beachrover Scarab Beetle	*Aegialia lacustris*	Secure		
Edged Scarab Beetle	*Aegialia terminalis*	Undetermined		
Alberta Dung Beetle	*Agoliinus albertanus*	Undetermined		
Leopard Dung Beetle	*Agoliinus leopardus*	Undetermined		
Europeen Aphodiine Dung Beetle	*Aphodius fimetarius*	Alien		
Northern Litter Beetle	*Diapterna hyperborea*	Secure		
Pond Litter Beetle	*Diapterna omissa*	Secure		
Rich Litter Beetle	*Diapterna pinguis*	Presence Expected		
Green Rose Chafer	*Dichelonyx backii*	Undetermined		
Bronzed Chafer	*Dichelonyx subvittata*	Undetermined		
Burrow Dung Beetle	*Melinopterus consentaneus*	Undetermined		
Forest-ogre June Beetle	*Phyllophaga anxia*	Undetermined		
Mouse Dung Beetle	*Planolinoides borealis*	Secure		
Shadow Dung Beetle	*Planolinus tenellus*	Undetermined		
Full June Beetle	*Serica curvata*	Undetermined		
Mid-June Beetle	*Serica intermixta*	Undetermined		
Harvest June Beetle	*Serica sericea*	Undetermined		
Bee-mimic Beetle	*Trichiotinus assimilis*	Secure		
Coleoptera – Scirtidae				Beetles – Marsh beetles
Little Marsh Beetle	*Cyphon pusillus*	Undetermined		
Brown Marsh Beetle	*Cyphon variabilis*	Undetermined		
Coleoptera – Silphidae				Beetles – Carrion beetles
Spinach Carrion Beetle	*Aclypea bituberosa*	Undetermined		
Beet Carrion Beetle	*Aclypea opaca*	Undetermined		
Parkland Carrion Beetle	*Heterosilpha ramosa*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Boreal Burying Beetle	*Nicrophorus defodiens*	Undetermined		
Banded Burying Beetle	*Nicrophorus investigator*	Undetermined		
Bog Burying Beetle	*Nicrophorus vespilloides*	Secure		
Lapland Carrion Beetle	*Thanatophilus lapponicus*	Secure		
Ice Carrion Beetle	*Thanatophilus sagax*	Secure		
Cold-shore Carrion Beetle	*Thanatophilus trituberculatus*	Secure		
Coleoptera – Silvanidae				Beetles – Silvanid flat bark beetles
Peaceful Silvan Beetle	*Cathartosilvanus imbellis*	Undetermined		
Coleoptera – Staphylinidae				Beetles – Rove beetles
Square Acidote Beetle	*Acidota quadrata*	Undetermined		
Stooping Rove Beetle	*Acylophorus pronus*	Undetermined		
Assiniboine Aleochara Beetle	*Aleochara assiniboin*	Undetermined		
Twice-marked Aleochara Beetle	*Aleochara bimaculata*	Undetermined		
Chestnut-winged Aleochara Beetle	*Aleochara castaneipennis*	Undetermined		
Slender-horned Aleochara Beetle	*Aleochara gracilicornis*	Undetermined		
Sekana's Aleochara Beetle	*Aleochara sekanai*	Undetermined		
Tahoe Aleochara Beetle	*Aleochara tahoensis*	Undetermined		
Little-cousin Rove Beetle	*Anotylus sobrinus*	Undetermined		
Altai Athetine Beetle	*Atheta altaica*	Undetermined		
Granulated Athetine Beetle	*Atheta graminicola*	Secure		
Munster's Athetine Beetle	*Atheta munsteri*	Undetermined		
Beringian Athetine Beetle	*Atheta nearctica*	Undetermined		
Smetana's Athetine Beetle	*Atheta smetanai*	Undetermined		
Arctic Philonthine Beetle	*Bisnius hyperboreus*	Undetermined		
Siegwald's Philonthine Beetle	*Bisnius siegwaldii*	Undetermined		
Ringed Borrow Rove Beetle	*Bledius annularis*	Undetermined		
Northern Borrow Rove Beetle	*Bledius aquilonarius*	Undetermined		
Confusing Borrow Rove Beetle	*Bledius confusus*	Undetermined		
Abundant Borrow Rove Beetle	*Bledius gravidus*	Undetermined		

Sand Willow Flea Beetle
Photo Credit: I Katz

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Stitched Borrow Rove Beetle	*Bledius suturalis*	Undetermined		
Beach Borrow Rove Beetle	*Bledius tarandus*	Undetermined		
Torrent Borrow Rove Beetle	*Bledius turgidus*	Secure		
Robust Borrow Rove Beetle	*Bledius viriosus*	Secure		
Belted Rove Beetle	*Bolitobius cingulatus*	Alien		
Husky Boreal-athetine Beetle	*Boreophilia fusca*	Undetermined		
Icy Boreal-athetine Beetle	*Boreophilia gelida*	Undetermined		
Northern Boreal-athetine Beetle	*Boreophilia hyperborea*	Undetermined		
Icelandic Boreal-athetine Beetle	*Boreophilia islandica*	Undetermined		
Beringian Boreal-athetine Beetle	*Boreophilia subplana*	Undetermined		
Northern Boreostiba Beetle	*Boreostiba frigida*	Presence Expected		
Rounded Boreostiba Beetle	*Boreostiba parvipennis*	Undetermined		
Siberian Boreostiba Beetle	*Boreostiba sibirica*	Undetermined		
Helena Brachyusa Rove Beetle	*Brachyusa helenae*	Undetermined		
Arctic Bryophacis Beetle	*Bryophacis arcticus*	Undetermined		
Smetana's Bryophacis Beetle	*Bryophacis smetanai*	Undetermined		
Ventrose Crab-like Rove Beetle	*Coproporus ventriculus*	Undetermined		
Hairy Rove Beetle	*Creophilus maxillosus*	Alien		
Eccentric Ant-loving Beetle	*Decarthron abnorme*	Undetermined		
Prosper Devia Beetle	*Devia prospera*	Undetermined		
Iron-Grey Dianous Beetle	*Dianous chalybaeus*	Undetermined		
Rough-bellied Athetine Beetle	*Dochmonota rudiventris*	Undetermined		
Long Ocellate Rove Beetle	*Dropephylla longula*	Undetermined		
Dwarf Rove Beetle	*Erichsonius nanus*	Undetermined		
American Litter Rove Beetle	*Euaesthetus americanus*	Undetermined		
Smoothbum Rove Beetle	*Euaesthetus laeviusculus*	Undetermined		
Pribilof Rove Beetle	*Eucnecosum brachypterum*	Secure		
Brownish Rove Beetle	*Eucnecosum brunnescens*	Secure		
Delicate Rove Beetle	*Eucnecosum tenue*	Secure		
Malkin's Small-winged Gabrius Beetle	*Gabrius brevipennis*	Undetermined		
Black-winged Gabius Beetle	*Gabrius picipennis*	Secure		
Straight Ocellate Rove Beetle	*Geodromicus plagiatus*	Undetermined		
Caribou Sickle Beetle	*Gnathusa caribou*	Undetermined		
Ashe's Tundra Rove Beetle	*Gnypeta ashei*	Undetermined		
Brinck's Tundra Rove Beetle	*Gnypeta brincki*	Undetermined		
Cerulean Rove Beetle	*Gnypeta caerula*	Undetermined		
Charcoal Rove Beetle	*Gnypeta carbonaria*	Undetermined		
Toothed Rove Beetle	*Gnypeta dentata*	Undetermined		
Sellman's Rove Beetle	*Gnypeta sellmani*	Undetermined		
Dark Gymnusa Beetle	*Gymnusa atra*	Undetermined		
Campbell's Gymnusa Beetle	*Gymnusa campbelli*	Undetermined		



Clairville's Ground Beetle
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Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Konopack's Gymnusa Beetle	*Gymnusa konopackii*	Undetermined		
Variable Gymnusa Beetle	*Gymnusa pseudovariegata*	Secure		
Smetana's Gymnusa Beetle	*Gymnusa smetanai*	Undetermined		
Minor Rove Beetle	*Heterothops minor*	Undetermined		
Flood-drift Rove Beetle	*Heterothops sordidus*	Undetermined		
Nordenskiôld's Ocellate Rove Beetle	*Holoboreaphilus nordenskioldi*	Secure		
Ocher Hylota Beetle	*Hylota ochracea*	Undetermined		
Fringed Crab-like Rove Beetle	*Ischnosoma fimbriatum*	Secure		
Splendid Crab-like Rove Beetle	*Ischnosoma splendidum*	Secure		
Vancouver's Rove Beetle	*Lathrobium washingtoni*	Undetermined		
Colorado Rove Beetle	*Lobrathium coloradense*	Undetermined		
Fungi-loving Lordithon Rove Beetle	*Lordithon fungicola*	Undetermined		
Bolete Lordithon Rove Beetle	*Lordithon poecilus*	Undetermined		
Breastplated Crab-like Rove Beetle	*Lordithon thoracicus*	Undetermined		
Franclemont's Athetine Beetle	*Lypoglossa franclemonti*	Undetermined		
Squarenecked Rove Beetle	*Megarthrus angulicollis*	Undetermined		
River-rafting Rove Beetle	*Megarthrus smetanai*	Undetermined		
Polar Ocellate Rove Beetle	*Micralymma brevilingue*	Undetermined		
Northern Mocyta Beetle	*Mocyta amblystegii*	Undetermined		
Black Crab-like Rove Beetle	*Mycetoporus nigrans*	Undetermined		
Rough Crab-like Rove Beetle	*Mycetoporus rugosus*	Secure		
Smetana's Crab-like Rove Beetle	*Mycetoporus smetanai*	Undetermined		
Audacious River Rove Beetle	*Myllaena audax*	Undetermined		
Sleepless River Rove Beetle	*Myllaena insomnis*	Undetermined		
Hooked Rove Beetle	*Neohypnus hamatus*	Undetermined		
Shining Crab-like Rove Beetle	*Nitidotachinus tachyporoides*	Undetermined		
Kephalos Rove-hunter Beetle	*Nudobius cephalus*	Undetermined		
Bighead Bark Rove Beetle	*Olisthaerus megacephalus*	Undetermined		
Striped Bark Rove Beetle	*Olisthaerus substriatus*	Undetermined		
Boreal Ocellate Rove Beetle	*Olophrum boreale*	Secure		
Shrub-loving Ocellate Rove Beetle	*Olophrum consimile*	Undetermined		
Tundra-dwelling Ocellate Rove Beetle	*Olophrum latum*	Secure		
Chubby Ocellate Rove Beetle	*Olophrum rotundicolle*	Secure		
Foraminous Rove Beetle	*Omalium foraminosum*	Undetermined		
Gold-brown Rove Beetle	*Ontholestes cingulatus*	Undetermined		
Canadian Oxypoda Beetle	*Oxypoda canadensis*	Undetermined		
Cool Oxypoda Beetle	*Oxypoda frigida*	Undetermined		
Wintery Oxypoda Beetle	*Oxypoda hiemalis*	Undetermined		
Unfriendly Oxypoda Beetle	*Oxypoda inimica*	Undetermined		
Lakeside Oxypoda Beetle	*Oxypoda lacustris*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Shining Oxypoda Beetle	*Oxypoda lucidula*	Undetermined		
Volker's Oxypoda Beetle	*Oxypoda volkeri*	Undetermined		
Western Cross-toothed Rove Beetle	*Oxyporus occipitalis*	Undetermined		
Paneled Spiny-legged Rove Beetle	*Oxytelus laqueatus*	Alien		
Shore Rove Beetle	*Paederus littorarius*	Undetermined		
Dempster Rove Beetle	*Parocalea nearctica*	Undetermined		
Baikal-like Rove Beetle	*Parocalea pseudobaicalica*	Undetermined		
Leech's Shore Athetine Beetle	*Philhygra leechi*	Undetermined		
Imiq Shore Athetine Beetle	*Philhygra malleoides*	Undetermined		
Polar Shore Athetine Beetle	*Philhygra pseudopolaris*	Undetermined		
Kuuk Shore Athetine Beetle	*Philhygra ripicoloides*	Undetermined		
Beaked Shore Atheline Beetle	*Philhygra rostrifera*	Undetermined		
Golden Philonthine Beetle	*Philonthus aurulentus*	Undetermined		
Boreal Philontine Beetle	*Philonthus boreas*	Secure		
Coulee Philonthine Beetle	*Philonthus couleensis*	Undetermined		
Double Philonthine Beetle	*Philonthus duplicatus*	Secure		
Dark Philonthine Beetle	*Philonthus furvus*	Undetermined		
Hudsonian Philonthine Beetle	*Philonthus hudsonicus*	Undetermined		
Arctic Philonthine Beetle	*Philonthus hyperboreus*	Undetermined		
Kaszab's Philonthine Beetle	*Philonthus kaszabi*	Secure		
Leechen Philonthine Beetle	*Philonthus leechensis*	Undetermined		
Lindroth's Philonthine Beetle	*Philonthus lindrothi*	Undetermined		
Lomatus Philonthine Beetle	*Philonthus lomatus*	Undetermined		
Western Philonthine Beetle	*Philonthus occidentalis*	Secure		
Opaque-winged Philonthine Beetle	*Philonthus opacipennis*	Undetermined		
Polished Philonthine Beetle	*Philonthus politus*	Alien		
Lightgreen Philonthine Beetle	*Philonthus subvirescens*	Secure		
Arctic Ocellate Rove Beetle	*Phloeopora arctica*	Undetermined		
Lapland Ocellate Rove Beetle	*Phloeostiba lapponica*	Undetermined		
Tacoma Tunnel Rove Beetle	*Placusa tacomae*	Undetermined		
Rambling Tunnel Rove Beetle	*Placusa vaga*	Undetermined		
Open Ocellate Rove Beetle	*Porrhodites fenestralis*	Secure		
Brown-winged Quedius Beetle	*Quedius brunnipennis*	Secure		
Criddle's Quedius Beetle	*Quedius criddlei*	Undetermined		
Fellman's Quedius Beetle	*Quedius fellmani*	Undetermined		
Cold-loving Quedius Beetle	*Quedius frigidus*	Undetermined		
Labrador Quedius Beetle	*Quedius labradorensis*	Undetermined		
Bark-stalker Quedius Beetle	*Quedius plagiatus*	Undetermined		
Rustic Quedius Beetle	*Quedius rusticus*	Undetermined		
Simulator Quedius Beetle	*Quedius simulator*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Bramble Quedius Beetle	*Quedius sublimbatus*	Secure		
Casey's Quedius Beetle	*Quedius uteanus*	Undetermined		
Bumpy Philonthine Beetle	*Rabigus laxellus*	Undetermined		
Lacustrine Philonthine Beetle	*Rabigus laxellus*	Undetermined		
Barred Rove Beetle	*Rybaxis transversa*	Undetermined		
Castan Shining Fungus Beetle	*Scaphium castanipes*	Undetermined		
Blatchley's Atherine Beetle	*Schistoglossa blatchleyi*	Undetermined		
Unskilled Water Skater	*Stenus advena*	Undetermined		
Aegean Water Skater	*Stenus ageus*	Undetermined		
Overtaking Water Skater	*Stenus assequens*	Undetermined		
Austin's Water Skater	*Stenus austini*	Undetermined		
Doubly-lined Water Skater	*Stenus bilineatus*	Undetermined		
Brivio's Water Skater	*Stenus brivioi*	Undetermined		
Groovy Water Skater	*Stenus canaliculatus*	Undetermined		
Marked Water Skater	*Stenus comma*	Undetermined		
Leathery Water Skater	*Stenus coriaceus*	Undetermined		
Short Water Skater	*Stenus curtus*	Undetermined		
Cunning Water Skater	*Stenus dolosus*	Undetermined		
Needy Water Skate	*Stenus egenulus*	Undetermined		
Fasciculated Water Skater	*Stenus fasciculatus*	Undetermined		
Taiga Water Skater	*Stenus hyperboreus*	Undetermined		
Unbounded Water Skater	*Stenus immarginatus*	Undetermined		
Shoving Water Skater	*Stenus intrusus*	Undetermined		
Jacuticus Water Skater	*Stenus jacuticus*	Undetermined		
Juno Water Skater	*Stenus juno*	Undetermined		
Kryzhanovski's Water Skater	*Stenus kryzhanovskii*	Undetermined		
Slipping Water Skater	*Stenus labilis*	Undetermined		
Wet Water Skater	*Stenus laccophilus*	Undetermined		
Large-winged Water Skater	*Stenus latipennis*	Undetermined		
Mammops Water Skater	*Stenus mammops*	Undetermined		
Black Water Skater	*Stenus melanarius*	Undetermined		
Clown Water Skater	*Stenus morio*	Undetermined		
Snow-loving Water Skater	*Stenus niveus*	Undetermined		
Western Water Skater	*Stenus occidentalis*	Undetermined		
Twisted Water Skater	*Stenus plicipennis*	Undetermined		
Mighty Water Skater	*Stenus pollens*	Undetermined		
Hairy Water Skater	*Stenus pubescens*	Undetermined		
Dwarf Water Skater	*Stenus pumilio*	Undetermined		
Quebec Water Skater	*Stenus quebecensis*	Undetermined		
Concealed Water Skater	*Stenus reconditus*	Undetermined		
Ross's Water Skater	*Stenus rossi*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Mangy Water Skater	*Stenus scabiosus*	Undetermined		
Rocky Water Skater	*Stenus scrupeus*	Undetermined		
Scratched Water Skater	*Stenus semicolon*	Undetermined		
Siberian Water Skater	*Stenus sibiricus*	Undetermined		
Poor Water Skater	*Stenus sordidus*	Undetermined		
Styx Water Skater	*Stenus stygicus*	Undetermined		
Shy Water Skater	*Stenus umbratilis*	Undetermined		
Lovely Water Skater	*Stenus vinnulus*	Undetermined		
Beaufort Crab-like Rove Beetle	*Tachinus brevipennis*	Undetermined		
Long Crab-like Rove Beetle	*Tachinus elongatus*	Undetermined		
Cool Crab-like Rove Beetle	*Tachinus frigidus*	Undetermined		
Beringian Crab-like Rove Beetle	*Tachinus jacuticus*	Undetermined		
Quebec Crab-like Rove Beetle	*Tachinus quebecensis*	Undetermined		
Flood Crab-like Rove Beetle	*Tachyporus abdominalis*	Secure		
Boreal Crab-like Rove Beetle	*Tachyporus borealis*	Secure		
Canada Crab-like Rove Beetle	*Tachyporus canadensis*	Presence Expected		
Flawless Crab-like Rove Beetle	*Tachyporus flavipennis*	Undetermined		
Inornate Crab-like Rove Beetle	*Tachyporus inornatus*	Undetermined		
Jocose Crab-like Rove Beetle	*Tachyporus jocosus*	Undetermined		
Tundra Crab-like Rove Beetle	*Tachyporus nimbicola*	Presence Expected		
Elegant Crab-like Rove Beetle	*Tachyporus nitidulus*	Secure		
Hummock Crab-like Rove Beetle	*Tachyporus rulomus*	Secure		
American Rove Beetle	*Tachyusa americanoides*	Undetermined		
Pitted Wetland Rove Beetle	*Tetartopeus captiosus*	Undetermined		
Boreal Wetland Rove Beetle	*Tetartopeus furvulus*	Undetermined		
Black Wetland Rove Beetle	*Tetartopeus niger*	Undetermined		

Eyespot Lady Beetle
Photo Credit: D Johnson

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Reddish Ant-loving Beetle	*Tyrus semiruber*	Undetermined		
Coleoptera – Stenotrachelidae				Beetles – False longhorn beetles
Canadian False Long-horned Beetle	*Anelpistus canadensis*	Undetermined		
Brassy False Long-horned Beetle	*Stenotrachelus aeneus*	Undetermined		
Coleoptera – Tenebrionidae				Beetles – Darkling beetles
Overlooked Darkling Beetle	*Corticeus praetermissus*	Undetermined		
Conk-loving Darkling Beetle	*Eleates depressus*	Undetermined		
Browish Darkling Beetle	*Paratenetus fuscus*	Undetermined		
Variegated Darkling Beetle	*Phaleromela variegata*	Undetermined		
Roughened Darkling Beetle	*Upis ceramboides*	Secure		
Coleoptera – Throscidae				Beetles – Throscid beetles
Fake Californian Throscid Beetle	*Trixagus mendax*	Undetermined		
Silken Throscid Beetle	*Trixagus sericeus*	Undetermined		
Coleoptera – Trachypachidae				Beetles – Trachypachid beetles
Unarmed False Ground Beetle	*Trachypachus inermis*	Undetermined		
Coleoptera – Trogidae				Beetles – Lumpy hide Beetles
Sonor Lumpy Hide Beetle	*Trox sonorae*	Undetermined		
Coleoptera – Trogossitidae				Beetles – Bark-gnawing beetles
Rough Bark-gnawing Beetle	*Calitys scabra*	Undetermined		
Brotherly Bark-gnawing Beetle	*Peltis fraterna*	Undetermined		
Northern Bark-gnawing Beetle	*Peltis septentrionalis*	Undetermined		
Pine Trogossitid Beetle	*Temnoscheila chlorodia*	Undetermined		
Twisted Bark-living Beetle	*Tenebroides corticalis*	Undetermined		
Coleoptera – Zopheridae				Beetles – Ironglad beetles
Boreal Ironclad Beetle	*Lasconotus borealis*	Undetermined		
Intricate Ironclad Beetle	*Lasconotus intricatus*	Undetermined		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. COSEWIC Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[c] It is unclear if populations of Pale Tortoise Beetle have been introduced, or are native to the NWT.

[d] *Hippodamia convergens* is imported for aphid control and released in some greenhouses in the NWT. It is not known if the species is present and has viable populations in the wild and should be ranked as Alien.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Clairville's Elaphrus Beetle
Photo Credit: H Goulet

6.12 Bees

Confusing Bumble Bee
Photo Credit: H Selzler

As the major group of animal pollinators, bees are considered keystone organisms in most terrestrial ecosystems, including highly modified agroecosystems, as they facilitate plant reproduction. Canada is home to over 800 bee species, with most species found in the southern part of the country. However, many bee species extend into northern parts of the country, with over 100 species recorded north of 60°, with all families excluding Melittidae recorded. The most familiar group in the North, the bumble bees are very common and conspicuous members of the NWT bee fauna.

The diversity of bees is not restricted to the number of species, as bees also vary considerably in their biology. Most bee species are solitary, meaning that each female works alone to collect pollen and nectar to provision her nest, and once she lays each egg, there is no further contact between mother and offspring. Solitary bees are usually only active for a short period of time, perhaps 3-6 weeks, the timing often corresponding to the bloom period of their preferred plants. Some species have specialized relationships with a narrow range of host plants, such as willow (*Salix* sp.). Other solitary bees are pollen generalists that visit flowers of a wide range of plant species.

In contrast, some bees, including most bumble bees are social for part of their life cycle – although they start each year as a mated solitary queen, as the summer progresses workers are produced, after which time the queen becomes a full time egg layer. Bumble bee colonies are thus active from the early spring until the autumn, and colony growth depends on floral resources being available throughout the season.

Another group of bees are called cuckoo bees. The females sneak into the nests of other bees, and lay their eggs on the food provisions collected by the host species.

At present, not much is known about the status of most of the NWT's bees, largely because sampling events are relatively rare compared to most parts of the country, and much of the territory has not been sampled at all.

Three bumble bee species occurring in the NWT have been assessed by COSEWIC, and are ranked as at risk (gypsy cuckoo bumble bee, *Bombus bohemicus*) or sensitive (western bumble bee, *B. occidentalis*, and yellow-banded bumble bee, *B. terricola*), the latter two serving as hosts for the former, which is a parasitic species.

The conservation of Canada's pollinators is a vital concern. At present it appears that the bee fauna of the NWT is probably of lower concern than further south, largely due to low pressures from the typical threats to bees found in southern Canada – habitat loss, pesticide use, and for bumble bees, increased pressure from pathogens. Though the western bumble bee and yellow-banded bumble bee populations in the north may have relatively high pathogen loads, the additive pressures of land use practices seen in the southern parts of the country seem to be absent for most of the NWT.

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Interest in bees has increased in the NWT over the past five years. We have seen more inventories by enthusiastic insect collectors. Visit our website on bees to learn more about what all NWT residents can do to help bees thrive in the North. Share your knowledge on your observation of changes in bee populations with us at NWTbugs@gov.nt.ca. Link to http://www.enr.gov.nt.ca/programs/insects-and-spiders/bees

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List 12. **Bees**

There are 108 species of bees confirmed present in the NWT, of which one species is alien. One species is of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Sheffield 2015.

European Honey Bee Photo Credit: D Jacquard

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Arthropoda – Insecta				**Arthropods – Insects**
Hymenoptera – Andrenidae				Bee-like insects – Miner bees
Icy Miner Bee	*Andrena algida*	Secure		
Bearded Miner Bee	*Andrena barbilabris*	Undetermined		
Canada Miner Bee	*Andrena canadensis*	Undetermined		
Rustyback Miner Bee	*Andrena clarkella*	Undetermined		
British Columbia Miner Bee	*Andrena columbiana*	Undetermined		
Cold Miner Bee	*Andrena frigida*	Undetermined		
Hippotes Miner Bee	*Andrena hippotes*	Undetermined		
Willow Miner Bee	*Andrena mariae*	Undetermined		
Milwaukee Miner Bee	*Andrena milwaukeensis*	Undetermined		
Miranda Miner Bee	*Andrena miranda*	Undetermined		
Black-haired Miner Bee	*Andrena nigrihirta*	Undetermined		
Protruding Miner Bee	*Andrena persimulata*	Undetermined		
Purple Miner Bee	*Andrena prunorum*	Undetermined		
Regular Miner Bee	*Andrena regularis*	Undetermined		
Red-faced Miner Bee	*Andrena rufosignata*	Secure		
Sigmund's Miner Bee	*Andrena sigmundi*	Undetermined		
Parsnip Miner Bee	*Andrena thaspii*	Secure		
Wllesley Miner Bee	*Andrena wellesleyana*	Undetermined		
Inept Miner Bee	*Panurginus ineptus*	Presence Expected		
Hymenoptera – Apidae				Bee-like insects – Bumble and honey bees
Bumblebee-like Flower Bee	*Anthophora bomboides*	Secure		
Red-tailed Flower Bee	*Anthophora terminalis*	Secure		
European Honey Bee	*Apis mellifera*	Alien		
Mountain Bumble Bee	*Bombus balteatus*	Secure		
Double Bumble Bee	*Bombus bifarius*	Undetermined		
Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	At Risk	A, ⓘ[5]	Endangered – 2014
Northern Amber Bumble Bee	*Bombus borealis*	Undetermined		
Cryptic Bumble Bee	*Bombus cryptarum*	Secure		
Yellow Cuckoo Bumble Bee	*Bombus flavidus*	Undetermined		
Yellow-fronted Bumble Bee	*Bombus flavifrons*	Secure	ⓘ[5]	
Winter Bumble Bee	*Bombus frigidus*	Secure	ⓘ[5]	
Subarctic Bumble Bee	*Bombus hyperboreus*	Undetermined		
Indiscriminate Cuckoo Bumble Bee	*Bombus insularis*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Heath Bumble Bee	*Bombus jonellus*	Secure	ⓘ[5]	
Orange-rumped Bumble Bee	*Bombus melanopygus*	Undetermined		
Brown-tailed Bumble Bee	*Bombus mixtus*	Secure	ⓘ[5]	
American Boreal Bumble Bee	*Bombus neoboreus*	Secure	ⓘ[5]	
Western Bumble Bee	*Bombus occidentalis*	Sensitive	A, ⓘ[5]	Special Concern – 2014
Confusing Bumble Bee	*Bombus perplexus*	Undetermined		
Northern Bumble Bee	*Bombus polaris*	Secure		
Sanderson's Bumble Bee	*Bombus sandersoni*	Undetermined		
Suckley's Cuckoo Bumble Bee	*Bombus suckleyi*	Undetermined		G1G3 – 2015
Red-tailed Bumble Bee	*Bombus sylvicola*	Secure		
Tricoloured Bumble Bee	*Bombus ternarius*	Undetermined	#	
Yellow-banded Bumble Bee	*Bombus terricola*	Sensitive	A, ⓘ[5]	Special Concern – 2015
Miniature Cuckoo Nomad Bee	*Epeolus minimus*	Undetermined		
Eagle Cuckoo Nomad Bee	*Nomada aquilarum*	Undetermined		
Pretty Cuckoo Nomad Bee	*Nomada bella*	Undetermined		
Cuneate Cuckoo Nomad Bee	*Nomada cuneata*	Undetermined		
Lehigh Gap Cuckoo Nomad Bee	*Nomada lehighensis*	Undetermined		
True Cuckoo Nomad Bee	*Nomada valida*	Undetermined		
Hymenoptera – Colletidae				Bee-like insects – Plasterer bees
Partner Plasterer Bee	*Colletes consors*	Undetermined		
Translucent Plasterer Bee	*Colletes hyalinus*	Undetermined		
Shiny Plasterer Bee	*Colletes impunctatus*	Undetermined		
Black-faced Plasterer Bee	*Colletes nigrifrons*	Undetermined		
Scorpionweed Plasterer Bee	*Colletes phaceliae*	Undetermined		
Ringed Yellow-faced Bee	*Hylaeus annulatus*	Secure		
Basal Yellow-faced Bee	*Hylaeus basalis*	Undetermined		
Barred Yellow-faced Bee	*Hylaeus verticalis*	Presence Expected		

Red-tailed Bumble Bee Photo Credit: G Vizniowski

Heath Bumble Bee Photo Credit: M Jackson

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Hymenoptera – Halictidae				Bee-like insects – Sweat bees
Cinquefoil Sweat Bee	*Dufourea harveyi*	Undetermined		
Polymorphic Sweat Bee	*Halictus rubicundus*	Undetermined		
Comma Sweat Bee	*Halictus virgatellus*	Undetermined		
Athabasca Sweat Bee	*Lasioglossum athabascense*	Undetermined		
Boreal Sweat Bee	*Lasioglossum boreale*	Undetermined		
Hardy Sweat Bee	*Lasioglossum comagenense*	Undetermined		
Misbehaving Sweat Bee	*Lasioglossum inconditum*	Undetermined		
Very Smooth Sweat Bee	*Lasioglossum laevissimum*	Undetermined		
Nova Scotian Sweat Bee	*Lasioglossum novascotiae*	Undetermined		
Peacock Sweat Bee	*Lasioglossum pavoninum*	Undetermined		
Flattened Sweat Bee	*Lasioglossum planatum*	Undetermined		
Dust Sweat Bee	*Lasioglossum pulveris*	Undetermined		
Quebec Sweat Bee	*Lasioglossum quebecense*	Undetermined		
Blueberry Sweat Bee	*Lasioglossum seillean*	Undetermined		
Alpine Sweat Bee	*Lasioglossum tenax*	Undetermined		
Timothy's Sweat Bee	*Lasioglossum timothyi*	Presence Expected		
Black-tipped Cuckoo Sweat Bee	*Sphecodes prosphorus*	Undetermined		
Shiny-faced Cuckoo Sweat Bee	*Sphecodes solonis*	Undetermined		
Hymenoptera – Megachilidae				Bee-like insects – Leafcutter and mason bees
Saw-faced Carder Bee	*Anthidium clypeodentatum*	Undetermined		
Pale-bellied Carder Bee	*Anthidium palliventre*	Undetermined		
Scurfpea Carder Bee	*Anthidium tenuiflorae*	Undetermined		
Banks' Cuckoo Leafcutter Bee	*Coelioxys banksi*	Undetermined		
Funeral Cuckoo Leafcutter Bee	*Coelioxys funeraria*	Secure		
Sad Cuckoo Leafcutter Bee	*Coelioxys moesta*	Undetermined		
Red-legged Cuckoo Leafcutter Bee	*Coelioxys rufitarsis*	Undetermined		
Comrade Cuckoo Leafcutter Bee	*Coelioxys sodalis*	Undetermined		
White-face Summer Mason Bee	*Hoplitis albifrons*	Secure		
Bright Green Summer Mason Bee	*Hoplitis fulgida*	Presence Expected		
Unicorn Summer Mason Bee	*Hoplitis robusta*	Undetermined		
Wide-horned Summer Mason Bee	*Hoplitis spoliata*	Undetermined		
Common Leafcutter Bee	*Megachile centuncularis*	Undetermined		
Circumpolar Leafcutter Bee	*Megachile circumcincta*	Secure		
Polar Leafcutter Bee	*Megachile frigida*	Secure		
Square-jawed Leafcutter Bee	*Megachile gemula*	Undetermined		
Unarmed Leafcutter Bee	*Megachile inermis*	Undetermined		
Lapland Leafcutter Bee	*Megachile lapponica*	Secure		
Black-bellied Leafcutter Bee	*Megachile melanophaea*	Secure		
Hirsute Leafcutter Bee	*Megachile perihirta*	Secure		
Feisty Leafcutter Bee	*Megachile pugnata*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	COSEWIC Status in Canada/Global Conservation Concern[b]
Relative Leafcutter Bee	*Megachile relativa*	Secure		
Northern Mason Bee	*Osmia aquilonaria*	Undetermined		
Small Black-bellied Mason Bee	*Osmia atriventris*	Undetermined		
Bighead Mason Bee	*Osmia bucephala*	Undetermined		
Unarmed Mason Bee	*Osmia inermis*	Undetermined		
Marine Mason Bee	*Osmia maritima*	Undetermined		
Nearctic Mason Bee	*Osmia nearctica*	Undetermined		
Large Black-bellied Mason Bee	*Osmia nigriventris*	Undetermined		
Friendly Mason Bee	*Osmia proxima*	Undetermined		
Similar Mason Bee	*Osmia simillima*	Undetermined		
Meridional Mason Bee	*Osmia subaustralis*	Undetermined		
Wide-banded Mason Bee	*Osmia tersula*	Undetermined		
Federal Cuckoo Carder Bee	*Stelis foederalis*	Undetermined		
Healthy Cuckoo Carder Bee	*Stelis nitida*	Undetermined		
Subemarginate Cuckoo Carder Bee	*Stelis subemarginata*	Undetermined		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. COSEWIC Status: Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Indiscriminate Cuckoo Bumble Bee
Photo Credit: D Dooley

Catskill Potter Wasp
Photo Credit: S Marshall

6.13 Vespid Wasps

Like bees, wasps are part of the order Hymenoptera. Wasps are a very diverse group of insects. Yet, when most people think of wasps, they think yellowjackets, which make up but a handful of species in a single family: the Vespidae. In the NWT, two subfamilies of vespid wasps are represented: the yellowjackets (Vespinae) and the potter wasps (Eumeninae). Unlike their yellowjacket cousins, potter wasps are solitary creatures. The females build individual nests in a variety of styles, depending on the species. The name 'potter wasp' refers to members of the genus *Eumenes*, which build small, pot-like mud nests.

Everyone has a story or three about yellowjackets, the colonial, conspicuous wasps that share our back yards and picnics. Yellowjackets build globular nests out of papier maché that they make from strips of wood peeled from dead branches and logs. The young are raised in paper cells that are held in flat combs suspended within the protective walls of the nest. There are two groups of yellowjackets in the NWT: species in the genus *Vespula* generally build their nests in cavities in the ground (e.g., rodent burrows), whereas those in the genus *Dolichovespula* generally build theirs above ground, suspended from tree branches or beneath the eaves of houses or cabins. The name *Vespula* means 'little hornet' (the European hornet is much larger), and *Dolichovespula* means 'long, or narrow *Vespula*, referring to its longer face.

A yellowjacket queen begins her new colony on her own in the spring, and every winter the entire colony dies except for the new, mated queens, who hibernate elsewhere. All winter, the queen carries the sperm from last fall's mating. In spring the sperm fertilizes some of the maturing eggs and in May the queen begins to build a nest. The nest starts off small – the first comb is only a dozen cells, and the queen lays one egg in each cell. These first larvae will develop into female workers. The queen must raise them on her own and this phase is critical to the future productivity of the colony.

Although adult yellowjackets feed only on nectar and ripe fruit, the larvae are fed a variety of solid foods, predominantly insects and spiders. The prey is not killed by the sting, but by biting; they are then chewed up and the resulting bug pablum is fed to the hungry larvae. Only a few species scavenge meat; in the NWT, the pesky yellowjackets around your picnic table are likely Alaska yellowjackets, *V. alascensis*.

The workers begin to rapidly enlarge the nest, excavating a larger hole in subterranean nests, and building new combs and walls. The first larvae raised by the workers mature into still more workers, and in mid-summer combs for, new queen and males are built. After the new queens leave the nest they mate with males from other nests and the fertilized queens search out hibernation sites and go into torpor, often well before any cold weather threatens. At this time the colonies begin to senesce and the remaining larvae die of starvation or are eaten by the workers.

Why are some years 'bad' wasp years? Well, it seems that the numbers of wasps are not related to the numbers in previous years or how cold or warm the winter was. The real answer seems to lie in the weather conditions during the late spring and early summer, when the queens are establishing new nests. If it is cool and wet during this period, the queens face several problems. The cool weather slows down insect prey production and activity, so it is difficult for them to provide for their broods. Consequently the larvae grow much more slowly and many of them probably starve, putting the queens behind schedule with fewer helpers later on. The nests grow like money in the bank, and we all know the difference in returns between more money invested early and less invested late.

Vespid wasps are aculeate or stinging wasps. The females have a stinger – a modified ovipositor that is used by potter wasps to paralyse prey and by yellowjackets primarily as a defensive weapon. The stinger is retracted within the end of the abdomen. Other kinds of wasps with long, obvious ovipositors belong to other, non-stinging groups and are harmless to humans. Unlike that of the honeybee, the yellowjacket stinger is only microscopically barbed so it can be used for repeated thrusts.

Wasp venom contains up to six or seven main components, including histamine, serotonin, kinins and acetylcholine. Histamine, of course, initiates the general swelling reaction, while kinins and acetylcholine probably cause the burning pain. For most people the pain of a wasp sting is somewhat quickly forgotten, but to those with an allergic reaction to the venom, wasp stings can be serious.

Usually, however, wasps are quite docile and do not sting unless the nest is threatened or the stinged somehow unknowingly has interfered with a worker wasp. Although we tend to think of yellowjackets as insects to discourage from our back yards, they actually are very beneficial. Think how many plant-hungry insects a colony of 1,000 consumes each day! Unless you are threatened by a growing colony whose flight path goes by your back door or you are allergic to their stings, it is best to leave the nest alone and let the workers do their job.

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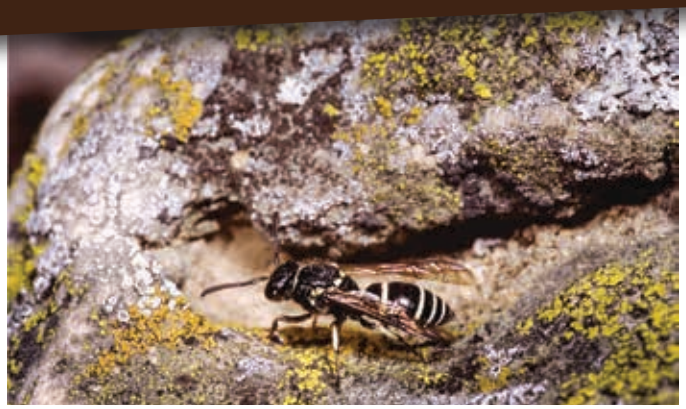
Northwestern Naturalist
Whitehorse, YT

Walden's Potter Wasp Photo Credit: S Marshall

List 13. **Vespid Wasps**

There are 24 species of vespid wasps confirmed present in the NWT. No species are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, by sub-family, and by scientific species name. Taxonomy follows Buck et al. 2008



White-banded Potter Wasp Photo Credit: S Marshall

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Hymenoptera – Vespidae – Eumeninae			Bee-like insects – Vespid wasps – Potter and mason wasps
Milky Potter Wasp	*Ancistrocerus albolacteus*	Undetermined	
White-banded Potter Wasp	*Ancistrocerus albophaleratus*	Secure	
Catskill Potter Wasp	*Ancistrocerus catskill*	Undetermined	
Walden's Potter Wasp	*Ancistrocerus waldenii*	Secure	
Cross Potter Wasp	*Eumenes crucifera*	Secure	
Black and White Digger Wasp	*Euodynerus leucomelas*	Undetermined	
Flat-footed Digger Wasp	*Euodynerus planitarsis*	Undetermined	
Beloved Eumenid Wasp	*Odynerus dilectus*	Undetermined	
Kennicott Mason Wasp	*Stenodynerus kennicottianus*	Undetermined	
Clear Mason Wasp	*Stenodynerus lucidus*	Undetermined	
White-bordered Potter Wasp	*Symmorphus albomarginatus*	Undetermined	
Canadian Potter Wasp	*Symmorphus canadensis*	Undetermined	
Tufted Potter Wasp	*Symmorphus cristatus*	Undetermined	
Hymenoptera – Vespidae – Vespinae			Bee-like insects – Vespid wasps – Yellowjackets and Hornets
Arctic Aerial Yellowjacket	*Dolichovespula albida*	Secure	
Rocky Mountain Aerial Yellowjacket	*Dolichovespula alpicola*	Undetermined	
Parasitic Aerial Yellowjacket	*Dolichovespula arctica*	Undetermined	
Common Aerial Yellowjacket	*Dolichovespula arenaria*	Secure	
Bald-faced Hornet	*Dolichovespula maculata*	Secure	
Northern Aerial Yellowjacket	*Dolichovespula norvegicoides*	Secure	
Forest Yellowjacket	*Vespula acadica*	Undetermined	
Alaska Yellowjacket	*Vespula alascensis*	Undetermined	
Cousin Yellowjacket	*Vespula consobrina*	Undetermined	
Cuckoo Yellowjacket	*Vespula infernalis*	Undetermined	
Northern Red-banded Yellowjacket	*Vespula intermedia*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Old nest of Bald-faced Hornet
Photo: D Johnson

Boreal Carpenter Ant with its aphid farm
Photo Credit: S Carriere

6.14 Ants

Ants belong to the large insect order Hymenoptera, which also includes sawflies, bees and a large variety of wasps.

Ants are easily identifiable to the casual observer as they have two characteristic body features that in combination separate these from other hymenopteran insects. First, like most other Hymenoptera, the waist of an ant is constricted between the thorax (middle body part) and the abdomen (tail); however in ants this constriction has one or two distinct bulbous nodes (bumps) at the waist constriction. Second, ants have bent or elbowed antennae.

Ants are highly social with different castes or forms within their social order (i.e., the queen, workers or sterile females, and males), and live in colonies forming a nest that remains in that fixed location for many years. Most of the ant specimens encountered in any location are the wingless female workers, which are far more numerous and active than the other castes (i.e., males, and the newly emerged winged female queens that later lose their wings).

The actual number of ant species in Canada is not known, although at present there are about two hundred species recorded. Most of these are within the southern parts of the country. The ant fauna of the NWT includes six genera, but the distribution of these species throughout the territory is poorly documented, and there are likely additional species to be recorded.

Some of the more common ants include the boreal carpenter ant (*Camponotus herculeanus*). At present this species is the only carpenter ant recorded from the NWT. The species ranges throughout the boreal forests and nests within cavities it excavates from rotten logs, stumps, or from under stones or in old housing timbers. They are also known to tend to aphid colonies living on plants, harvesting and feeding on the aphid's honeydew, and protecting them from predators. This circumpolar species can survive temperatures below -40° C and is considered the most cold-tolerant ant known.

The *Myrmica* ants are distinguished by the long spines on the back of the thorax (middle body part), and range widely throughout the boreal forest, nesting mainly in soil, under rocks, moss mounds and sometimes under lichens.

The most noticeable ant nests encountered in the NWT are created by some of the *Formica* ants. For example, the podzol mount ant (*Formica podzolica*) nests in acidic infertile podzolic soils and creates large, distinctive mounds. The new world red-bearded ant (*Formica neorufibarbis*) is one of North America's most cold-hardy ant species, ranging up into the taiga.

Ants play vital roles as predators, scavengers and dispersal agents of seeds and fungal spores in terrestrial ecosystems; they aerate and till the soil, have intricate relationships with other flora and fauna, and have been used to monitor and assess environmental change. They are ubiquitous and abundant throughout the terrestrial environments of all continents except Antarctica.

Threats and habitat trends that specifically impact ant communities throughout the NWT are poorly understood. Localized threats include resource extraction, long-term exposure to pesticides or other industrial effluents, and invasive species. Probably the most predominant threat to ant communities is the longer-term impacts from climate change, and how it affects shifting habitats, plant communities and droughts. Yet, until the natural history of these species within the northern latitudes is better understood, it is difficult to determine or predict if any of the NWT species are at risk.

At present, there are no documented occurrences of non-native ants in the NWT, and if these are detected in the future, they will likely be within or near to homes and buildings.

Most ant collections within Canadian museums are not databased and there is insufficient survey coverage for ants throughout Canada, particularly in the North, so any photos, location and specimens will help us all increase our understanding of ants in the NWT.

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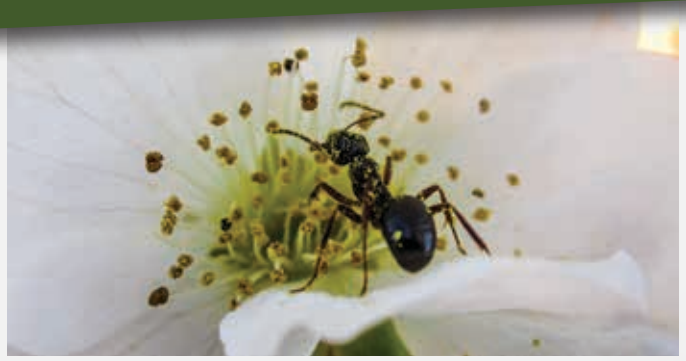
List 14. **Ants**

There are 12 species of ants confirmed present in the NWT. Four more species are expected to be present. No species are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, by sub-family, and by scientific species name. Taxonomy follows Bolton (2014).



Pale-legged Fuzzy Ant — Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Hymenoptera – Formicidae – Formicinae			Bee-like insects – Formicine ants
Boreal Carpenter Ant	*Camponotus herculeanus*	Undetermined	
Dark Mound Ant	*Formica fusca*	Presence Expected	
Jet Black Mound Ant	*Formica gagatoides*	Presence Expected	
Neonbright Mound Ant	*Formica neoclara*	Undetermined	
New World Red-bearded Ant	*Formica neorufibarbis*	Undetermined	
Podzol Mound Ant	*Formica podzolica*	Undetermined	
Pale-legged Fuzzy Ant	*Lasius pallitarsis*	Undetermined	
Shady Fuzzy Ant	*Lasius umbratus*	Undetermined	
Hymenoptera – Formicidae – Myrmicinae			Bee-like insects – Myrmicine ants
Treasured Thin Ant	*Leptothorax acervorum*	Presence Expected	
Mossy Thin Ant	*Leptothorax muscorum*	Undetermined	
Alaskan Ant	*Myrmica alaskensis*	Undetermined	
Short-spined Ant	*Myrmica brevispinosa*	Undetermined	
Detrital Ant	*Myrmica detritinodis*	Undetermined	
Incomplete Ant	*Myrmica incompleta*	Undetermined	
Lobe-fronted Ant	*Myrmica lobifrons*	Undetermined	
Hymenoptera – Formicidae – Dolichoderinae			Bee-like insects – Stingless ants
Odorous House Ant	*Tapinoma sessile*	Presence Expected	

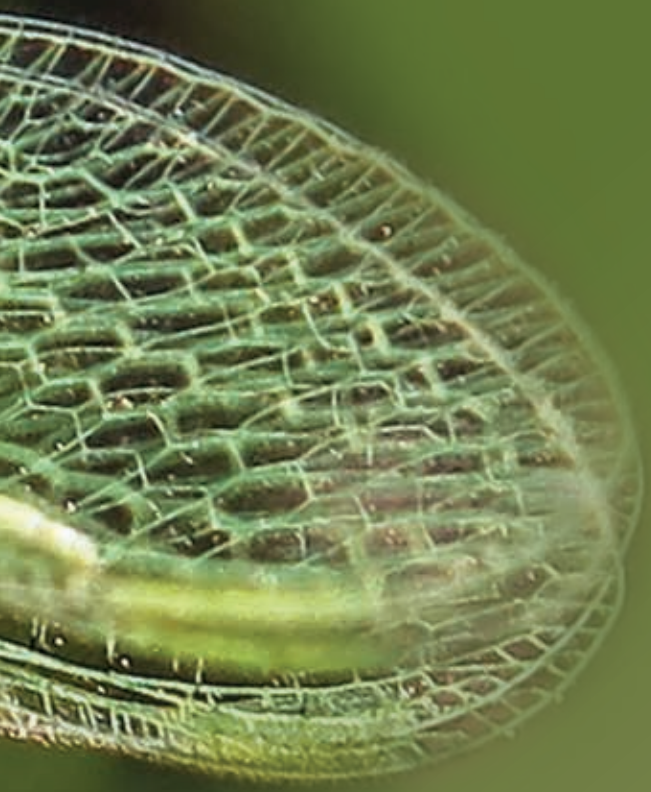
[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Shady Fuzzy Ant
Photo Credit: J Doby

New World Red-bearded Ant
Photo Credit: M Erbland

Common Green Lacewing
Photo Credit: J Hollett

6.15 Lacewings and Relatives



Lacewings and their relatives are insects in the Order Neuroptera (Latin for "net-winged insects"). Neuroptera insects are relatively few and are mostly found in the tropics. The NWT is home to three families: brown lacewings, green lacewings, and the spongillaflies. Other families of Neuroptera found elsewhere in Canada include the antlions (Myrmeleontidae), dustywings (Coniopterygidae), mantidflies (Mantispidae), owlflies (Ascalaphidae), beaded lacewings (Berothidae) and giant lacewings (Polystoechoidae).

Adult Neuroptera typically have narrow, cylindrical bodies, long antennae and long wings held tent-like over the body when at rest. Front and hind wings are similar in size and shape and both have a net-like pattern of veins. The wings resemble those of dragonflies but, unlike those masters of flight, lacewings are generally weak fliers. They are similar to dragonflies in being voracious predators of other insects both as larvae and adults. Some species are important predators of agricultural and forest pests like aphids. Both green and brown lacewings are attracted to lights and often find their way into homes on summer nights.

Typically, lacewing eggs are laid in spring on plants harbouring suitable prey like aphids. The eggs are laid in clusters with each egg suspended above the leaf surface at the end of a long stalk. This isolates the egg from the leaf and nearby eggs thus avoiding predation by its siblings and other insects, like lady beetles, also commonly found feeding on aphids. The young lacewing larvae, often called aphid lions, are equipped with a pair of sickle-shaped mouth parts they use to pierce and inject digestive enzymes into small insects. Then they reverse the flow and imbibe the body fluids and dissolved organs. Some species cover themselves with pieces of debris creating a cloak, which acts as both camouflage and a protective shell.

To grow, a lacewing larva must periodically shed its exoskeleton. Once it attains full size the larva spins a small silken cocoon in which to pupate. After a few days or weeks it emerges as a winged adult. Adult lacewings range in size from about 6 to 20 mm. The development time from egg to adult varies from a few weeks or months to a year or more depending on the species, abundance of food and temperature. When the adult emerges it will mate and, if early enough in the summer, a female may lay eggs and produce a second generation. The adult lacewing will continue to feed on other insects, pollen and other food sources into fall then seek out a suitable hiding place to spend the winter months.

Green lacewings have very sensitive hearing organs, called tympana, located at the base of the front wings. These tympana are used both to sense the low-frequency mating calls of nearby mates and to detect the ultrasonic calls of bats to avoid predation. These organs might also aid in sensing and locating prey species feeding on plants.

Spongillaflies are so named because the aquatic larva uses its threadlike mouthparts to pierce and ingest the contents of freshwater sponges and bryozoans (moss animals). The larva breathes through gills on the abdomen. When full grown, the larva leaves the water to spin a cocoon in a protected spot then pupate and emerge the next year as an adult that closely resembles a brown lacewing. After mating, the female will lay eggs on leaves overhanging the water. This allows her young to drop in and immediately begin foraging for sponges.

Like most insect groups, the Neuroptera have been collected sporadically from relatively few locations in Canada and are not well represented in museums. We know about some species of Neuroptera in the NWT based on a recent survey of the literature and specimens held in museums. This survey found approximately 120 specimens from 25 collections from 1922 to 2013 (contrast this number to the 2,900 birds observed during the Yellowknife Christmas bird count in 2013).

Most of these specimens were collected from the area around Great Slave Lake, Great Bear Lake, and the Mackenzie River delta region near Inuvik and at Tuktoyaktuk, the Mackenzie River valley, and along the Dempster highway. The most northerly species record is the lined brown lacewing *Wesmaelius nervosus* from Victoria Island. This indicates that some species can be found throughout the territory south of the Arctic Circle and in favourable habitats north of it.

A more intensive and distributed sampling effort will surely increase the number of species known to occur in the NWT. The extreme southwest regions near Fort Liard and at lower elevations in the Nahanni National Park Reserve are likely to have the highest Neuroptera species richness. Moving northward and eastward from here the likelihood of finding new records or high diversity diminishes but this does not mean these areas should be neglected. We know virtually nothing about the distribution of species across the vast expanse of the NWT so any collections provide valuable information about this part our biodiversity.

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List 15. **Lacewings and Relatives**

There are 14 species of lacewings confirmed present in the NWT, including the common green lacewings included in the list below as a single species complex. This taxon needs additional investigations to determine which additional species are present in the NWT (see footmote). There is one species of of spongillaflies confirmed present in the NWT. Ten more species are expected to be present in the NWT. None are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Oswald (2014).

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Neuroptera – Chrysopidae			Net-winged insects – Green lacewings
Cross-eyed Green Lacewing	*Chrysopa chi*	Undetermined	
Golden-eyed Green Lacewing	*Chrysopa oculata*	Undetermined	
Common Green Lacewings	*Chrysoperla sp*[b]	Undetermined	
Black-horned Green Lacewing	*Chrysopa nigricornis*	Presence Expected	
Mourner Green Lacewing	*Chrysoperla plorabunda*	Presence Expected	
Discriminating Green Lacewing	*Meleoma emuncta*	Presence Expected	
Neuroptera – Coniopterygidae			Net-winged insects – Dustywings
Moth-like Dustywing	*Coniopteryx tineiformis*	Presence Expected	
Neuroptera – Hemerobiidae			Net-winged insects – Brown lacewings
Ovale Brown Lacewing	*Hemerobius ovalis*	Undetermined	
Conjoined Brown Lacewing	*Hemerobius conjunctus*	Presence Expected	
Ridged Brown Lacewing	*Hemerobius costalis*	Undetermined	
Dorsal Brown Lacewing	*Hemerobius dorsatus*	Undetermined	
Shouldered Brown Lacewing	*Hemerobius humulinus*	Undetermined	
Pacific Brown Lacewing	*Hemerobius pacificus*	Undetermined	
Pine-thorn Brown Lacewing	*Hemerobius pinidumus*	Presence Expected	
Imitating Brown Lacewing	*Hemerobius simulans*	Presence Expected	
Marked Brown Lacewing	*Hemerobius stigma*	Presence Expected	
Angular Brown Lacewing	*Megalomus angulatus*	Undetermined	
Grooved Brunette Lacewing	*Micromus angulatus*	Undetermined	
Boreal Brown Lacewing	*Micromus borealis*	Presence Expected	
Forked Bronze Lacewing	*Wesmaelius furcatus*	Undetermined	
Intricate Bronze Lacewing	*Wesmaelius involutus*	Undetermined	
Long-faced Brown Lacewing	*Wesmaelius longifrons*	Presence Expected	
Lined Bronze Lacewing	*Wesmaelius nervosus*	Undetermined	
Neuroptera – Sisyridae			Net-winged insects – Spongillaflies
Black Spongillafly	*Sisyra nigra*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[b] Green lacewings (*Chrysoperla* sp.) were once considered a single common species (*Chrysoperla carnea*) present around the northern hemisphere. However, the taxon *C. carnea* is now considered strickly a European species. The many misidentified specimens in North American collections belong to a complex of species closely related to and virtually indistinguishable from *C. carnea*. New research[11] using song analysis and genetics has shown there may be many cryptic (hard to distinguish) species. More research will be needed to determine which and how many species of *Chrysoperla* are actually present in the NWT.

[11] Henry *et al*. 2002.

Orange-sided Horse Fly
Photo Credit: S Scholnick

6.16 Biting Flies

Three families of Diptera (flies) are included as biting flies: the Culicidae (mosquitoes), the Simuliidae (black flies) and the Tabanidae (horse flies and deer flies).

Females in all three families will take bloodmeals from birds or mammals to develop their eggs. Some species specialize in taking bloodmeals from a particular type of host (i.e., small mammals, ungulates, birds) while others are capable of producing a clutch without a bloodmeal with nutrients stored from their larval stage. In all three families, relatively few species are proficient at taking bloodmeals from humans and most species will preferably target other animals when available.

Males of these families do not bite and are therefore less conspicuous than females.

Biting flies are important components of northern ecosystems. Larvae of these three families are exclusively

aquatic and serve as food for fish and other aquatic animals. As larvae, many species are filter feeders and scrapers, which control the growth of algae and bacteria therefor helping to regulate water quality. Adults of both sexes require nectar from flowers to fuel their flight and general metabolism, making biting flies important pollinators in northern ecosystems. Due to their great abundance, adults also act as an important source of food for birds, bats and amphibians.

Many aspects of biting flies physiology are linked to temperature, including: flight activity, blood feeding and development rate. As a result of warming temperatures the Arctic is seeing an increase in the activity of biting flies that already live in the north and a potential invasion by species from southern regions that would not have been able to withstand the northern climate historically.

Mosquitoes

The Culicidae are slender flies with long legs and scale-covered bodies. They differ in colour from dark browns to yellows and have varying patterns of banding on their bodies and legs. Mosquitoes take blood using a special proboscis (mouthpart). Only female mosquitoes will take blood as they may require a blood meal to develop their eggs. However, not all mosquito species are dependent on blood meals; many northern species can produce eggs without it.

Mosquitoes are very dependent on humidity as they develop from eggs to pupa in standing or slow running waters. Many species will lay eggs only in very specific aquatic habitats, such as pools of snowmelt. Arctic species will hatch only if eggs are subjected to very low temperatures before hatching.

Most species survive the winter as eggs, while some species hibernate as gravid females in the adult stage, and will be found flying in very early spring when open water is not yet available. These species are mostly known to northerners as the "big dumb spring ones" because they are slow flying and seem to require some time before they start taking a blood meal.

Mosquitoes play an important part in northern ecosystems as their larvae are food for fish, dragonflies and other aquatic invertebrates. Adult mosquitoes provide an abundant source of food for birds and bats. Mosquitoes are also one of the main pollinators in the north as they will feed on nectar for energy. Their fast reproductive cycles and dependency on minimum temperatures and water makes mosquitoes a good indicator for environmental changes. Rising temperatures facilitate a longer season and contribute to the development of more generations of mosquitoes. Also, increasing temperatures may allow species previously unseen in the NWT to establish here. A species gradient can be seen across the NWT – in the southern forested regions, the diversity of species is high, whereas in the northern tundra regions, often only two to three species are found on a regular basis.

A mosquito monitoring program was initiated in the NWT following the accidental introduction of the West Nile Virus to Canada in 2001. This program has resulted in updated information on the distribution of mosquito species in the NWT. Other projects on insect harassment provide additional information. Only certain species of mosquitoes are able to transmit viral diseases to humans and mammals. The mosquitoes capable of transmitting West Nile virus were found in small numbers in the southern NWT, but so far, no mosquitoes collected here have been found to replicate the West Nile Virus.

Black flies

Simuliidae adults are typically small, stout bodied and hunch-backed. They are mostly black in colour but some species have silver, red or yellow patterns. Other common names for black flies include: sand flies, buffalo gnats and brûlots.

Females have mouthparts that are specially adapted to slice the skin of hosts. Unlike mosquitoes whose mouthparts act as a hypodermic needle, black fly mouthparts are blade-like and slash capillary networks under the skin causing blood to ooze out which is quickly lapped up.

Black flies are not important disease vectors to mammals in Canada, but do transmit Leucocytozoon parasites (an avian malarial-like disease).

The typical lifespan of an adult black fly is about one month. Black flies spend the majority of their lifecycles submerged in flowing water systems; from thermal springs to glacial melt water and from tiny roadside trickles to large rolling rivers. Mature larvae are 3 – 15 mm long and are dark grey to pale and coloured with black, brown, red or green patterns. Larvae attach themselves to submerged rocks or vegetation by producing a pad of

silk, to which they embed a specialized ring of hooks on the end of their abdomen. Larvae of most species use a large pair of foldable "head fans" that, when opened, filter minute particles such as bacteria, algae and fine particulate organic matter from the currents. The fans are then alternately collapsed and brought near the mouth where food particles are removed. However, the larvae of some species lack head fans altogether, and acquire all of their food by the scraping algae, bacteria and detritus from rocks and submerged vegetation using a specialized projection from their head capsule. Once fully mature, larvae transform to the pupal stage – an immobile phase of development during which no feeding takes place. Most species of black fly overwinter as eggs or larvae.

A recent survey conducted by the Northern Biodiversity Program in 2011 discovered an additional three species just from the vicinity of Yellowknife that were not previously known to occur in the territory. Due to the difficulty in species identifications, there are still likely other species present in the NWT that have not yet been discovered.

Horse flies and deer flies

Tabanidae adults of this family are large, stout bodied and swift flying. Most species have brightly coloured iridescent eyes with red, silver and yellow markings on their bodies.

The name deer fly only applies to species in the genus *Chrysops* which have dark patterns on their wings and distinct black spots on their eyes. All other species are known as horse flies and have a banded pattern on their eyes and rarely have wing patterns. Other common names for horse flies are: clegs, stouts, bulldogs and copperheads.

Females have mouthparts that are similar to black flies and are adapted to slicing into the skin of the host to acquire the blood meal. The process is often significantly more painful to the host than being bit by a black fly due to the larger size of the adults. Horse flies are also some of the fastest flying insects in the world with a male of one species being measured traveling 145 km/h. Horse and deer flies are also potential important vectors for diseases, such as tularaemia and encephalitis, in wildlife.

Horse and deer fly larvae are relatively indiscriminate with no appendages or external head. They are covered in a thick leathery cuticle and often have rings of protrusions encircling their bodies that give them traction as they move around. The larvae live in the soils and substrates along the banks and bottoms of a variety of aquatic habitats including streams, ponds, lakes and various types of wetlands. This makes the larvae more secretive than the other two families and less is known about their biology. Most species of horse fly appear to be predators of other insects and worms, but the feeding habits of deer fly larvae are largely unknown. In the NWT some species may stay in the larval stage for 2-3 years to fully mature.

Unlike mosquitoes and black flies, horse and deer flies rarely venture into the open tundra, except on exceptionally warm and windless days. The great majority of species will only be found in the southern treed portion of the territory with only one or two species venturing north.

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List 16. **Biting Flies**

There are 34 species of mosquitoes, 61 species of black flies, and 25 species of horse flies and deer flies confirmed present in the NWT. In addition, two species of mosquitoes and one species of black flies are expected to be present. None are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Gaffigan et al. (2015) for mosquitoes, Adler and Crosskey (2014) for black flies, and for horse flies and deer flies, Thomas and Marshall (2009) and Thomas (2011).

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Arthropoda – Insecta				**Arthropods – Insects**
Diptera – Culicidae				Fly-like insects – Mosquitoes
Field Mosquito	*Aedes campestris*	Undetermined		
Canada Mosquito	*Aedes canadensis*	Secure		
Short-palped Livestock Mosquito	*Aedes cataphylla*	Secure		
Ashy Mosquito	*Aedes cinereus*	Secure		
Quaking Bog Mosquito	*Aedes decticus*	Undetermined		
Long-antennaed Mosquito	*Aedes diantaeus*	Secure		
Summer Saltmarsh Mosquito	*Aedes dorsalis*	Undetermined		
Common Snowpool Mosquito	*Aedes communis*	Secure		
Large-larvaed Mosquito	*Aedes euedes*	Secure		
Woodland Snowmelt Mosquito	*Aedes excrucians*	Secure		
Fitch's Ditch Mosquito	*Aedes fitchii*	Undetermined		
Yellow Prairie Mosquito	*Aedes flavescens*	Undetermined		
Treeline Mosquito	*Aedes hexodontus*	Secure		
Hairy Tundra Mosquito	*Aedes impiger*	Secure		
Confusing Mosquito	*Aedes implicatus*	Secure		
Intruding Mosquito	*Aedes intrudens*	Undetermined		
Swift-flying Mosquito	*Aedes mercurator*	Undetermined		
Arctic Black-footed Mosquito	*Aedes nigripes*	Secure		
Boreal Benign Mosquito	*Aedes pionips*	Secure		
Provoking Mosquito	*Aedes provocans*	Undetermined		
Alpine Black-clad Mosquito	*Aedes pullatus*	Presence Expected	∃[5]	
Boreal Pesky Mosquito	*Aedes punctor*	Undetermined		
Rempel's Mosquito	*Aedes rempeli*	Presence Expected	∃[6]	
River Mosquito	*Aedes riparius*	Undetermined		
Winnipeg Mosquito	*Aedes spencerii*	Undetermined		
Floodwater Mosquito	*Aedes sticticus*	Undetermined	∃[6]	
Night Vexing Mosquito	*Aedimorphus vexans*	Undetermined		
Northern Beaver Lodge Mosquito	*Anopheles earlei*	Undetermined		
Cattail Mosquito	*Coquillettidia perturbans*	Undetermined		
Western Encephalitis Mosquito	*Culex tarsalis*	Secure		
Northern Frog-biting Mosquito	*Culex territans*	Undetermined	∃[4]	
Alaskan Winter Mosquito	*Culiseta alaskaensis*	Secure		
Impatient Winter Mosquito	*Culiseta impatiens*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Cool Weather Mosquito	*Culiseta incidens*	Secure		
Marsh Winter Mosquito	*Culiseta inornata*	Secure		
Tussock Winter Mosquito	*Culiseta morsitans*	Secure		
Diptera – Simuliidae				Fly-like insects – Blackflies
Hermit Black Fly	*Cnephia eremites*	Secure		
Nearly Hidden Black Fly	*Greniera abditoides*	Undetermined		
Denarius Black Fly	*Greniera denaria*	Undetermined	#	
Virgin Black Fly	*Gymnopais dichopticoides*	Presence Expected		
Big-eyed Black Fly	*Gymnopais holopticoides*	Secure	ⓘ[3]	
Alpine Black Fly	*Helodon alpestris*	Undetermined	∃[4]	
Ten-articled Black Fly	*Helodon decemarticulatus*	Secure		
Gibson's Black Fly	*Helodon gibsoni*	Undetermined	∃[4]	
Irkutsk Black Fly	*Helodon irkutensis*	Secure		
Two-lined Black Fly	*Metacnephia bilineata*	Secure		
Polar Black Fly	*Metacnephia borealis*	Secure		
Saskatchewan Black Fly	*Metacnephia saskatchewana*	Secure		
Dusky Black Fly	*Prosimulium fuscum*	Undetermined	#	
Bear Island Black Fly	*Prosimulium ursinum*	Secure		
Duck Black Fly	*Simulium anatinum*	Secure		
Ringed Black Fly	*Simulium annulus*	Secure		
Argus Mountain Black Fly	*Simulium argus*	Undetermined		
Baffin Island Black Fly	*Simulium baffinense*	Secure		
Bicorne Black Fly	*Simulium bicorne*	Secure		
Bracted Black Fly	*Simulium bracteatum*	Secure		

Agitated Deer Fly
Photo Credit: S Luk

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Burger's Black Fly	*Simulium burgeri*	Undetermined	#	
Congaree Black Fly	*Simulium congareenarum*	Undetermined	∃[4]	
Conundrum Black Fly	*Simulium conundrum*	Secure		
Craig's Black Fly	*Simulium craigi*	Secure		
Croxton's Black Fly	*Simulium croxtoni*	Secure		
Taiga Black Fly	*Simulium decimatum*	Secure		
Decorous Black Fly	*Simulium decorum*	Secure		
DeFoliart's Black Fly	*Simulium defoliarti*	Undetermined		
Excised Black Fly	*Simulium excisum*	Undetermined		
Exiled Black Fly	*Simulium exulatum*	Secure		
Fiona's Black Fly	*Simulium fionae*	Undetermined		
Little Spring Black Fly	*Simulium fontinale*	Secure		
Forked Black Fly	*Simulium furculatum*	Secure		
Blameless Black Fly	*Simulium innocens*	Undetermined		
Irritating Black Fly	*Simulium irritatum*	Secure		
Lugger's Black Fly	*Simulium luggeri*	Secure		
Malyschev's Black Fly	*Simulium malyschevi*	Secure		
Turkey Black Fly	*Simulium meridionale*	Undetermined		
Murmansk Black Fly	*Simulium murmanum*	Secure		
Outflow Black Fly	*Simulium noelleri*	Secure		
Variegated Black Fly	*Simulium pictipes*	Secure		
Fine-haired Black Fly	*Simulium pilosum*	Secure		
Beaked Black Fly	*Simulium rostratum*	Secure		
Rubtzov's Black Fly	*Simulium rubtzovi*	Undetermined		
Ruggle's Black Fly	*Simulium rugglesi*	Secure		
Woodland Black Fly	*Simulium silvestre*	Secure		
Tundra Black Fly	*Simulium subpusillum*	Secure		
Barren Grounds Black Fly	*Simulium tormentor*	Secure		
Broad-legged Black Fly	*Simulium transiens*	Secure		
Harmful Black Fly	*Simulium tribulatum*	Secure		
Short Black Fly	*Simulium truncatum*	Secure		
Tubercled Black Fly AB	*Simulium tuberosum*	Secure		
Vampire Black Fly	*Simulium vampirum*	Undetermined	∃[4]	
Little Thief Black Fly	*Simulium vandalicum*	Secure		
White-stockinged Black Fly	*Simulium venustum*	Secure		
Unassuming Black Fly	*Simulium verecundum*	Secure		
Injuring Black Fly	*Simulium violator*	Secure		
Striped Black Fly	*Simulium vittatum*	Secure		
Common Black Fly	*Simulium vulgare*	Secure		
Ten-filamented Black Fly	*Stegopterna decafilis*	Undetermined		
Emerging Black Fly	*Stegopterna emergens*	Secure		
Three-cornered Black Fly	*Stegopterna trigonium*	Undetermined	∃[4]	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Diptera – Tabanidae				Fly-like insects – Deerflies and horseflies
White-haired Horse Fly	*Atylotus sublunaticornis*	Secure		
Malicious Deer Fly	*Chrysops ater*	Secure		
Dawson's Deer Fly	*Chrysops dawsoni*	Undetermined		
Agitated Deer Fly	*Chrysops excitans*	Secure		
Coldregion Deer Fly	*Chrysops frigidus*	Undetermined		
Forked Deer Fly	*Chrysops furcatus*	Secure		
Benign Deer Fly	*Chrysops mitis*	Secure		
Black-legged Deer Fly	*Chrysops nigripes*	Undetermined	∃[4]	
North American Horse Fly	*Haematopota americana*	Undetermined		
Familiar Horse Fly	*Hybomitra affinis*	Secure		
Arpad's Horse Fly	*Hybomitra arpadi*	Secure		
Astute Horse Fly	*Hybomitra astuta*	Secure		
Epistate Horse Fly	*Hybomitra epistates*	Secure		
Boreal Horse Fly	*Hybomitra frontalis*	Secure		
Hearle's Horse Fly	*Hybomitra hearlei*	Undetermined		
Bog Horse Fly	*Hybomitra illota*	Secure		
Orange-sided Horse Fly	*Hybomitra lasiophthalma*	Secure		
Brown-legged Horse Fly	*Hybomitra liorhina*	Undetermined	∃[4]	
Broad-headed Horse Fly	*Hybomitra lurida*	Secure		
Bare Horse Fly	*Hybomitra nuda*	Secure		
Pechuman's Horse Fly	*Hybomitra pechumani*	Undetermined	∃[4]	
Banded Horse Fly	*Hybomitra sexfasciata*	Secure		
Fierce Horse Fly	*Hybomitra tetrica*	Undetermined		
Restless Horse Fly	*Hybomitra trepida*	Undetermined	∃[4]	
Yellowjacket Horse Fly	*Hybomitra zonalis*	Secure		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Photo Credit: J Hollett

Pygmy Bee Fly
Photo Credit: J Rosenfeld

6.17 Bee Flies

The Bombyliidae are a diverse group of small to medium-sized flies (Order Diptera). Most species are covered with fuzzy hair or colourful scales; some have intricate patterns on their wings.

There are over 4,500 species worldwide, mostly found in warm desert regions. In the NWT, they are currently known from forested parts of the territory.

As larvae, bee flies feed on immature stages of other insects such as bees, solitary wasps, grasshoppers, and moths. Most species seem to specialize on a small number of hosts, although much remains to be learned about host relationships. Females typically hover over patches of ground or near vertical surfaces such as tree trunks where hosts are found and flick their eggs onto the surface or directly into burrows. Most female bee flies have a special chamber near the tip of the abdomen used to collect sand or dust to coat the eggs, which may help disperse the eggs. Larvae hatch rapidly and are initially mobile as they seek out a host. Once they have found one they become immobile and feed either internally or externally until pupating, killing the host in the process.

Adult bee flies feed on flowers, consuming both pollen and nectar. Species with a long proboscis (mouth part) may visit a wide range of flowers, including those often associated with long-tongued bees. They can feed while hovering, and may rapidly visit a series of flowers much like a miniature hummingbird. Other species with a short proboscis must visit flowers with readily accessible nectar; they are particularly fond of yellow and white daisies and asters. More detailed knowledge of the relationships between flowers and bee flies are lacking in most areas, including the NWT.

Adults are most active on warm, sunny days. Males may spend much of their time sitting on open ground, possibly defending territory or waiting for females. They will fly a short distance in response to disturbance, eventually returning to their original spot. Bee flies spend the winter as either larvae or pupae; although their life cycles are not well known. Canadian species seem to have one generation per year. Some species will only be present as adults for a week each year, while others may be present through most of the summer.

Most of the NWT species are widespread across the Canadian boreal forest. One NWT species, an unnamed species of *Systoechus* found at Reindeer Depot near Inuvik, is currently not known from anywhere else in the world.

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List 17. **Bee Flies**

There are 13 species of bee flies confirmed present in the NWT. None are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Evenhuis and Greathead (2003).

Field Coal Bee Fly — Photo Credit: E Butler

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Diptera – Bombyliidae			Fly-like insects – Bee flies
Bearded Bee Fly	*Anastoechus barbatus*	Undetermined	
Gray Bee Fly	*Anastoechus melanohalteralis*	Undetermined	
Field Coal Bee Fly	*Anthrax georgicus*	Undetermined	
Speckled Coal Bee Fly	*Anthrax irroratus*	Undetermined	
Boreal Coal Bee Fly	*Anthrax picea*	Undetermined	
White-headed Bee Fly	*Bombylius albicapillus*	Undetermined	
Large Bee Fly	*Bombylius major*	Undetermined	
Pygmy Bee Fly	*Bombylius pygmaeus*	Secure	
Antelope Bee Fly	*Exoprosopa dorcadion*	Undetermined	
Mischievous Bee Fly	*Hemipenthes morio*	Secure	
Reindeer Depot Bee Fly	*Systoechus sp. 1*[b]	Undetermined	
Common Bee Fly	*Systoechus vulgaris*	Undetermined	
Tawny Bee Fly	*Villa fulviana*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[b] Reindeer Depot Bee Fly (*Systoechus* sp. 1) is not yet formally described and named.

Common Bee Fly
Photo Credit: S Mlodinow

6.18 Flower Flies

Unlined Bog Fly
Photo Credit: J Skevington

The Syrphidae are known as hover flies, flower flies or syrphids. This family is part of the Order Diptera, true flies. True to their common names, most adult syrphids are flower visitors as adults and some are among the most adept fliers in the insect world, reminiscent of miniature hummingbirds as they work flowers for their nectar rewards.

Flies in general contribute nearly 40% of our pollination services and flower flies are the most important single group of Diptera pollinators. Because flower flies are often excellent mimics of bees and wasps (they are harmless but gain protection from predators who mistake them for stinging insects), they are commonly overlooked at flowers. Indeed, many books, advertisements, media articles and literature extolling the benefits of bees mistakenly illustrate flower flies.

In contrast with the relatively uniform adult ecology of syrphids, larval flower fly ecology is amongst the most varied of any insect family. Larvae of one large subfamily of flower flies, the Syrphinae, are mostly predatory on aphids, scales and other insects. Many of these species are of critical importance in controlling pest numbers. A related subfamily, the Pipizinae, feed on specialized root aphids whereas the bizarre ant flies (Microdontinae) are predators and parasitoids of ants. From what we know (only 8% of ant flies have known larval life histories), these flies are typically host-specific and have evolved to mimic the chemical communication systems (pheromones and related) of their hosts. Ant fly larvae are thus able to wander around in ant nests with impunity while they feed on ant larvae and eggs. The other huge group of flower flies, the Eristalinae, includes almost every larval life history imaginable. There are predators here too, but the majority filter bacteria from their surroundings in a wide variety of ways. Some live in rot holes and are excellent indicators of the health of old growth forest ecosystems, some live in sap runs under bark, many live in ponds, rivers, bogs, and other wetlands, and some live in putrid water such as that found around farms or sewage lagoons (this includes the familiar rat-tailed maggots). Species that live in putrid water are often found in the billions and are critical in improving water quality. These species are being investigated for use on a commercial scale in water treatment facilities. Other eristaline larvae are plant feeders, with a few such as the bulb flies even achieving pest status. Some species are very specialized, and leaf feeding, stem feeding and root feeding species may co-occur on the same plant without directly competing. There are also a few specialized leaf miners, woodborers and pollen feeders.

The most diverse genus of flower flies found in the NWT is the *Platycheirus* (sedgesitters). Many of these flies have fantastic modifications of the male legs. These species-specific 'flags' are used for sexual display. As the common name implies, many sedgesitters are wetland specialists and can often be seen sitting on sedges and possibly feeding on sedge pollen.

So, syrphids are also extremely diverse. Over 6,200 species have been described worldwide and we estimate that 8,000-10,000 exist. This single family of flies thus rivals the diversity of birds on a global scale. In Canada, we have discovered over 500 species and add new species regularly as knowledge of them expands.

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List 18. **Flower Flies**

There are 136 species of flower flies confirmed present in the NWT. None are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, by *Family*, by sub-family and then by scientific species name. Taxonomy follows Vockeroth (1992), updated with Miranda *et al*. (2013), Locke and Skevington (2013), and Pape and Thompson (2013), as appropriate.

Hairy-eyed Flower Fly — Photo Credit: D Johnson

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Diptera – Syrphidae – Eristalinae			Fly-like insects – Syrphid flies – Drone flies
Golden-haired Wood Fly	*Blera nigra*	Undetermined	
Bald-striped Sapeater	*Brachyopa notata*	Undetermined	
Grasshopper Salix Fly	*Brachypalpus femorata*	Undetermined	
Northern Wasp Fly	*Ceriana abbreviata*	Undetermined	
Yellow-haltered Forest Fly	*Chalcosyrphus curvaria*	Undetermined	
Coal-spotted Forest Fly	*Chalcosyrphus parvus*	Undetermined	
Short-haired Forest Fly	*Chalcosyrphus piger*	Undetermined	
Orange-hipped Forest Fly	*Chalcosyrphus vecors*	Undetermined	
Saffron-haired Pollen Fly	*Cheilosia lasiophthalmus*	Undetermined	
Steely Pollen Fly	*Cheilosia latrans*	Secure	
Yellow-shouldered Pollen Fly	*Cheilosia pallipes*	Undetermined	
Robust Pollen Fly	*Cheilosia robusta*	Undetermined	
Yellow-haired Wrinkle Fly	*Chrysosyrphus latus*	Undetermined	
Long-haired Wrinkle Fly	*Chrysosyrphus nasuta*	Undetermined	
Orange-spotted Drone Fly	*Eristalis anthophorina*	Secure	
Black-shouldered Drone Fly	*Eristalis dimidiata*	Secure	
Orange-legged Drone Fly	*Eristalis flavipes*	Secure	
Black-spotted Drone Fly	*Eristalis fraterculus*	Secure	
Beringian Drone Fly	*Eristalis gomojunovae*	Undetermined	
Hirsute Drone Fly	*Eristalis hirta*	Secure	
Orange-spined Drone Fly	*Eristalis interrupta*	Secure	
Orange-spotted Drone Fly	*Eristalis obscura*	Secure	
Spot-winged Drone Fly	*Eristalis rupium*	Undetermined	
Common Drone Fly	*Eristalis tenax*	Secure	
Gray Sun Fly	*Helophilus bottnicus*	Secure	
Narrow-headed Sun Fly	*Helophilus fasciatus*	Undetermined	
Black-margined Sun Fly	*Helophilus groenlandicus*	Secure	
Woolly-tailed Sun Fly	*Helophilus hybridus*	Secure	
Yellow-legged Sun Fly	*Helophilus intentus*	Undetermined	
Yellow-margined Sun Fly	*Helophilus lapponicus*	Secure	
Obscure Sun Fly	*Helophilus obscurus*	Secure	
Long-nosed Swamp Fly	*Lejops lineatus*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Moon-shaped Swamp Fly	*Lejops lunulatus*	Undetermined	
Treacherous Swamp Fly	*Lejops perfidiosus*	Undetermined	
Black Polar Fly	*Lejops willingi*	Undetermined	
White-kneed Fen Fly	*Neoascia geniculata*	Secure	
Globetail Fen Fly	*Neoascia sphaerophoria*	Secure	
Black Fen Fly	*Neoascia subchalybea*	Secure	
Unlined Bog Fly	*Parhelophilus obsoletus*	Undetermined	
Arctic Pond Fly	*Sericomyia arctica*	Undetermined	
Northern Pond Fly	*Sericomyia jakutica*	Secure	
Narrow-spotted Pond Fly	*Sericomyia militaris*	Undetermined	
Polar Pond Fly	*Sericomyia nigra*	Secure	
Six-banded Pond Fly	*Sericomyia sexfasciata*	Secure	
Great-nosed Pond Fly	*Sericomyia tolli*	Undetermined	
Vockeroth's Pond Fly	*Sericomyia vockerothi*	Undetermined	
Wood's Pond Fly	*Sericomyia woodi*	Undetermined	
Wasp-like Falsehorn	*Temnostoma alternans*	Undetermined	
Black-spotted Falsehorn	*Temnostoma excentrica*	Undetermined	
Arctic Bumblefly	*Volucella arctica*	Secure	
Yellow-faced Bumblefly	*Volucella facialis*	Secure	
Northern Forest Fly	*Xylota flavifrons*	Secure	
Yellow-toed Forest Fly	*Xylota flavitibia*	Undetermined	
Naknek Forest Fly	*Xylota naknek*	Undetermined	
Hairy-horned Forest Fly	*Xylota subfasciata*	Undetermined	
Diptera – Syrphidae – Pipizinae			Fly-like insects – Syrphid flies – Woolly flies
Ebony Woolly Fly	*Pipiza atrata*	Undetermined	
Large-legged Woolly Fly	*Pipiza macrofemoralis*	Secure	
Four-spotted Woolly Fly	*Pipiza quadrimaculata*	Undetermined	
Diptera – Syrphidae – Syrphinae			Fly-like insects – Syrphid flies – Flower and hover flies
Common Dainty	*Baccha elongata*	Undetermined	
Thin-banded Meadow Fly	*Chrysotoxum derivatum*	Undetermined	
Blackshield Meadow Fly	*Chrysotoxum flavifrons*	Undetermined	
Confusing Conifer Fly	*Dasysyrphus intrudens*	Secure	
Boreal Conifer Fly	*Dasysyrphus laticaudus*	Secure	
Narrow-banded Conifer Fly	*Dasysyrphus limatus*	Undetermined	
Arctic Conifer Fly	*Dasysyrphus nigricornis*	Secure	
Transverse Conifer Fly	*Dasysyrphus venustus*	Undetermined	
Triangular Lucent	*Didea alneti*	Undetermined	
Black-horned Smoothtail	*Epistrophe grossulariae*	Undetermined	
Straight-banded Smoothtail	*Epistrophe nitidicollis*	Undetermined	
Bare-plated Smoothtail	*Epistrophe terminalis*	Undetermined	
Slender Smoothtail	*Epistrophella emarginata*	Undetermined	
Comma-spot Aphideater	*Eupeodes curtus*	Secure	
Fluke's Aphideater	*Eupeodes flukei*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Common Loopwing Aphideater	*Eupeodes lapponicus*	Secure	
Variable Aphideater	*Eupeodes latifasciatus*	Secure	
Black-tailed Aphideater	*Eupeodes luniger*	Secure	
Red-tailed Aphideater	*Eupeodes montivagus*	Undetermined	
Black Aphideater	*Eupeodes nigroventris*	Undetermined	
Perplexing Aphideater	*Eupeodes perplexus*	Undetermined	
Large-tailed Aphideater	*Eupeodes volucris*	Undetermined	
Drab Woolly Fly	*Heringia nigricornis*	Undetermined	
Pollinose Halfband	*Melangyna arctica*	Undetermined	
Large-spotted Halfband	*Melangyna fisherii*	Undetermined	
Hair-eyed Halfband	*Melangyna lasiophthalma*	Undetermined	
Bare-winged Halfband	*Melangyna umbellatarum*	Secure	
Western Roundtail	*Melanostoma mellinum*	Secure	
Spotted Roundtail	*Meligramma triangulifera*	Undetermined	
American Thintail	*Meliscaeva cinctella*	Undetermined	
Black-nosed Grass Skimmer	*Paragus haemorrhous*	Undetermined	
Common Bristleside	*Parasyrphus genualis*	Undetermined	
Arctic Bristleside	*Parasyrphus groenlandica*	Undetermined	
Yellow-faced Bristleside	*Parasyrphus nigritarsis*	Undetermined	
Boreal Bristleside	*Parasyrphus relictus*	Undetermined	
Holarctic Bristleside	*Parasyrphus tarsatus*	Secure	
Coquillett's Sedgesitter	*Platycheirus aeratus*	Undetermined	
Three-tufted Sedgesitter	*Platycheirus albimanus*	Undetermined	
Broadhand Sedgesitter	*Platycheirus amplus*	Undetermined	
Delicate Sedgesitter	*Platycheirus angustatus*	Undetermined	

Six-banded Pond Fly
Photo: J Skevington

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Bristlehand Sedgesitter	*Platycheirus chilosia*	Secure	
Smoky-winged Sedgesitter	*Platycheirus clypeatus*	Undetermined	
Hooked Sedgesitter	*Platycheirus coerulescens*	Secure	
Cobalt Sedgesitter	*Platycheirus concinnus*	Undetermined	
Confusing Sedgesitter	*Platycheirus confusus*	Undetermined	
Hornhand Sedgesitter	*Platycheirus granditarsis*	Secure	
Greenland Sedgesitter	*Platycheirus groenlandicus*	Secure	
Tufted Sedgesitter	*Platycheirus holarcticus*	Secure	
Silvery Sedgesitter	*Platycheirus hyperboreus*	Secure	
Comb-legged Sedgesitter	*Platycheirus immarginatus*	Secure	
Lundbeck's Sedgesitter	*Platycheirus lundbecki*	Undetermined	
Yellow Sedgesitter	*Platycheirus modestus*	Secure	
Nielsen's Sedgesitter	*Platycheirus nielseni*	Undetermined	
Black-legged Sedgesitter	*Platycheirus nigrofemoratus*	Undetermined	
Twospear Sedgesitter	*Platycheirus nodosus*	Undetermined	
Perplexing Sedgesitter	*Platycheirus perpallidus*	Undetermined	
Speartip Sedgesitter	*Platycheirus pilatus*	Undetermined	
Variable Sedgesitter	*Platycheirus podagratus*	Undetermined	
Northwest Sedgesitter	*Platycheirus pullatus*	Undetermined	
Orangetail Sedgesitter	*Platycheirus rufigaster*	Sensitive	
Yukon Sand dune Sedgesitter	*Platycheirus sabulicola*	Undetermined	
Blackspine Sedgesitter	*Platycheirus scambus*	Secure	
Spinyhand Sedgesitter	*Platycheirus setitarsis*	Undetermined	
Silver Sedgesitter	*Platycheirus varipes*	Undetermined	
Greater Bristlehand Sedgesitter	*Platycheirus yukonensis*	Undetermined	
White-commas Hoverfly	*Scaeva pyrastri*	Secure	
Variable Globetail	*Sphaerophoria abbreviata*	Secure	
Asymmetrical Globetail	*Sphaerophoria asymmetrica*	Secure	
Tufted Globetail	*Sphaerophoria contigua*	Undetermined	
Black-striped Globetail	*Sphaerophoria novaeangliae*	Undetermined	
Black-footed Globetail	*Sphaerophoria philanthus*	Secure	
Violaceous Globetail	*Sphaerophoria pyrrhina*	Secure	
Yellow-margined Flower Fly	*Syrphus attenuatus*	Secure	
Common Flower Fly	*Syrphus ribesii*	Secure	
Six-spotted Flower Fly	*Syrphus sexmaculatus*	Undetermined	
Hairy-eyed Flower Fly	*Syrphus torvus*	Secure	
Black-legged Flower Fly	*Syrphus vitripennis*	Secure	
Diptera – Syrphidae – Microdontinae			Fly-like insects – Syrphid flies – Ant flies
White-Haired Ant Fly	*Microdon albicomatus*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Michigan Burrowing Mayfly
Photo Credit: D Giberson

6.19 Mayfies

The Ephemeroptera are a small order of insects with aquatic immature stages and terrestrial adults. They are the oldest order of winged insects still living today, dating from Carboniferous and Permian times.

As with other insects, they go through a number of larval or nymphal stages, but whereas most insects have a single adult winged stage for dispersal and mating (though note that some, such as fleas and lice, are wingless, even as adults) mayflies are unique among insects in that they have two winged stages. The first is known as the subimago (or in fly-fishing terminology, the dull-coloured "dun"), and the second stage is called the imago (the clear-winged and brighter coloured "spinner").

Mayfly life cycles can range from a few weeks to several years, depending on the species and the location. Most of the life is spent as a nymph in the water, and growth is strongly dependent on temperature and food. The number of nymphal growth stages (instars) can range from 10 to 50, and is not fixed even within particular species' life cycles. Once they reach a certain size and maturity as nymphs, emergence in most is triggered by specific temperature or light. The adults do not feed, so adults rarely live longer than a few hours to a few days. Mayflies in temperate and arctic areas are usually highly seasonal, with hatching from the egg and emergence to the adult controlled by a combination of temperature and light patterns.

Most mayflies deposit their eggs by flying to the water surface and dipping their abdomens into the water, releasing a few eggs at a time to fall to the substrate below. Some species in the genus Baetis can enter the water directly and swim to the bottom, laying the eggs directly onto suitable substrates. The eggs have attachment structures that stick them to the substrate materials so they are not dislodged in water currents. Egg development can range from as little as a week to more than a year, depending on species-specific water temperature requirements. A few species have eggs that enter a resting stage called diapause if temperatures are too low, delaying hatching until conditions are suitable for the nymphs to survive. For example, widespread northern small minnow mayfly, *Baetis bundyae*, can live in small streams and ponds that freeze to the bottom because it spends most of the year as a resistant egg, and only hatches once the water reaches a specific temperature in summer. This species completes development from egg hatch to adult in 3-4 weeks, so is easily missed when collecting mayflies. Most species, however, require habitat that does not freeze solid in winter.

Nymphs emerge ('hatch') to the first winged stage by swimming to the surface of the water, and using the last nymphal skin (exoskeleton) as a raft while the winged stage crawls out of a split that forms along their back. After emergence, these "cast skins" can often be seen floating on the water in bays or backwaters. The subimago (dun) is covered with fine, water-resistant hairs to help keep them afloat as they harden their wings enough to fly from the water surface. The subimago doesn't fly well, and usually seeks out streamside vegetation to attach to, avoiding predators. Tundra species can also spend their subimago stage under loose rocks on shore if there is little or no streamside vegetation. Within a few hours, they moult again, this time to the imago or sexually mature adult.

In temperate regions, males often form impressive mating swarms at dawn or dusk, and females enter the swarm and mate on the wing. In the North, mating swarms can occur at any time of day, and may be dependent on air temperature. Some mayfly species are parthenogenetic (where eggs develop without needed to be fertilized), so males may be rare or even absent in these species.

The nymphs live in a variety of freshwater habitats, and show a range of body shapes and feeding relationships. Some (for example, the "minnow mayflies") have a streamlined body shape that allows them to swim easily or to live in moderate water currents. Others are flattened in shape, which lets them hug the substrates in fast moving water without being dislodged and carried downstream. All mayfly nymphs have gills on their abdomens that increase their body surface area for picking up oxygen from the water, and these gills range from simple plate-like structures to complex feathery structures that can be moved in unison to move water past the gills to increase oxygen uptake. One group (the burrowing mayflies in the family Ephemeridae) burrow into the bottom mud or sand of lakes and large rivers, and use their gill movements to circulate water and food through their burrows.

Most mayfly nymphs feed on plant or plant-like material, either by scraping algae from rocks or collecting and eating dead and decaying plant material (detritus). Some filter the fine detritus from the water, whereas others scoop up detritus deposited on the bottom. Some (*Isonychia, Siphlonurus, Stenonema,* and *Ephemera*) are omnivorous, but only a few species are primarily predaceous.

The nymphs have strong species-specific microhabitat preferences, and are generally intolerant of water pollution (especially acidification or nutrient enrichment that leads to low oxygen in the water), so they have become important bioindicator species for scientists to assess the health of streams or ponds where they are found. Interestingly, one group (the *Baetidae*) which is relatively pollution-tolerant (compared to other mayfly families) is also the most dominant family found in the North!

The nymphs are very important ecologically, as members of aquatic food webs, cycling nutrients. They are eaten by other invertebrates and are particularly important food organisms for fish. Once in the terrestrial habitat, they are also important food for birds, bats, and shrews

Fly-fishers recognize their importance, and many important artificial flies for fishing attempt to mimic mayflies!

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List 19. **Mayflies**

There are 57 species of mayfly confirmed present in the NWT. One additional species is expected to be present. One species is of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows McCafferty and Jacobus (2014).

Red Speckled Mayfly Photo Credit: S Carriere

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Ephemeroptera – Ameletidae			Ephemeral insects – Combmouthed minnow mayflies
Holarctic Comb Minnow Mayfly	*Ameletus inopinatus*	Undetermined	
Speckled Comb Minnow Mayfly	*Ameletus sparsatus*	Undetermined	
Ephemeroptera – Ametropodidae			Ephemeral insects – Sand minnows mayflies
Fragile Sand Minnow Mayfly	*Ametropus fragils*	Undetermined	
Ephemeroptera – Arthropleidae			Ephemeral insects – Palp-headed mayflies
Two-spotted Palpheaded Mayfly	*Arthroplea bipunctata*	Undetermined	
Ephemeroptera – Baetidae			Ephemeral insects – Small minnow mayflies
Wilderness Small Minnow Mayfly	*Acentrella feropagus*	Undetermined	
Lesser Small Minnow Mayfly	*Acentrella insignificans*	Undetermined	
Confused Small Minnow Mayfly	*Acentrella turbida*	Secure	
Two-quilled Small Minnow Mayfly	*Baetis bicaudatus*	Secure	
Northern Small Minnow Mayfly	*Baetis bundyae*	Undetermined	
Yellow-striped Small Minnow Mayfly	*Baetis flavistriga*	Undetermined	
Arctic Small Minnow Mayfly	*Baetis foemina*	Undetermined	G2G3 – 2005
Common Small Minnow Mayfly	*Baetis tricaudatus*	Secure	
Red Speckled Mayfly	*Callibaetis ferrugineus*	Undetermined	
Hagen's Small Minnow Mayfly	*Diphetor hageni*	Undetermined	
Rock Island Small Minnow Mayfly	*Labiobaetis propinquus*	Undetermined	
Tiny-winged Sulphur Mayfly	*Procloeon pennulatum*	Undetermined	
Ephemeroptera – Baetiscidae			Ephemeral insects – Armoured mayflies
Laurentian Armoured Mayfly	*Baetisca laurentina*	Undetermined	
Large Armoured Mayfly	*Baetisca obesa*	Undetermined	
Ephemeroptera – Caenidae			Ephemeral insects – Small square-gilled mayflies
Friendly Small Squaregill Mayfly	*Caenis amica*	Presence Expected	
Young's Small Squaregill Mayfly	*Caenis youngi*	Undetermined	
Ephemeroptera – Ephemerellidae			Ephemeral insects – Spiny crawler mayflies
Simple Spiny Crawler Mayfly	*Dannella simplex*	Undetermined	
Colorado Spiny Crawler Mayfly	*Drunella coloradensis*	Undetermined	
Dodds's Spiny Crawler Mayfly	*Drunella doddsii*	Undetermined	
Boreal Spiny Crawler Mayfly	*Ephemerella aurivillii*	Undetermined	
Pale Spiny Crawler Mayfly	*Ephemerella dorothea*	Undetermined	
Lowlands Spiny Crawler Mayfly	*Ephemerella excrucians*	Undetermined	
Sulphur Spiny Crawler Mayfly	*Ephemerella invaria*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Moffat's Spiny Crawler Mayfly	*Ephemerella mucronata*	Undetermined	
Warty Spiny Crawler Mayfly	*Ephemerella tibialis*	Undetermined	
Bicolour Spiny Crawler Mayfly	*Eurylophella bicolor*	Undetermined	
Fleating Spiny Crawler Mayfly	*Eurylophella temporalis*	Undetermined	
Ephemeroptera – Ephemeridae			Ephemeral insects – Riverbed burrower mayflies
Shadowed Burrowing Mayfly	*Ephemera simulans*	Undetermined	
Michigan Burrowing Mayfly	*Hexagenia limbata*	Undetermined	
Ephemeroptera – Heptageniidae			Ephemeral insects – Flat-headed mayflies
Tardy Mula Flathead Mayfly	*Cinygmula tarda*	Undetermined	
Alberta Two-tailed Mayfly	*Epeorus albertae*	Undetermined	
Deceptive Two-tailed Mayfly	*Epeorus deceptivus*	Undetermined	
Grand Two-tailed Mayfly	*Epeorus grandis*	Undetermined	
Longshank Two-tailed Mayfly	*Epeorus longimanus*	Undetermined	
Yellow Flathead Mayfly	*Heptagenia flavescens*	Undetermined	
July Flathead Mayfly	*Heptagenia julia*	Undetermined	
Dusky Flathead Mayfly	*Heptagenia pulla*	Undetermined	
Hebe Flathead Mayfly	*Leucrocuta hebe*	Undetermined	
Midwestern Flathead Mayfly	*Leucrocuta maculipennis*	Undetermined	
Pretty Cream Cahill Mayfly	*Maccaffertium pulchellum*	Undetermined	
American Cream Cahill Mayfly	*Maccaffertium vicarium*	Undetermined	
Hungry Clinging Mayfly	*Rhithrogena jejuna*	Undetermined	
Wavering Clinging Mayfly	*Rhithrogena undulata*	Undetermined	
Red Fox Mayfly	*Stenonema femoratum*	Undetermined	
Ephemeroptera – Leptophlebiidae			Ephemeral insects – Prong-gilled mayflies
Cloudy Prong-gilled Mayfly	*Leptophlebia nebulosa*	Undetermined	
Dappled Summer Prong-gilled Mayfly	*Paraleptophlebia guttata*	Undetermined	
Mournful Summer Prong-gilled Mayfly	*Paraleptophlebia moerens*	Undetermined	
Ephemeroptera – Metretopodidae			Ephemeral insects – Cleft-footed minnow mayflies
Boreal Clefttfoot Minnow Mayfly	*Metretopus borealis*	Undetermined	
Flapless Clefttfoot Minnow Mayfly	*Siphloplecton interlineatum*	Undetermined	
Ephemeroptera – Siphlonuridae			Ephemeral insects – Primitive minnow mayflies
Tundra Primitive Mayfly	*Parameletus chelifer*	Undetermined	
Northern Primitive Mayfly	*Siphlonurus alternatus*	Undetermined	
Western Primitive Mayfly	*Siphlonurus occidentalis*	Undetermined	
Leafy Primitive Mayfly	*Siphlonurus phyllis*	Undetermined	
Showy Primitive Mayfly	*Siphlonurus spectabilis*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Giant Salmonfly
Photo Credit: B Stark

6.20 Stoneflies

The Plecoptera are a relatively small order of insects. They are characterized by an aquatic immature (nymph) stage (for most species) and terrestrial adults. The nymphs are found mainly in streams and rivers, although some species can live in the wave-washed shores of lakes especially in cool northern or high altitude lakes. Adults are found near streams, either in vegetation, or on or under loose rocks along the edges. Worldwide, stoneflies can be found on all continents except Antarctica.

Stoneflies usually complete their development from egg to adult within a year, though some species have shorter life cycles and some have cycles as long as four years. Depending on species, eggs may be dropped on the water surface from flight or while walking over rocks near shore. In a few species, the females enter the water and walk on the stream bottom to deposit their eggs. The eggs have attachment structures or sticky coverings that allow them to attach to substrates so they are not washed away.

In most species, the eggs develop quickly and are ready to hatch within 3-4 weeks, though some species in intermittent streams or streams showing wide temperature extremes may show arrested development that allows them to hatch when conditions are the most suitable. Others may suspend development for several years.

For most species, the majority of the stonefly life cycle is spent as an immature nymph in the water, and habitat conditions during development are critical to their survival. Stoneflies require well oxygenated and clean water for survival, and most species have very specific requirements for certain water temperatures, substrates, and food resources. These lead to species-specific distributional differences along the lengths of streams, as well as within microhabitats in stream sites. For example, some species prefer to live in packs of deposited leaves, whereas others may be on the surfaces or sides of rocks, or even deep within the stream gravelly substrates.

Nymphs of most temperate and northern species hatch from the eggs in summer, and grow through autumn and spring to emerge as adults sometime during the open water season in summer. A few species, known as "winter stoneflies" (some species in the Capniidae and Taeniopterygidae) emerge as adults when ice is still present, and may mate on or under the ice, without leaving the stream. Most northern species are found in water bodies that do not freeze solid, and the nymphs are active under the ice. Species in small or intermittent streams, however, may spend the winter frozen in the ice, either as an egg or nymph that can stop their development in a process called diapause.

Stonefly nymphs show a variety of feeding types, depending on species, but fall mainly into two categories: herbivore-detritivores feeders and predators. The herbivore-detritivores include "shredders", which tear and eat relatively large pieces of dead plant material, such as fallen leaves, in the water, and "collectors", which gather and feed on fine detritus particles. The predators feed mainly on other aquatic insects. These feeding categories are not fixed, however, and many of the predaceous species may feed on detritus when they are small, and some of the detritus feeders may also feed by scraping algae off of rocks and submerged vegetation. Of those found in the NWT, members of the families Capniidae, Leuctridae, Nemouridae, Taeniopterygidae, and Pteronarcyidae feed on detritus, and members of the Chloroperlidae, Perlidae, and Perlodidae are considered primarily predaceous.

Adults may live for one to a few weeks, and generally stay close to the stream or lake from which they've emerged ('hatched'). During emergence, nymphs of most species crawl out of the water onto streamside rocks or vegetation, then the adult form crawls out of a split that forms in their nymphal skin (exoskeleton) along the back. Newly emerged adults are soft and generally light in colour, and at this stage are called "teneral". They harden quickly, though, and move to vegetation or crevices along shore to begin hunting for a mate. Some do not feed as adults, while others feed on algae, lichens, pollen, or nectar. Adults do not fly very well, and are most often seen clinging to vegetation or hiding under stones.

Stoneflies in the northern hemisphere have a unique method of locating their mates, known as "drumming". They start by gathering near the stream or lake margin, then the males call by tapping their abdomens on a hard surface in species-specific patterns. Virgin females answer the male call, and then stay in one spot so the males can find them. Both call and answer until the male has located the female, and then they mate.

Stoneflies have long been known to be important as "fish food" in our streams and rivers, and are usually quite well known to fly-fishers. Due to their diverse feeding habits, they are important in all levels of aquatic food webs: some species contribute to the breakdown of detritus in streams, some are predators in their own right, and all provide a food source to other predatory animals in the streams or lakes in which they reside. Adults may also be important food for birds and other terrestrial insectivores.

The stoneflies' requirements for clean and well oxygenated water have also led to their use as "biological indicators". We can assess stream health by looking at the diversity and abundance of different species of stonefly and other stream invertebrates. Unfortunately, pollution in many industrialized areas has led to major declines in stoneflies throughout the world.

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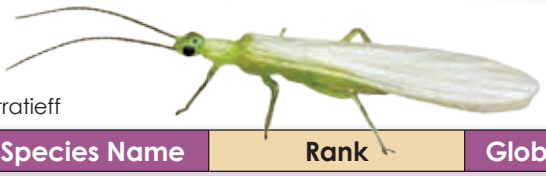
List 20. **Stoneflies**

There are 37 species of stoneflies confirmed present in the NWT. Two species are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows DeWalt *et al*. 2013.

A Springfly of Perlodidae Family Photo Credit: D Giberson

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Plecoptera – Capniidae			Stoneflies – Small winter stoneflies
Widespread Snowfly	*Capnia confusa*	Undetermined	
Nearctic Snowfly	*Capnia nearctica*	Undetermined	
Belly Snowfly	*Capnia vernalis*	Undetermined	
Giant Snowfly	*Isocapnia grandis*	Undetermined	
Columbian Snowfly	*Utacapnia columbiana*	Undetermined	
Plecoptera – Chloroperlidae			Stoneflies – Green stoneflies
Alaska Sallfly	*Alaskaperla ovibovis*	Undetermined	G3 – 2009
Pacific Coast Sallfly	*Alloperla elevata*	Undetermined	
Western Sallfly	*Alloperla severa*	Undetermined	
Least Sallfly	*Haploperla brevis*	Undetermined	
Gallatin Sallfly	*Suwallia starki*	Undetermined	
Colorado Sallfly	*Sweltsa coloradensis*	Undetermined	
Plecoptera – Nemouridae			Stoneflies – Nemourid stoneflies
Little Black Forestfly	*Amphinemura nigritta*	Undetermined	
Lovely Forestfly	*Amphinemura palmeni*	Undetermined	
Arctic Forestfly	*Nemoura arctica*	Undetermined	
Alaska Forestfly	*Nemoura normani*	Undetermined	G1Q – 2009
Nearctic Forestfly	*Nemoura rickeri*	Undetermined	
Banded Forestfly	*Prostoia besametsa*	Undetermined	
Intrepid Forestfly	*Shipsa rotunda*	Undetermined	
Common Forestfly	*Zapada cinctipes*	Undetermined	
Columbian Forestfly	*Zapada columbiana*	Undetermined	
Oregon Forestfly	*Zapada oregonensis*	Undetermined	

American Salmonfly Larva
Photo Credit: G Guthrie



Western Sallfly
Photo Credit: B Kontratieff

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Plecoptera – Perlidae			Stoneflies – Perlid stoneflies
Common Stonefly	*Acroneuria abnormis*	Undetermined	
Boreal Stonefly	*Acroneuria lycorias*	Undetermined	
Short-winged Stonefly	*Claassenia sabulosa*	Undetermined	
Plecoptera – Perlodidae			Stoneflies – Perlodid stoneflies
Holarctic Springfly	*Arcynopteryx dichroa*	Secure	
Summer Springfly	*Cultus aestivalis*	Undetermined	
Lapland Springfly	*Diura bicaudata*	Secure	
Blackfoot Springfly	*Isogenoides colubrinus*	Secure	
Husdonian Springfly	*Isogenoides frontalis*	Undetermined	
Heavenly Springfly	*Isogenoides zionensis*	Undetermined	
Bear Lake Stripetail	*Isoperla decolorata*	Secure	
Plains Stripetail	*Isoperla longiseta*	Undetermined	
Springs Stripetail	*Isoperla petersoni*	Undetermined	
Transverse Stripetail	*Megarcys signata*	Undetermined	
American Springfly	*Skwala americana*	Undetermined	
Plecoptera – Pteronarcyidae			Stoneflies – Giant stoneflies
Least Salmonfly	*Pteronarcella badia*	Undetermined	
Giant Salmonfly	*Pteronarcys californica*	Presence Expected	
American Salmonfly	*Pteronarcys dorsata*	Secure	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Short-winged Stonefly
Photo Credit: B Kondratieff

Goldenwing Dancer
Photo Credit: J Bailey

6.21 Caddisflies

The Trichoptera are mid-sized, moth-like insects with two sets wings. They may vary in color from orange to tan to green, and often appear to be hairy.

Caddisflies are best known for their building skills in their aquatic larval stage. Young caddisflies construct casings from a variety of materials including sand, gravel, plant debris, and sticks. These cases provide the larva with protection and camouflage until it is fully grown. Cases vary greatly in appearance depending on species and availability of materials. Although most caddisflies do construct these well known cases, there are some exceptions such as the free-living caddisflies (Rhyacophilidae), of which only two known species are found in the NWT.

After a pupating phase, caddisflies emerge from the water as fully grown, winged adults. In some areas, the onset of cooler weather triggers this emergence, ensuring that all caddisflies become active mating adults at the same time. After mating, eggs are laid underwater by the female. Caddisfly eggs will not hatch unless exposed to moisture. Most species have a life span of roughly one year, however, in cooler climates caddisflies may over-winter as pupae, or as eggs as they require more time to fully develop.

Due to its significant aquatic stage, caddisflies provide a good indication of water quality and ecosystem health. Adult caddisflies are important food sources for a number of animals such as fish, bats, birds, and amphibians.

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Speckled Peter
Photo Credit: MJ Hatfield

List 21. **Caddisflies**

There are 122 species of caddisflies confirmed present in the NWT. Three species are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Morse (2014).

Northern Casemaker Photo Credit: G Arbour

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Arthropoda – Insecta			**Arthropods – Insects**
Trichoptera – Apataniidae			Caddisflies – Early smoky-winged caddisflies
Coldloving Smokywing Caddisfly	*Apatania crymophila*	Secure	
Spotted Smokywing Caddisfly	*Apatania stigmatella*	Undetermined	
Belted Smokywing Caddisfly	*Apatania zonella*	Secure	
Trichoptera – Brachycentridae			Caddisflies – Humpless casemakers
American Grannom	*Brachycentrus americanus*	Undetermined	
Western Grannom	*Brachycentrus occidentalis*	Undetermined	
Icy Little Grannom	*Micrasema gelidum*	Undetermined	
Trichoptera – Glossosomatidae			Caddisflies – Saddle casemakers
Hidden Tongue Saddle Casemaker	*Glossosoma velonum*	Undetermined	
Trichoptera – Goeridae			Caddisflies – Weighted casemakers
Tunguska River Mourner	*Goera tungusensis*	Undetermined	
Trichoptera – Helicopsychidae			Caddisfliess – Snail-case caddisflies
Speckled Peter	*Helicopsyche borealis*	Undetermined	
Trichoptera – Hydropsychidae			Caddisflies – Netspinning caddisflies
Great Northern Spirit	*Arctopsyche grandis*	Undetermined	
Lagoda Lake Northern Spirit	*Arctopsyche ladogensis*	Undetermined	
Curvy Little-sister Caddisfly	*Cheumatopsyche campyla*	Undetermined	
Specious Little-sister Caddisfly	*Cheumatopsyche speciosa*	Undetermined	
Variable Water Spirit	*Hydropsyche alternans*	Undetermined	
Thundering Water Spirit	*Hydropsyche bronta*	Undetermined	
Mixed Water Spirit	*Hydropsyche confusa*	Undetermined	
Foolish Water Spirit	*Hydropsyche morosa*	Undetermined	
Slosson Water Spirit	*Hydropsyche slossonae*	Undetermined	
Elsi's Specter	*Parapsyche elsis*	Undetermined	
Trichoptera – Hydroptilidae			Caddisflies – Micro-caddisflies
Spotted Salt-and-Pepper Microcaddis	*Agraylea multipunctata*	Undetermined	
Similar Varicoloured Microcaddis	*Hydroptila consimilis*	Undetermined	
Ayama Anagramed Mayan Microcaddis	*Mayatrichia ayama*	Undetermined	
Spiny Yellowhair Microcaddis	*Ochrotrichia spinosa*	Undetermined	
Serrated Creamy Brown Microcaddis	*Oxyethira serrata*	Undetermined	
Trichoptera – Lepidostomatidae			Caddisflies – Bizarre caddisflies
Ashy Scalemouth Caddisfly	*Lepidostoma cinereum*	Undetermined	
Robed Scalemouth Caddisfly	*Lepidostoma togatum*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Trichoptera – Leptoceridae			Caddisflies – Long-horned caddisflies
Ringhorned Scalywing	*Ceraclea annulicornis*	Undetermined	
Black-veined Scalywing	*Ceraclea nigronervosa*	Undetermined	
Fringedwing Dancer	*Mystacides alafimbriata*	Undetermined	
Blue Dancer	*Mystacides azurea*	Undetermined	
Goldenwing Dancer	*Mystacides interjectus*	Undetermined	
Black Dancer	*Mystacides sepulchralis*	Undetermined	
Greedy Servant	*Oecetis avara*	Undetermined	
Immovable Servant	*Oecetis immobilis*	Undetermined	
Inconspicuous Servant	*Oecetis inconspicua*	Undetermined	
Rusty Servant	*Oecetis ochracea*	Undetermined	
Front Bronze	*Triaenodes frontalis*	Undetermined	
Jakutan Bronze	*Triaenodes jakutanus*	Undetermined	
Trichoptera – Limnephilidae			Caddisflies – Northern caddisflies
Two-spotted Backwater Caddisfly	*Anabolia bimaculata*	Undetermined	
Companionable Backwater Caddisfly	*Anabolia consocia*	Undetermined	
Pretty Northway Caddisfly	*Arctopora pulchella*	Undetermined	
Northwestern Twinpipe Caddisfly	*Asynarchus aldinus*	Undetermined	
Batchawana Twinpipe Caddisfly	*Asynarchus batchawanus*	Secure	
Lapland Twinpipe Caddisfly	*Asynarchus lapponicus*	Undetermined	
Mountain Twinpipe Caddisfly	*Asynarchus montanus*	Undetermined	
Changed Twinpipe Caddisfly	*Asynarchus mutatus*	Undetermined	
Magnificent Stopple Caddisfly	*Clistoronia magnifica*	Undetermined	
Blackfooted Giant Caddisfly	*Dicosmoecus atripes*	Undetermined	
Hiddenwing Giant Caddisfly	*Dicosmoecus obscuripennis*	Undetermined	
Congregating Antifly	*Ecclisomyia conspersa*	Undetermined	
Asking Script Caddisfly	*Grammotaulius interrogationis*	Secure	
Markedwing Script Caddisfly	*Grammotaulius signatipennis*	Undetermined	
Oldtimer Northern Caddisfly	*Grensia praeterita*	Secure	
Venerable Robe Caddisfly	*Hesperophylax designatus*	Secure	
Fautin's Softpipe Caddisfly	*Lenarchus fautini*	Undetermined	
Empty Softpipe Caddisfly	*Lenarchus vastus*	Undetermined	
Algal Summerflier	*Limnephilus algosus*	Undetermined	G1G2 – 2005
Silver Summerflier	*Limnephilus argenteus*	Undetermined	
Canadian Summerflier	*Limnephilus canadensis*	Undetermined	
Unequal Summmerflier	*Limnephilus dispar*	Undetermined	
Strange Summerflier	*Limnephilus externus*	Undetermined	
Free Summerflier	*Limnephilus extractus*	Undetermined	
Longthigh Summerflier	*Limnephilus femoralis*	Undetermined	
Windowed Summerflier	*Limnephilus fenestratus*	Undetermined	
Fischer's Summerflier	*Limnephilus fischeri*	Undetermined	G2G3 – 2005
Smoky Summerflier	*Limnephilus fumosus*	Undetermined	
Hagen's Summerflier	*Limnephilus hageni*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Glassy Summerflier	*Limnephilus hyalinus*	Undetermined	
Undivided Summerflier	*Limnephilus indivisus*	Undetermined	
Infernal Summerflier	*Limnephilus infernalis*	Undetermined	
Kennicott's Summerflier	*Limnephilus kennicotti*	Secure	
Greater Summerflier	*Limnephilus major*	Undetermined	
Blackfooted Summerflier	*Limnephilus nigriceps*	Undetermined	
Ornate Summerflier	*Limnephilus ornatus*	Undetermined	
Divided Summerflier	*Limnephilus partitus*	Undetermined	
Small Summerflier	*Limnephilus parvulus*	Undetermined	
Very Small Summerflier	*Limnephilus perpusillus*	Undetermined	
Painted Summerflier	*Limnephilus picturatus*	Secure	
Asian Summerflier	*Limnephilus samoedus*	Secure	
Sanson's Summerflier	*Limnephilus sansoni*	Undetermined	
Wormwood Summerflier	*Limnephilus santanus*	Undetermined	
Secluded Summerflier	*Limnephilus secludens*	Undetermined	
Silken Summerflier	*Limnephilus sericeus*	Undetermined	
Cinnamon Summerflier	*Limnephilus sublunatus*	Undetermined	
Northern Casemaker	*Nemotaulius hostilis*	Undetermined	
Inimical Scallop Caddisfly	*Onocosmoecus unicolor*	Undetermined	
Canadian Brightorder Caddisfly	*Phanocelia canadensis*	Undetermined	
Bergroth's Bearlover Caddisfly	*Philarctus bergrothi*	Undetermined	
Przewalski's Bearlover Caddisfly	*Philarctus przewalskii*	Undetermined	
Shining Oreo Caddisfly	*Platycentropus radiatus*	Undetermined	
Northern Engraver Caddisfly	*Psychoglypha subborealis*	Undetermined	
Belted Greatbrown Caddisfly	*Pycnopsyche subfasciata*	Undetermined	
Small-eyed Moss Sentinel	*Sphagnophylax meiops*	Undetermined	G2G3 – 2005
Trichoptera – Molannidae			Caddisflies – Hood casemakers
White Checkeredwing	*Molanna albicans*	Undetermined	
Yellow-horned Checkeredwing	*Molanna flavicornis*	Undetermined	
Dyed Checkeredwing	*Molannodes tinctus*	Undetermined	
Trichoptera – Philopotamidae			Caddisflies – Fingernet caddisflies
Gabriella's Autumn	*Wormaldia gabriella*	Undetermined	
Full Autumn	*Wormaldia moesta*	Undetermined	
Trichoptera – Phryganeidae			Caddisflies – Giant casemakers
Colored Divebomber	*Agrypnia colorata*	Undetermined	
Shrunken Divebomber	*Agrypnia deflata*	Undetermined	
Frozen Divebomber	*Agrypnia glacialis*	Undetermined	
Rejected Divebomber	*Agrypnia improba*	Undetermined	
Tired Divebomber	*Agrypnia obsoleta*	Undetermined	
Cold Divebomber	*Agrypnia pagetana*	Undetermined	
Straw Divebomber	*Agrypnia straminea*	Undetermined	
Clothed Divebomber	*Agrypnia vestita*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Crotch's Traveler	*Banksiola crotchi*	Undetermined	
Simple Craftsman	*Fabria inornata*	Undetermined	
Gray Rushsedge Casemaker	*Phryganea cinerea*	Undetermined	
Eyed Featherblade Casemaker	*Ptilostomis ocellifera*	Undetermined	
Halfgirdle Featherblade Casemaker	*Ptilostomis semifasciata*	Undetermined	
Trichoptera – Polycentropodidae			Caddisflies – Tubemaker caddisflies
Yellow Checker	*Holocentropus flavus*	Undetermined	
Broken Checker	*Holocentropus interruptus*	Undetermined	
Blackhorn Checker	*Holocentropus picicornis*	Undetermined	
Two-spotted Twilight Tubemaker	*Neureclipsis bimaculata*	Secure	
Grey Checker	*Plectrocnemia cinerea*	Undetermined	
Distant Checker	*Plectrocnemia remota*	Undetermined	
Smith Checker	*Plectrocnemia smithae*	Undetermined	
Trichoptera – Psychomyiidae			Caddisflies – Net tube caddisflies
Dinky Trumpetmaker	*Psychomyia flavida*	Undetermined	
Trichoptera – Rhyacophilidae			Caddisflies – Free-living caddisflies
Little Angel Olive Caddisfly	*Rhyacophila angelita*	Undetermined	
Brown Olive Caddisfly	*Rhyacophila brunnea*	Undetermined	
Trichoptera – Uenoidae			Caddisflies – Stonecase caddisflies
Woolly Dotwing	*Neophylax nacatus*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in this column. Global Consevation Concern: Rank of a species in the world as assessed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

6.22 Butterflies

Hoary Comma
Photo Credit: B Fournier

Together with the moths, butterflies form the insect Order Lepidoptera, or "scale-winged insects".

Butterfly eggs are laid on or near a preferred host plant. Upon hatching, the young caterpillars immediately begin feeding on the leaves and flowers. After shedding their exoskeltons five times and reaching maximum size, the caterpillars seek a safe place to pupate (form a chrysalis) and transform until they are ready to emerge as the winged adult. The adults lack the chewing mouthparts of the voracious caterpillar. Instead adults possess a long "tongue" suitable for drinking nectar from all but the deepest flowers. They also use this tongue to imbibe fluids from less appetizing sources such as mud, rotting fruit, dung and even carcasses. In fact these sources are often the best places to find mixed flocks of butterflies and lepidopterists employ mixtures of rotting fruit, beer and urine as attractants.

Habitat destruction and degradation are the usual causes of butterfly declines and losses in the world. Direct modification of habitats by humans is unlikely to have a major influence on NWT species however the indirect effects of our activities like pollution and climate change may be significant. The NWT is therefore an excellent place to study these global phenomena.

Butterflies are one of the best groups of animals to use as indicators of change because they are relatively easy to identify, their life histories and distributions are well known, and they often feed on specific plants, can multiply quickly and are highly mobile as adults.

Butterflies are the most widely recognized and charismatic group of insects. Most insects evoke feelings of fear, disgust or ambivalence, but the butterflies are universally revered for their beauty and docile nature. They are synonymous with flowers and warm, sunny days. Few animals, plants, jewels or human creations can match the magnificent array of colours and patterns they possess. Their beauty and diversity has attracted the attentions of people on a scale far beyond that of most other plants or animals.

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List 22. **Butterflies**

There are 92 species of butterflies confirmed present in the NWT; one of these species is alien to the NWT. Three species are vagrant and seen irregularly in the NWT. One species is expected to be present but not yet confirmed. None are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Pohl *et al*. (2016).

Canadian Swallowtail Photo Credit: D Johnson

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
				Arthropoda – Insecta Arthropods – Insects
Lepidoptera – Hesperiidae				Scale-winged insects – Skippers
Common Roadside Skipper	*Amblyscirtes vialis*	Presence Expected		
Arctic Skipper	*Carterocephalus palaemon*	Secure		
Dreamy Duskywing	*Erynnis icelus*	Secure		
Persius Duskywing	*Erynnis persius*	Secure		
Common Branded Skipper	*Hesperia comma*	Secure		
Long Dash Skipper	*Polites mystic*	Undetermined		
Peck's Skipper	*Polites peckius*	Undetermined		
Grizzled Skipper	*Pyrgus centaureae*	Secure		
Northern Cloudywing	*Thorybes pylades*	Undetermined		
Lepidoptera – Lycaenidae				Scale-winged insects – Gossamer-winged butterflies
Brown Elfin	*Callophrys augustinus*	Secure		
Western Pine Elfin	*Callophrys eryphon*	Secure		
Eastern Pine Elfin	*Callophrys niphon*	Secure		
Hoary Elfin	*Callophrys polios*	Secure		
Northern Spring Azure	*Celastrina lucia*	Secure		
Western Tailed Blue	*Cupido amyntula*	Secure		
Silvery Blue	*Glaucopsyche lygdamus*	Secure		
Dorcas Copper	*Lycaena dorcas*	Secure		
Bronze Copper	*Lycaena hyllus*	Undetermined		
American Copper	*Lycaena phlaeas*	Secure		
Arctic Blue	*Plebejus glandon*	Secure		
Northern Blue	*Plebejus idas*	Secure		
Cranberry Blue	*Plebejus optilete*	Secure		
Greenish Blue	*Plebejus saepiolus*	Secure		
Lepidoptera – Nymphalidae				Scale-winged insects – Brush-footed butterflies
Milbert's Tortoiseshell	*Aglais milberti*	Secure		
Mountain Fritillary	*Boloria alaskensis*	Secure		
Astarte Fritillary	*Boloria astarte*	Secure		
Meadow Fritillary	*Boloria bellona*	Secure		
Arctic Fritillary	*Boloria chariclea*	Secure		
Bog Fritillary	*Boloria eunomia*	Secure		
Freija Fritillary	*Boloria freija*	Secure		

Mourning Cloak Caterpillar Photo Credit: C Elliott

Mourning Cloak Photo Credit: B Fournier

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Frigga Fritillary	*Boloria frigga*	Secure		
Dingy Fritillary	*Boloria improba*	Secure		
Silver-bordered Fritillary	*Boloria myrina*	Secure		
Beringian Fritillary	*Boloria natazhati*	Sensitive		G3 – 2007
Polaris Fritillary	*Boloria polaris*	Secure		
Common Ringlet	*Coenonympha tullia*	Secure		
Monarch	*Danaus plexippus*	Vagrant		
Disa Alpine	*Erebia disa*	Secure		
Red-disked Alpine	*Erebia discoidalis*	Secure		
Branded Alpine	*Erebia fasciata*	Secure		
Reddish Alpine	*Erebia lafontainei*	Sensitive		
Mt. McKinley Alpine	*Erebia mackinleyensis*	Secure		
Magdalena Alpine	*Erebia magdalena*	Undetermined		
Taiga Alpine	*Erebia mancinus*	Secure		
Scree Alpine	*Erebia occulta*	Sensitive		
Yellow-dotted Alpine	*Erebia pawloskii*	Undetermined		
Ross's Alpine	*Erebia rossii*	Secure		
Four-dotted Alpine	*Erebia youngi*	Secure	ⓘ[3]	
Eyed Brown	*Lethe eurydice*	Undetermined	∃[3]	
Viceroy	*Limenitis archippus*	Undetermined		
White Admiral	*Limenitis arthemis*	Secure		
Mourning Cloak	*Nymphalis antiopa*	Secure		
Compton Tortoiseshell	*Nymphalis l-album*	Secure		
Sentinel Arctic	*Oeneis alpina*	Secure		
White-Veined Arctic	*Oeneis bore*	Secure		
Chryxus Arctic	*Oeneis chryxus*	Secure		
Jutta Arctic	*Oeneis jutta*	Secure		
Macoun's Arctic	*Oeneis macounii*	Undetermined		
Melissa Arctic	*Oeneis melissa*	Secure		
Polixenes Arctic	*Oeneis polixenes*	Secure		
Philip's Arctic	*Oeneis philipi*	Sensitive		
Uhler's Arctic	*Oeneis uhleri*	Secure		
Tawny Crescent	*Phyciodes batesii*	Undetermined		
Northern Crescent	*Phyciodes cocyta*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Field Crescent	*Phyciodes pulchella*	Secure		
Green Comma	*Polygonia faunus*	Secure		
Hoary Comma	*Polygonia gracilis*	Secure		
Grey Comma	*Polygonia progne*	Secure		
Satyr Comma	*Polygonia satyrus*	Secure		
Atlantis Fritillary	*Speyeria atlantis*	Undetermined		
Northwestern Fritillary	*Speyeria hesperis*	Secure		
Mormon Fritillary	*Speyeria mormonia*	Undetermined		
Red Admiral	*Vanessa atalanta*	Vagrant		
Painted Lady	*Vanessa cardui*	Vagrant		
Lepidoptera – Papilionidae				Scale-winged insects – Swallowtails
Canadian Tiger Swallowtail	*Papilio canadensis*	Secure		
Old World Swallowtail	*Papilio machaon*	Secure		
Eversmann's Parnassian	*Parnassius eversmanni*	Undetermined		
Phoebus Parnassian	*Parnassius phoebus*	Undetermined		
Lepidoptera – Pieridae				Scale-winged insects – Whites and sulphurs
Canada Sulphur	*Colias canadensis*	Secure		
Christina Sulphur	*Colias christina*	Secure		
Giant Sulphur	*Colias gigantea*	Secure		
Hecla Sulphur	*Colias hecla*	Secure		
Pink-edged Sulphur	*Colias interior*	Undetermined		
Labrador Sulphur	*Colias nastes*	Secure		
Palaeno Sulphur	*Colias palaeno*	Secure		
Pelidne Sulphur	*Colias pelidne*	Secure		
Clouded Sulphur	*Colias philodice*	Secure	ⓘ[5]	
Booth's Sulphur	*Colias tyche*	Secure		
Large Marble	*Euchloe ausonides*	Secure		
Northern Marble	*Euchloe creusa*	Secure		
Green Marble	*Euchloe naina*	Undetermined		
Arctic White	*Pieris angelika*	Secure		
Mustard White	*Pieris oleracea*	Secure		
Cabbage White	*Pieris rapae*	Alien		
Western White	*Pontia occidentalis*	Secure		
Spring White	*Pontia sisymbrii*	Secure		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Northern Blue
Photo Credit: B Fournier

Hummingbird Clearwing Moth
Photo Credit: H Selzler

6.23 Macro-moths

Moths and butterflies together form the Order Lepidoptera (the "scale-winged" insects).

Lepidoptera are one of the five largest insect orders, with an estimated 300,000 to 400,000 species worldwide (about 160,000 have been discovered and named so far). Moths make up about 95% of the Lepidoptera globally. The NWT is home to at least 600 species of moths and there are many more species as yet unrecorded. The list below includes only the macro-moths known to be present in the NWT; micro-moths will be ranked in future reports.

Unlike butterflies, relatively few moths can be easily identified in the field or from a photograph. Instead most require a concerted effort to collect then careful preparation and identification by a skilled taxonomist.

Often vilified and commonly characterized as the drab and uninteresting cousins of butterflies, the moths are anything but. What moths lack in bright and vibrant colours is easily made up for by the incredible variety of textures, shapes, patterns, subtle earth tones and hairs they employ to blend into their surroundings.

Adult moths rely on camouflage to hide from birds and other visual predators during the day. A few species that are active in daylight are brightly coloured and boldly patterned to advertise toxins sequestered within them. Other species flash eye spots or bright hindwings when disturbed to startle or confuse potential predators long enough to escape. At night, bats are major predators and moths employ evasive maneuvers and other tricks to escape them.

Being active at night limits the effectiveness of colours as a warning or for attracting mates. Attracting a mate is accomplished using pheromones and for this they have very sensitive chemical sensors on their antennae to locate mates in the dark and at great distances. Flying at night also requires adaptations to function in cool temperatures. Effective camouflage allows moths to rest safely in exposed positions like tree trunks to absorb heat during the day and the abundant hairs on the body create an insulating layer to hold this warmth into the night.

Like butterflies, moths lay eggs on or near suitable host plants upon which the young caterpillars will feed and grow. Birds and many species of insects seek out caterpillars to eat or to act as hosts for their young. Caterpillars employ camouflage, toxic and distasteful chemicals, hairs, bristles, eye spots and various behaviours to avoid this vast array of enemies. After a series of moults the larvae enter the pupal stage, often wrapping itself within a silk cocoon. Although often thought of as dormant because it doesn't eat or move, the pupa is very actively rearranging its tissues into a magnificent, winged marvel. Once free of the pupal skin the adult moth must pump up its folded wings before they harden. If all goes well the moth will go off in search of mates and host plants on which to start the process again.

In northern regions like the NWT with short growing seasons, the development of a moth from egg to adult often requires several years. The Arctic moth (*Gynaephora groenlandica*) can take up to 10 or more years in the high Arctic to develop from egg to adult. The additional challenge of short nights in the North means that many species that are nocturnal elsewhere, have to adapt to being active in the daytime here.

At present our knowledge of the NWT moths is limited mostly to the larger species (also referred to as 'macro-moths'). In the previous edition of this report, only four selected groups of macro-moths were ranked: the tiger moths, the underwing moths, the silk moths, and the Sphinx moths. In the present report, the groups above have been re-examined and all families of macro-moths were included.

We know very little about most macro-moth species in the NWT. Many species are at their northern limit in southern NWT. Some northern species have specialized habitat or host plant requirements could be at risk from climate change. Only with more studies on both moths and their host plants can we better rank their biological status in the NWT.

Moths are less showy and more difficult to identify than butterflies but they are nonetheless worthy of our attention. Once located, either by careful observation or at lights, moths are usually easy to approach and make excellent subjects for macro photography. They are also good candidates for teaching insect development and metamorphosis. Caterpillars can be reared on the plant species they are found on and with time will pupate and emerge as adult moths.

Many species of moths have not even been named yet so your photo might just lead to your name being given to a new species!

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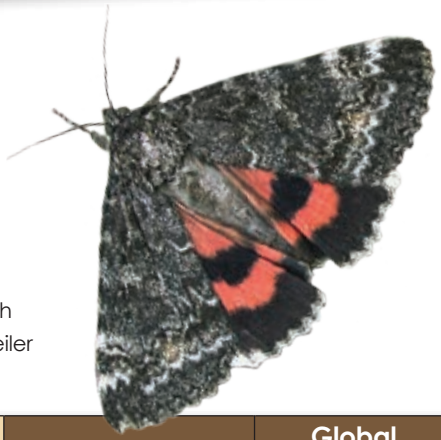
Salt-Marsh Tiger Moth
Photo Credit: G Anweiler

List 23. **Macro-moths**

There are 300 species of macro-moths confirmed present in the NWT; one of these species is alien to the NWT. Four species are expected to be present but not yet confirmed. Two species are of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, sub-family, then by scientific species name. Taxonomy follows Pohl *et al*. (2016).



Briseis Underwing Moth
Photo Credit: G Anweiler

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Arthropoda – Insecta				**Arthropods – Insects**
Lepidoptera – Drepanidae				Scale-winged insects – Hooktip moths
Arched Hooktip Moth	*Drepana arcuata*	Undetermined		
Rose Hooktip Moth	*Oreta rosea*	Undetermined		
Lepidoptera – Erebidae – Arctiinae				Scale-winged insects – Tiger moths
Arctic Tiger Moth	*Acerbia alpina*	Undetermined		
Rockslide Tger Moth	*Acsala anomala*	Undetermined		
Kluane Tiger Moth	*Arctia brachyptera*	Undetermined		G1G3 – 2010
Opulent Tiger Moth	*Arctia opulenta*	Undetermined		
Yellow-collared Tiger Moth	*Cisseps fulvicollis*	Undetermined		
Little White Lichen Moth	*Clemensia albata*	Presence Expected	∃[6]	
Alberta Dodia Tiger Moth	*Dodia albertae*	Undetermined		
Salt Marsh Tiger Moth	*Estigmene acrea*	Undetermined	∃[4]	
Margo Tiger Moth	*Grammia margo*	Undetermined		
Philip's Tiger Moth	*Grammia philipiana*	Undetermined		G3 – 2002
Quensel's Tiger Moth	*Grammia quenseli*	Secure		
Bog Tiger Moth	*Grammia speciosa*	Undetermined		
William's Tiger Moth	*Grammia williamsii*	Undetermined		
Yukon Tiger Moth	*Grammia yukona*	Undetermined		
Steppe Tiger Moth	*Holarctia obliterata*	Undetermined		
Smoky Tiger Moth	*Manulea bicolor*	Undetermined		
Subarctic Tiger Moth	*Pararctia lapponica*	Undetermined		
Mountain Tiger Moth	*Pararctia yarrowii*	Undetermined		
Black-and-White Tiger Moth	*Parasemia plantaginis*	Undetermined		
Ruby Tiger Moth	*Phragmatobia fuliginosa*	Undetermined		
St. Lawrence Tiger Moth	*Platarctia parthenos*	Undetermined	∃[4]	
Salmon Virbia Tiger Moth	*Virbia ferruginosa*	Undetermined		
Lepidoptera – Erebidae – Boletobiinae				Scale-winged insects – Snout moths
Pale-edged Snout Moth	*Mycterophora inexplicata*	Undetermined		
Lepidoptera – Erebidae – Erebinae				Scale-winged insects – Underwing moths and relatives
Clover Looper Moth	*Caenurgina crassiuscula*	Undetermined		
Briseis Underwing Moth	*Catocala briseis*	Undetermined		
White Underwing Moth	*Catocala relicta*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Once-married Underwing	*Catocala unijuga*	Undetermined	#	
Little Arches Moth	*Drasteria petricola*	Undetermined		
Toothed Somberwing Moth	*Euclidia cuspidea*	Undetermined		
Lepidoptera – Erebidae – Herminiinae				Scale-winged insects – Litter moths
Pale Phalaenostola Moth	*Phalaenostola metonalis*	Undetermined		
Wavy-lined Zanclognatha Moth	*Zanclognatha jacchusalis*	Presence Expected		
Lepidoptera – Erebidae – Lymantriinae				Scale-winged insects – Tussock moths
Arctic Moth	*Gynaephora groenlandica*	Undetermined		
Ross's Moth	*Gynaephora rossii*	Secure		
Rusty Tussock Moth	*Orgyia antiqua*	Undetermined		
Lepidoptera – Erebidae – Scoliopteryginae				Scale-winged insects – Herard moths
The Herald	*Scoliopteryx libatrix*	Undetermined		
Lepidoptera – Geometridae – Archiearinae				Scale-winged insects – Archaic geometer moths
Infant Moth	*Archiearis infans*	Undetermined		
Lepidoptera – Geometridae – Ennominae				Scale-winged insects – Ennomine geometer moths
Forbe's Straw Belle Moth	*Aspitates forbesi*	Undetermined		
Finnish Straw Belle Moth	*Aspitates orciferaria*	Secure		
Taylor's Straw Belle Moth	*Aspitates taylori*	Undetermined		
Pepper and Salt Geometer	*Biston betularia*	Undetermined		
Boreal Wave Moth	*Cabera borealis*	Undetermined		
Common Wave Moth	*Cabera exanthemata*	Undetermined		
Pink-striped Willow Spanworm Moth	*Cabera variolaria*	Undetermined		
Pale Beauty Moth	*Campaea perlata*	Undetermined		
Striped Granite Moth	*Digrammia denticulata*	Undetermined		
Dark-bordered Granite Moth	*Digrammia neptaria*	Undetermined		
Northern Granite Moth	*Digrammia rippertaria*	Undetermined		
Maple Spanworm	*Ennomos magnaria*	Undetermined		
Black-banded Orange Moth	*Epelis truncataria*	Undetermined		
Macguffin's Annulet Moth	*Gnophos macguffini*	Undetermined		
Sulphur Moth	*Hesperumia sulphuraria*	Undetermined		
Duck Geometer Moth	*Macaria anataria*	Undetermined		
Split-lined Itame Angle Moth	*Macaria bitactata*	Undetermined		
Forest Looper Moth	*Macaria boreata*	Undetermined		
Rannoch Looper Moth	*Macaria brunneata*	Undetermined		
Decorated Geometer Moth	*Macaria decorata*	Undetermined		
False Bruce Spanworm Moth	*Macaria loricaria*	Undetermined		
Peacock Moth	*Macaria notata*	Undetermined		
Occiduaria Geometer Moth	*Macaria occiduaria*	Undetermined		
Larch Looper Moth	*Macaria sexmaculata*	Undetermined		
Signed Looper Moth	*Macaria signaria*	Undetermined		
Dark Metanema Moth	*Metanema determinata*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Pale Matanema Moth	*Metanema inatomaria*	Undetermined		
Lemon Umber Moth	*Plagodis phlogosaria*	Undetermined		
Barred Umber Moth	*Plagodis pulveraria*	Undetermined		
Alien-looking Probole Moth	*Probole alienaria*	Undetermined		
Friendly Propole Moth	*Probole amicaria*	Undetermined		
Virgin Moth	*Protitame virginalis*	Undetermined		
Porcelain Gray Moth	*Protoboarmia porcelaria*	Undetermined		
Sharp-lined Yellow Moth	*Sicya macularia*	Undetermined		
Lepidoptera – Geometridae – Geometrinae				Scale-winged insects – Geometer moths
Plain Emerald Moth	*Mesothea incertata*	Undetermined		
Lepidoptera – Geometridae – Larentiinae				Scale-winged insects – Larentine geometer moths
Many-lined Carpet Moth	*Anticlea multiferata*	Undetermined		
Alpine Carpet Moth	*Carsia sororiata*	Undetermined		
Suspected Carpet Moth	*Dysstroma brunneata*	Undetermined		
Dark Marbled Carpet Moth	*Dysstroma citrata*	Undetermined		
Obscure Carpet Moth	*Dysstroma infuscata*	Alien		
Kidluitata Carpet Moth	*Entephria kidluitata*	Undetermined		
Variable Carpet Moth	*Entephria multivagata*	Undetermined		
Polar Carpet Moth	*Entephria polata*	Undetermined		
Eyed Carpet Moth	*Entephria punctipes*	Undetermined		
White-banded Toothed Carpet Moth	*Epirrhoe alternata*	Undetermined		
Sperry's Toothed Carpet Moth	*Epirrhoe sperryi*	Undetermined		
Shrub Tundra Fall Moth	*Epirrita undulata*	Undetermined		
Barred Yellow Moth	*Eulithis propulsata*	Undetermined		
Chevron Moth	*Eulithis testata*	Undetermined		
Northwestern Phoenix Moth	*Eulithis xylina*	Undetermined		
Sharp-angled Carpet Moth	*Euphyia intermediata*	Undetermined		
Articulated Larch Pug Moth	*Eupithecia annulata*	Undetermined		
Intricate Pug Moth	*Eupithecia intricata*	Undetermined		
Larch Pug Moth	*Eupithecia lariciata*	Undetermined		
Marsh Pug Moth	*Eupithecia pygmaeata*	Undetermined		
Satyr Pug Moth	*Eupithecia satyrata*	Undetermined		
July Highflyer Moth	*Hydriomena furcata*	Undetermined		
Renounced Highflyer Moth	*Hydriomena renunciata*	Undetermined		
White-dressed Bigwing Moth	*Lobophora canavestita*	Undetermined		
Large Bigwing Moth	*Lobophora magnoliatoidata*	Undetermined		
Snow-powdered Bigwing Moth	*Lobophora nivigerata*	Undetermined		
George's Carpet Moth	*Plemyria georgii*	Undetermined		
Seal Moth	*Psychophora phocata*	Undetermined		
Sabine's Moth	*Psychophora sabini*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Argent and Sable Moth	*Rheumaptera hastata*	Undetermined		
White-banded Black Moth	*Rheumaptera subhastata*	Undetermined		
Scallop Shell Moth	*Rheumaptera undulata*	Undetermined		
White-banded Carpet Moth	*Spargania luctuata*	Undetermined		
Double-banded Carpet Moth	*Spargania magnoliata*	Undetermined		
Topaz Carpet Moth	*Stamnodes topazata*	Undetermined		
White Striped Black Moth	*Trichodezia albovittata*	Undetermined		
Scraped Carpet Moth	*Xanthorhoe abrasaria*	Undetermined		
Baffin Carpet Moth	*Xanthorhoe baffinensis*	Undetermined		
Boreal Carpet Moth	*Xanthorhoe borealis*	Undetermined		
Red Twin-spot Carpet Moth	*Xanthorhoe ferrugata*	Undetermined		
Labrador Carpet Moth	*Xanthorhoe labradorensis*	Undetermined		
Laggan Carpet Moth	*Xanthorhoe lagganata*	Undetermined		
Peppered Carpet Moth	*Xanthorhoe ramaria*	Undetermined		
Alpine Looper Moth	*Zenophleps alpinata*	Undetermined		
Lignicolorata Looper Moth	*Zenophleps lignicolorata*	Presence Expected		
Lepidoptera – Geometridae – Sterrhinae				Scale-winged insects – Wave moths
Sweetfern Geometer Moth	*Cyclophora pendulinaria*	Undetermined		
Chickweed Geometer	*Haematopis grataria*	Undetermined		
Round-winged Wave Moth	*Idaea rotundopennata*	Undetermined		
Pointed-winged Wave Moth	*Scopula ancellata*	Undetermined		
Cajander's Geometer Moth	*Scopula cajanderi*	Undetermined		
Frigid Wave Moth	*Scopula frigidaria*	Secure		
Soft-lined Wave Moth	*Scopula inductata*	Undetermined		
Simple Wave Moth	*Scopula junctaria*	Undetermined		
Sentinel Wave Moth	*Scopula sentinaria*	Undetermined		

St. Lawrence Tiger Moth Photo Credit: B Fournier

Forest Tent Caterpillar Photo Credit: G Turnbull

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Lepidoptera – Hepialidae				Scale-winged insects – Ghost moths
Four-spotted Ghost Moth	*Sthenopis purpurascens*	Undetermined		
Lepidoptera – Lasiocampidae				Scale-winged insects – Tent caterpilars
Western Tent Caterpillar	*Malacosoma californica*	Undetermined		
Forest Tent Caterpillar	*Malacosoma disstria*	Secure		
Lepidoptera – Noctuidae – Acontiinae				Scale-winged insects – Acontine owlet moths
Narrow-winged Midget	*Tarache augustipennis*	Undetermined		
Lepidoptera – Noctuidae – Acronictinae				Scale-winged insects – Dagger moths
Gray Dagger	*Acronicta grisea*	Undetermined		
Impressed Dagger	*Acronicta impressa*	Undetermined		
Lupine Dagger	*Acronicta lupini*	Undetermined		
Millar Dagger	*Acronicta vulpina*	Undetermined		
Lepidoptera – Noctuidae – Agaristinae				Scale-winged insects – Forester moths
Langton's Forester Moth	*Alypia langtoni*	Undetermined		
MacCulloch's Forester Moth	*Androloma maccullochii*	Undetermined		
Lepidoptera – Noctuidae – Eustrotiinae				Scale-winged insects – Eustrotine owlet moths
Pale Glyph	*Protodeltote albidula*	Undetermined		
Lepidoptera – Noctuidae – Heliothinae				Scale-winged insects – Heliothine owlet moths
Flax Bollworm Moth	*Heliothis ononis*	Undetermined		
Lepidoptera – Noctuidae – Noctuinae				Scale-winged insects – Dart and cutworm moths
Red Cutwom Moth	*Abagrotis placida*	Undetermined		
Bracketed Dart Moth	*Actebia balanitis*	Undetermined		
Black Army Cutworm Moth	*Actebia fennica*	Undetermined		
Collared Dart Moth	*Agnorisma bugrai*	Undetermined		
Rue Agrotis Moth	*Agrotis ruta*	Undetermined		
Old Man Dart Moth	*Agrotis vetusta*	Undetermined		
American Ear Moth	*Amphipoea americana*	Undetermined		
Green Arches Moth	*Anaplectoides prasina*	Undetermined		
Dappled Dart Moth	*Anaplectoides pressus*	Undetermined		
Black Eye Anarta Moth	*Anarta nigrolunata*	Undetermined		
The Nutmeg Moth	*Anarta trifolii*	Undetermined		
Poplar Catkin Moth	*Anathix puta*	Undetermined		
Canadian Giant Moth	*Andropolia contacta*	Undetermined		
Contracting Hadenine Moth	*Anhimella contrahens*	Undetermined		
Prairie Cutworm Moth	*Apamea alia*	Undetermined		
Yellow-headed Cutworm Moth	*Apamea amputatrix*	Undetermined		
Deliberate Cutworm Moth	*Apamea cogitata*	Undetermined		
Southern Quaker Moth	*Apamea commoda*	Undetermined		
True Glassy Cutworm Moth	*Apamea devastator*	Undetermined		
Lined Quaker Moth	*Apamea inficita*	Undetermined		
Dark Cutworm Moth	*Apamea niveivenosa*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Sand Dune Cutworm Moth	*Apamea scoparia*	Undetermined		
Finland Cutworm Moth	*Apamea zeta*	Undetermined		
Willow Pheasant Moth	*Brachylomia algens*	Undetermined		
Civil Rustic Moth	*Caradrina montana*	Undetermined		
Willow Dart Moth	*Cerastis salicarum*	Undetermined		
Stirrup and Spear Moth	*Chersotis juncta*	Undetermined		
Yellowmarked Coranarta Moth	*Coranarta luteola*	Undetermined		
Large Yellowmarked Coranarta Moth	*Coranarta macrostigma*	Undetermined		
Wheat Head Armyworm	*Dargida diffusa*	Undetermined		
Dislocated Dart Moth	*Diarsia dislocata*	Undetermined		
Early Quaker Moth	*Egira dolosa*	Undetermined		
Pale Enargia Moth	*Enargia decolor*	Undetermined		
Birch-aspen Moth	*Enargia infumata*	Undetermined		
Alberta Quaker Moth	*Eremobina claudens*	Undetermined		
Close-marked Eurois Moth	*Eurois astricta*	Undetermined		
Great Dart Moth	*Eurois occulta*	Undetermined		
Wandering Dart Moth	*Euxoa aberrans*	Undetermined		
False Euxoa Moth	*Euxoa adumbrata*	Undetermined		
Army Cutworm Moth	*Euxoa auxiliaris*	Undetermined		
Basal Euxoa Moth	*Euxoa basalis*	Undetermined		
Chestnut Euxoa Moth	*Euxoa castanea*	Undetermined		
Chruchill Euxoa Moth	*Euxoa churchillensis*	Undetermined		
Hairy Euxoa Moth	*Euxoa comosa*	Undetermined		
Coast Dart Moth	*Euxoa cursoria*	Undetermined		
Rubbed Dart Moth	*Euxoa detersa*	Undetermined		
Dissona Euxoa Moth	*Euxoa dissona*	Undetermined		
Divergent Dart Moth	*Euxoa divergens*	Undetermined		
Yellowish Euxoa Moth	*Euxoa flavicollis*	Undetermined		
Furtive Dart Moth	*Euxoa furtivus*	Undetermined		
Triste Euxoa Moth	*Euxoa infausta*	Undetermined		
Steppe Slope Euxoa Moth	*Euxoa maimes*	Undetermined		
Manitoba Euxoa Moth	*Euxoa manitobana*	Undetermined		
Reaper Dart Moth	*Euxoa messoria*	Undetermined		
Mulders' Dart Moth	*Euxoa muldersi*	Undetermined		
Armed Euxoa Moth	*Euxoa munis*	Undetermined		
Tundra Euxoa Moth	*Euxoa nomas*	Undetermined		
Our Euxoa Moth	*Euxoa nostra*	Undetermined		
Red-Backed Cutworm Moth	*Euxoa ochrogaster*	Undetermined		
Ultra Olive Euxoa Moth	*Euxoa perolivalis*	Undetermined		
Grassland Euxoa Moth	*Euxoa pestula*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Ridings Dart Moth	*Euxoa ridingsiana*	Undetermined		
White Cutworm Moth	*Euxoa scandens*	Undetermined		
Slave Dart Moth	*Euxoa servitus*	Undetermined		
Tessellata Dart Moth	*Euxoa tessellata*	Undetermined		
Large Pale Gray Moth	*Euxoa tristicula*	Undetermined		
Westerman's Euxoa Moth	*Euxoa westermanni*	Undetermined		
Borean Cutworm Moth	*Feltia boreana*	Undetermined		
Dingy Cutworm Moth	*Feltia jaculifera*	Undetermined		
Delicate Cutworm Moth	*Feltia mollis*	Undetermined		
Wood Cutworm Moth	*Feltia woodiana*	Undetermined		
Yosemite Brocade	*Fishia yosemitae*	Undetermined		
Double Dart Moth	*Graphiphora augur*	Undetermined		
Iris Rover Moth	*Hillia iris*	Undetermined		
Scurfy Quaker Moth	*Homorthodes furfurata*	Undetermined		
Basistriga Owlet Moth	*Hypocoena basistriga*	Undetermined		
Rufostrigata Owlet Moth	*Hypocoena rufostrigata*	Undetermined		
Garden Arches Moth	*Lacanobia radix*	Undetermined		
Brindled Arches Moth	*Lacinipolia lorea*	Undetermined		
Olive Arches Moth	*Lacinipolia olivacea*	Undetermined		
Bristly Cutworm Moth	*Lacinipolia renigera*	Undetermined		
Raven-black Moth	*Lasionycta coracina*	Undetermined		
Pale Arches Moth	*Lasionycta leucocycla*	Undetermined		
Staudinger's Moth	*Lasionycta staudingeri*	Undetermined		
Sub-smokey Moth	*Lasionycta subfumosa*	Undetermined		
American Peasant Moth	*Lithomoia germana*	Undetermined		
Distant Pinion Moth	*Lithophane amanda*	Undetermined		
Large Grey Pinion Moth	*Lithophane georgii*	Undetermined		
Nameless Pinion Moth	*Lithophane innominata*	Undetermined		
Teneral Rover Moth	*Mniotype tenera*	Undetermined		
Lesser Wainscot Moth	*Mythimna oxygala*	Undetermined		
Dusky Brocade Moth	*Neoligia subjuncta*	Undetermined		
Bronzed Cutworm Moth	*Nephelodes minians*	Undetermined		
Cross Shear Moth	*Papestra cristifera*	Undetermined		
Square Shear Moth	*Papestra quadrata*	Undetermined		
Keele River Moth	*Parabarrovia keelei*	Undetermined		
Littoral Owlet Moth	*Paradiarsia littoralis*	Undetermined		
Suspected Moth	*Parastichtis suspecta*	Undetermined		
Purple Arches Moth	*Polia purpurissata*	Undetermined		
Richardson's Polia Moth	*Polia richardsoni*	Undetermined		
Prognorisma Moth	*Prognorisma substrigata*	Undetermined		
Red-breasted Dart Moth	*Protolampra rufipectus*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Slender Pseudo Cutworm Moth	*Pseudohermonassa tenuicula*	Undetermined		
Dock Rustic Moth	*Resapamea passer*	Undetermined		
W-marked Cutworm Moth	*Spaelotis clandestina*	Undetermined		
Pink-barred Sallow Moth	*Xanthia tatago*	Undetermined		
Vaccinium Xestia Moth	*Xestia albuncula*	Undetermined		
Bryant's Xestia Moth	*Xestia bryanti*	Undetermined		
Lesser Black-letter Dart Moth	*Xestia c-nigrum*	Undetermined		
Fir Xestia Moth	*Xestia homogena*	Undetermined		
Grand Xestia Moth	*Xestia imperita*	Undetermined		
Inuit Xestia Moth	*Xestia inuitica*	Undetermined		
Lax Dart Moth	*Xestia laxa*	Undetermined		
Lupin Xestia Moth	*Xestia lupa*	Undetermined		
Mixta Xestia Moth	*Xestia mixta*	Undetermined		
Boggy Tundra Xestia Moth	*Xestia okakensis*	Undetermined		
Gray Spruce Cutworm Moth	*Xestia perquiritata*	Undetermined		
Bearberry Xestia Moth	*Xestia quieta*	Undetermined		
Smith's Dart Moth	*Xestia smithii*	Undetermined		
Showy Xestia Moth	*Xestia speciosa*	Undetermined		
Shelter Xestia Moth	*Xestia tecta*	Undetermined		
High Arctic Xestia Moth	*Xestia thula*	Undetermined		
Ursus Xestia Moth	*Xestia ursae*	Undetermined		
Wocke's Xestia Moth	*Xestia wockei*	Undetermined		
Beringia Xestia Moth	*Xestia woodi*	Undetermined		

Forest Tent Caterpillar
Photo Credit: D Johnson

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Lepidoptera – Noctuidae – Oncocnemidinae				Scale-winged insects – Swallow moths
Toothed Apharetra	*Sympistis dentata*	Undetermined		
Funeral Sympistis Moth	*Sympistis funebris*	Undetermined		
Storm Sympistis Moth	*Sympistis heliophila*	Undetermined		
Lapland Sympistis Moth	*Sympistis lapponica*	Undetermined		
Swedish Sympistis Moth	*Sympistis zetterstedtii*	Undetermined		
Lepidoptera – Noctuidae – Plusiinae				Scale-winged insects – Looper moths
Two-spotted Looper Moth	*Autographa bimaculata*	Undetermined		
Northern Autographa Moth	*Autographa buraetica*	Undetermined		
Dark-spotted Looper	*Diachrysia aereoides*	Undetermined		
Putnam's Looper Moth	*Plusia putnami*	Undetermined		
White-streaked Looper Moth	*Plusia venusta*	Undetermined		
Delphinium Leaflier Moth	*Polychrysia esmeralda*	Undetermined		
Alias Looper Moth	*Syngrapha alias*	Undetermined		
Alticola Looper Moth	*Syngrapha alticola*	Undetermined		

White Underwing Moth
Photo Credit: G Anweiler

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Boreal Looper Moth	*Syngrapha borea*	Undetermined		
Diasema Looper Moth	*Syngrapha diasema*	Undetermined		
Mountain Beauty Looper Moth	*Syngrapha ignea*	Undetermined		
Question Mark Looper Moth	*Syngrapha interrogationis*	Undetermined		
Small Gamma Looper Moth	*Syngrapha microgamma*	Undetermined		
Dusky Silver Y Looper Moth	*Syngrapha octoscripta*	Undetermined		
Parilis Looper Moth	*Syngrapha parilis*	Undetermined		
Blue Metal-marked Looper Moth	*Syngrapha selecta*	Undetermined		
Green-marked Looper Moth	*Syngrapha viridisigma*	Undetermined		
Lepidoptera – Nolidae			Scale-winged insects – Nolid moths	
Ceanothus Nola	*Nola minna*	Undetermined		
Frigid Owlet Moth	*Nycteola frigidana*	Undetermined		
Lepidoptera – Notodontidae			Scale-winged insects – Prominent moths	
Sigmoid Prominent	*Clostera albosigma*	Undetermined		
Apical Prominent Moth	*Clostera apicalis*	Undetermined		
Gray Furcula Moth	*Furcula cinerea*	Undetermined		
Northern Finned Prominent Moth	*Notodonta torva*	Undetermined		
Lepidoptera – Saturniidae			Scale-winged insects – Silkmoths	
Luna Moth	*Actias luna*	Undetermined	#	
Polyphemus Moth	*Antheraea polyphemus*	Undetermined	#	
Glover's Silkmoth	*Hyalophora gloveri*	Undetermined		
Lepidoptera – Sphingidae			Scale-winged insects – Sphinx moths	
Snowberry Clearwing Moth	*Hemaris diffinis*	Undetermined		
Hummingbird Clearwing Moth	*Hemaris thysbe*	Undetermined		
Bedstraw Hawk Moth	*Hyles gallii*	Undetermined		
Yellow-banded Sphinx Moth	*Proserpinus flavofasciata*	Undetermined		
Modest Sphinx Moth	*Pachysphinx modesta*	Undetermined	#	
One-eyed Sphinx	*Smerinthus cerisyi*	Undetermined		
Twin-spotted Sphinx	*Smerinthus jamaicensis*	Presence Expected	∃[6]	
Birch Sphinx Moth	*Sphinx luscitiosa*	Undetermined		
Northern Apple Sphinx	*Sphinx poecila*	Undetermined	#	

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

American Emerald
Photo Credit: J Hollett

6.24 Dragonflies and Damselflies

Dragonflies and damselflies belong to the order Odonata, meaning "the toothy ones". Both adults and larvae chew up their living prey. However, they are harmless to people and they neither bite nor sting. They are sometimes mistakenly thought to be attacking as they gather up the black flies, mosquitoes, deer flies and horse flies that are the real attackers. The Odonates have large wings, elongate bodies and small bristle-like antennae; this is a very distinctive group of insects made up of two kinds. Dragonflies hold their wings horizontally and have a compact head with the eyes separated by a small space less than their own width. Damselflies differ in having their wings held above the body (vertically) when at rest and they have a large space between the eyes, greater than their own width.

Flying adults lay eggs in or near the water. The tiny eggs hatch in a week or overwinter, hatching in the spring. The brown/green aquatic larvae, called nymphs, have a clawed lower lip that can be projected at a speed of 1/100th of a second to capture prey. Nymphs grow by molting their skin 8-17 times. Mature nymphs then leave the water and expand by swallowing air. This splits the skin and a pale creature emerges. The wings at first appear shriveled, but they soon expand. At the same time the body hardens and colours develop. Within a few hours of emerging from the water, the dragonfly is full-grown and launches on its first flight. Males of some species defend territories and others indulge in complex mating flights. When mating, the male holds the front of the female with the tip of his abdomen.

Species in the NWT range in size from the very large lake darner (8 cm long) to the delicate metallic green sedge sprite (3 cm long). Some species are found only in specific aquatic habitats. For example, nymphs of the boreal snakestail occur only in fast flowing water including rapids and waterfalls. The nymphs of the white-faced meadowhawk inhabit shallow temporary pools. Most of the NWT dragonflies occur in the boreal forest zone and only a few species such as the sedge darner and the zigzag darner extend out onto the tundra.

Dragonflies and damselflies have become symbolic of the natural world to many people. They are used to represent nature in art, advertisement, and company and program logos. They are monitored as indicators of the state of the environment. They consume pest insects including biting flies. They also have a major impact on ecosystems as both predators and prey. Numerous fish and birds, including young of the endangered whooping crane, will feed extensively on the aquatic larvae of dragonflies.

There is still much to be learned about NWT dragonflies. If you are visiting or living in any NWT region, you may be able to help document the dragonfly fauna of the North. Photos are welcome. Collecting specimens may be done but only if you see that the population is large. Collected insects should be placed individually with wings folded over the back in an envelope. The date, location and collector's name should be noted on the envelope. Next the envelopes should be frozen, put in a dry place to dry out and shipped in a box to prevent damage. They may be shipped to ENR. Contact NWTbugs@gov.nt.ca for more tips and a mailing address.

Dr. Paul Catling
Agriculture and Agri-Food Canada
Ottawa, ON

Four-spotted Skimmer Photo Credit: H Selzler

List 24. **Dragonflies and Damselflies**

There are 43 species of dragonflies and damselflies confirmed present in the NWT. An additional seven species are expected to be present. One species is of global conservation concern. Species are listed alphabetically according to scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Abbott (2015).

Boreal Whiteface – female

Photo Credit: B Fournier

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Arthropoda – Insecta				**Arthropods – Insects**
Odonata – Anisoptera – Aeshnidae				Dragonflies – Darners
Canada Darner	*Aeshna canadensis*	Undetermined		
Lake Darner	*Aeshna eremita*	Secure		
Variable Darner	*Aeshna interrupta*	Secure		
Sedge Darner	*Aeshna juncea*	Secure		
Paddle-tailed Darner	*Aeshna palmata*	Presence Expected	∃[6]	
Azure Darner	*Aeshna septentrionalis*	Secure		
Zigzag Darner	*Aeshna sitchensis*	Secure		
Subarctic (Muskeg) Darner	*Aeshna subarctica*	Secure		
Black-tipped Darner	*Aeshna tuberculifera*	Presence Expected	∃[6]	
Shadow Darner	*Aeshna umbrosa*	Secure		
Odonata – Anisoptera – Corduliidae				Dragonflies – Emeralds
American Emerald	Cordulia shurtleffii	Secure		
Ringed Emerald	*Somatochlora albicincta*	Secure		
Father Robert's Emerald	*Somatochlora brevicincta*	Presence Expected	∃[6]	
Lake Emerald	*Somatochlora cingulata*	Undetermined	#	
Forcipate Emerald	*Somatochlora forcipata*	Undetermined	∃[2]	
Delicate Emerald	*Somatochlora franklini*	Undetermined		
Hudsonian Emerald	*Somatochlora hudsonica*	Secure		
Kennedy's Emerald	*Somatochlora kennedyi*	Secure		
Ocellated Emerald	*Somatochlora minor*	Sensitive		
Treeline Emerald	*Somatochlora sahlbergi*	May Be At Risk		
Mountain Emerald	*Somatochlora semicircularis*	Presence Expected	∃[6]	
Muskeg Emerald	*Somatochlora septentrionalis*	Undetermined		
Whitehouse's Emerald	*Somatochlora whitehousei*	Presence Expected	∃[6]	
Odonata – Anisoptera – Gomphidae				Dragonflies – Clubtails
Boreal Snaketail	*Ophiogomphus colubrinus*	Secure		
Pale Snaketail	*Ophiogomphus severus*	Presence Expected	∃[6]	
Elusive Clubtail	*Stylurus notatus*	Sensitive		G3 – 2007

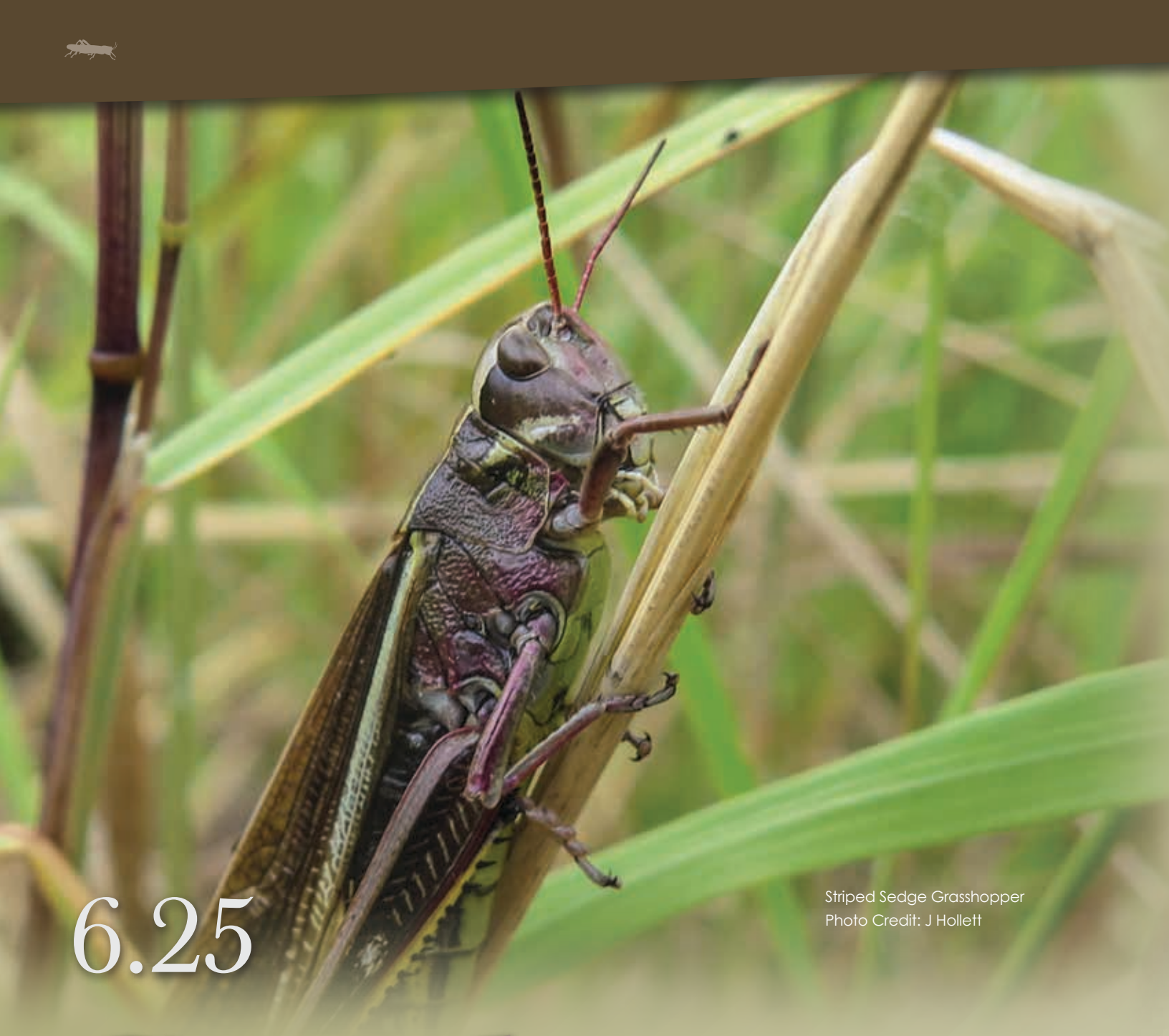
Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Odonata – Anisoptera – Libellulidae				Dragonflies – Skimmers
Boreal Whiteface	*Leucorrhinia borealis*	Secure		
Hudsonian Whiteface	*Leucorrhinia hudsonica*	Secure		
Canada Whiteface	*Leucorrhinia patricia*	Secure		
Variable Whiteface	*Leucorrhinia proxima*	Secure		
Four-spotted Skimmer	*Libellula quadrimaculata*	Secure		
Saffron-winged Meadowhawk	*Sympetrum costiferum*	Secure		
Black Meadowhawk	*Sympetrum danae*	Secure		
Cherry-faced Meadowhawk	*Sympetrum internum*	Secure		
Red-veined Meadowhawk	*Sympetrum madidum*	Secure		
White-faced Meadowhawk	*Sympetrum obtrusum*	Secure		
Odonata – Zygoptera – Calopterygidae				Damselflies – Broad-winged damselflies
River Jewelwing	*Calopteryx aequabilis*	Undetermined		
Odonata – Zygoptera – Coenagrionidae				Damselflies – Narrow-winged damselflies
Prairie Bluet	*Coenagrion angulatum*	Undetermined		
Subarctic Bluet	*Coenagrion interrogatum*	Undetermined		
Taiga Bluet	*Coenagrion resolutum*	Secure		
Northern Bluet	*Enallagma annexum*	Secure		
Boreal Bluet	*Enallagma boreale*	Secure		
Marsh Bluet	*Enallagma ebrium*	Secure		
Hagen's Bluet	*Enallagma hageni*	Undetermined		
Plains Forktail	*Ischnura damula*	Presence Expected	∃[6]	
Sedge Sprite	*Nehalennia irene*	Secure		
Odonata – Zygoptera – Lestidae				Damselflies – Spread-winged damselflies
Spotted Spreadwing	*Lestes congener*	Secure		
Common Spreadwing	*Lestes disjunctus*	Secure		
Emerald Spreadwing	*Lestes dryas*	Secure		
Sweetflag Spreadwing	*Lestes forcipatus*	Secure		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

1 Changed from At Risk
2 Changed from May Be at Risk
3 Changed from Sensitive
4 Changed from Secure
5 Changed from Undetermined
6 Changed from Not Assessed
7 Changed from Alien
8 Changed from Extirpated
9 Changed from Vagrant
10 Changed from Presence Expected

Lake Darner – females Photo Credit: B Fournier



Striped Sedge Grasshopper
Photo Credit: J Hollett

6.25 Grasshoppers and Relatives

Grasshoppers (order Orthoptera) are important in the North in many ways. First, they often occur in large numbers and have substantial impact. They may eat their weight in plant tissue each day, and can influence the composition of plant communities. They also hasten the degradation of cellulose and contribute significantly to the cycling of nutrients in ecosystems.

Second, many bird species feed on grasshoppers. Also reptiles and amphibians are major consumers. Some birds and mammals probably rely heavily on grasshoppers whereas others simply take advantage of periodic large numbers.

Sandhill Cranes feed on the relatively large striped sedge grasshopper (*Stethophyma lineata*) in fens and on clearwinged grasshopper (*Camnula pellucida*) along roads. Grasshoppers are 50-75% crude protein and thus highly nutritious.

Third, they can be useful indicators of environmental change. The diversity, functional importance, sensitivity to disturbance, ease of identification and ease of sampling make grasshoppers potentially useful indicators of the state of the natural environment. Grasshopper assemblages respond to disturbances associated with human land use and their responses may be considered along with information from other groups such as plants.

Many grasshoppers have complex behaviour patterns, both auditory and visual. The chirping or whistling-like sounds that they make can often be used to identify the species. These sounds are made by rubbing one part of the body against another and are referred to as stridulation.

The greatest variety of grasshoppers in the NWT is found in dry or moist open places dominated by grasses or sedges but with high floristic diversity. Such habitats occur beside streams and lakeshores and along roads. However, grasshoppers can occur in all habitats. The tundra grasshopper (*Bohemanella frigida*) and the Arctic grasshopper (*Aeropedallus arcticus*) are abundant in rich, limestone tundra. Our only bush-cricket or katydid (*Metrioptera sphagnorum*) in the NWT occurs in sphagnum bogs near Fort Smith.

The last glaciation greatly influenced the present distribution of grasshoppers in the NWT. Most species present here are widespread and abundant across most of southern Canada. Some likely followed the receding ice-sheet northward into Canada from an extensive range to the south.

Three species, Kennicott's grasshopper (*Melanoplus kennicottii*), speckled rangeland grasshopper (*Arphia conspersa*) and club-horned grasshopper (*Aeropedellus clavatus*) are mainly distributed in the prairies but are also present in isolated prairie remnants within the taiga-boreal forest of the NWT.

A particularly interesting pattern is demonstrated by a few species of grasshoppers in the NWT. This is the Beringian distribution associated with the unglaciated area of Alaska, Yukon and NWT. Beringia was largely treeless steppe tundra surrounded by glaciers. Here life survived for many thousands of years while the rest of Canada was under glacial ice. The Beringian biodiversity spread south and east as the ice sheet melted but the rate of dispersal varied for different species. Some grasshoppers were confined by habitat requirements while others were restricted by lack of mobility due to being flightless. Those that could not spread rapidly into recently deglaciated landscapes across Canada as a result of being flightless remained in the relict Beringian habitats outlining the approximate extent of the former Beringian region. Included in this flightless Beringian category are the tundra grasshopper (*Bohemanella frigida*), and Arctic grasshopper (*Aeropedellus arcticus*).

The third Beringian species, Brook's pink-shanked grasshopper (*Xanthippus brooksi*), is certainly one of the most interesting grasshoppers in the NWT and one that deserves much more study. Although a few individuals have been collected elsewhere in the Yukon and NWT, typical specimens of this species have been found only near Inuvik. So in a strict sense, it is a grasshopper unique to a very small area of the NWT.

As Beringia changed with boreal forest invading and many of the larger Beringian mammals disappearing, some Beringian insects likely survived in relict pockets of tundra grassland, on sandy dunes and on rocky slopes. Brook's pink-shanked grasshopper appears to be one of them.

Questions and local information about grasshoppers in the NWT can be sent to NWTBUGS@gov.nt.ca.

Dr. Paul Catling
Agriculture and Agri-Food Canada
Ottawa, ON

List 25. **Grasshoppers and Relatives**

There are 22 species of grasshoppers confirmed present in the NWT and one species of katydid. An additional five species are expected to be present. None are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Easdes *et al*. (2015). The group ranked across Canada includes order Orthoptera (grasshoppers), Blattodea (cockroaches), Dermaptera (earwigs), Isoptera (termites) and Mantodea (mantis). There are no species of cockroach, earwig, termite, or mantis known to be living in the wild in the NWT. The German cockroach (*Blattella germanica*) has been reported inside residences in Yellowknife and elsewhere in the past, but no populations are known to survive outside human habitations. Some species of earwigs may also be present intermittently indoors, but none have been reported and none are known to be present in the wild.

Cracker Grasshopper Photo Credit: PM Catling

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Arthropoda – Insecta				**Arthropods – Insects**
Orthoptera – Acrididae				Grasshopper-like insects – Short-horned grasshoppers
Arctic Grasshopper	*Aeropedellus arcticus*	Secure		
Club-horned Grasshopper	*Aeropedellus clavatus*	Secure	①[5]	
Speckle-winged Rangeland Grasshopper	*Arphia conspersa*	Secure		
Brown Grasshopper	*Bruneria brunnea*	Presence Expected		
Clear-winged Grasshopper	*Camnula pellucida*	Secure		
Cow Grasshopper	*Chloealtis abdominalis*	Secure		
Sprinkled Grasshopper	*Chloealtis conspersa*	Undetermined		
Two-striped Grasshopper	*Melanoplus bivittatus*	Presence Expected		
Northern Grasshopper	*Melanoplus borealis*	Secure		
Bruner's Grasshopper	*Melanoplus bruneri*	Secure		
Huckleberry Grasshopper	*Melanoplus fasciatus*	Secure		
Redlegged Grasshopper	*Melanoplus femurrubrum*	Secure		
Nordic Mountain Grasshopper	*Melanoplus frigidus*	Sensitive		
Gordon's Grasshopper	*Melanoplus gordonae*	Presence Expected		
Huron Grasshopper	*Melanoplus huroni*	Presence Expected		
Kennicott's Grasshopper	*Melanoplus kennicottii*	Sensitive		
Packard's Grasshopper	*Melanoplus packardii*	Presence Expected		
Migratory Grasshopper	*Melanoplus sanguinipes*	Secure		
Coral-winged Grasshopper	*Pardalophora apiculata*	Secure		
Marsh Meadow Grasshopper	*Pseudochorthippus curtipennis*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Graceful Sedge Grasshopper	*Stethophyma gracile*	Undetermined		
Striped Sedge Grasshopper	*Stethophyma lineatum*	Undetermined		
Cracker Grasshopper	*Trimerotropis verruculata*	Secure		
Brook's Pink-shanked Grasshopper	*Xanthippus corallipes brooksi*	Sensitive		
Orthoptera – Tetrigidae				Grasshopper-like insects – Grouse grasshoppers
Brunner's Pygmy Grasshopper	*Tetrix brunnerii*	Secure		
Ornated Pygmy Grasshopper	*Tetrix ornata*	Secure		
Granulated Pygmy Grasshopper	*Tetrix subulata*	Secure		
Orthoptera – Tettigoniidae				Grasshopper-like insects – Katydids
Bog Shield-backed Katydid	*Sphagniana sphagnorum*	Undetermined		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[c] *Camnula pellucida* and *Melanoplus femurrubrum* are both in the NWT and may be introduced. They are native to North America, but occur are mainly in man-made habitats.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Striped Sedge Grasshopper
Photo Credit: PM Catling

Alaska Running Crab Spider
Photo Credit: J Hollett

6.26 Spiders

Spiders belong to the arthropod class Arachnida, a word derived from the Greek term for "spider-like", along with scorpions, harvestmen, mites, ticks, whipscorpions and other familiar and not-so-familiar organisms. All arachnids have eight legs, a two-part body, and no antennae. In contrast, insects have six legs, a three-part body, and antennae.

Spiders (Order Araneae) have fang-like mouthparts (chelicerae) and most have four pairs of eyes. Spiders are unique in their possession of abdominal spinnerets and, in males, pedipalps (leg-like appendages at the front of a spider) that are extensively modified for mating purposes.

Spiders are excellent predators, primarily eating insects and other arthropods. Most are generalists, preying upon a wide variety of organisms. Only a few are specialists. Some actively hunt down their prey, others wait for prey to come to them and then capture them in elaborate webs or simply by ambushing and overpowering them.

Spiders form the seventh largest order of organisms on the planet (and the largest entirely predatory one) and are key components of all ecosystems where they occur.

All spiders use silk produced from their spinnerets for various purposes: from safety lines and egg sacs, to prey-capture webs. To most people, webs are probably the most familiar aspects of spiders. Many spiders, however, do not build webs. Spiders that ambush or actively hunt their prey (e.g., crab, jumping, wolf, ground, and sac spiders), do not build prey capture webs. Among web-building spiders, species grouped within the same Family usually construct similar types of webs (e.g., funnel-web, orb, sheet-web, and cobweb weavers). Spider webs vary widely in size, shape, and the amount and type of silk used.

Most Nearctic spider species take one to two years to complete their life cycles and, in the NWT, few live for more than one year. Almost all spiders are solitary animals. Because of this, spiders have evolved complex courtship rituals so that males and females of the same species can mate successfully… without eating each other.

Many Nearctic spiders spend the winter either as eggs (e.g., many orb weavers) or as sub-adults (e.g., many wolf and crab spiders). Sub-adult *Pardosa* wolf spiders are often one of the first signs of spring, emerging from their winter hiding places and running about in open areas, often in large numbers, on the first reasonably warm days. They mature rapidly and mate in the first weeks of spring. Shortly thereafter the females can be found dragging egg cases behind them, attached to their spinnerets, or with young spiderlings riding on their backs. Although few spiders are known to care for their young, this type of maternal care is typical of wolf spiders.

Considerable new information on NWT spider diversity and conservation ranking has become available since 2011. Recent work on Arctic spiders by the Biodiversity Institute of Ontario and, especially, the Arthropod Ecology Lab at McGill University has boosted the number of spider species known to occur in NWT (species marked #, newly recorded in the reason for change in the list below). In addition, work led by Environment Canada in 2013 produced the first comprehensive national and regional conservation status ranking of all spider species found in Canada.

The majority of new NWT records are in Linyphiidae (sheet-web weavers and dwarf spiders), by far the most diverse spider family in the northern Holarctic region.

Prior to these efforts, 88% of NWT spiders had been ranked as undetermined, unrankable due to unavailable data. Still, much more remains to be learned about NWT spiders. Diversity documentation and conservation ranking of NWT spiders remain incomplete. The majority of spiders known to occur in the NWT are still considered unrankable, but many are widespread and common Nearctic species elsewhere in Canada and, therefore, in the future and with additional data will likely also be ranked secure in the NWT.

The spider faunas of some provinces are fairly well known and perhaps may be used to predict total NWT spider diversity. If we assume the current known number of species in the NWT represents about half of the total fauna we can predict that the minimal total number of spider species in NWT will range from 500 to 650 species. Of course, the only real way to find out is to do more inventories. Specialized collection techniques (especially pitfall and Berlese sampling) in just about any of NWT's habitats should result in substantial further new additions to the NWT spider list as well as new geographical and quantitative data valuable for the ranking effort.

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Goldenrod Crab Spider
Photo Credit: J Hollett

List 26. **Spiders**

There are 321 species of spiders confirmed present in the NWT. At least two species are expected to be present but not yet confirmed. None are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows World Spider Catalogue (2016).

Goldenrod Crab Spider eating a flower fly Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Arthropoda – Arachnida				Arthropods – Arachnids
Araneae – Agelenidae				Spiders – Funnel-web weavers
Utah Grass Funnelweaver	*Agelenopsis utahana*	Undetermined		
Araneae – Amaurobiidae				Spiders – Hacklemesh weavers
Yellow-striped Laceweaver	*Arctobius agelenoides*	Undetermined		
Common Spined Laceweaver	*Cybaeopsis euopla*	Undetermined		
Araneae – Araneidae				Spiders – Orb weavers
Dark Alpine Orbweaver	*Aculepeira carbonarioides*	Secure		
Packard's Alpine Orbweaver	*Aculepeira packardi*	Undetermined		
Humped Bog Orbweaver	*Araneus corticarius*	Undetermined		
Marbled Orbweaver	*Araneus marmoreus*	Undetermined		
Nordmann's Orbweaver	*Araneus nordmanni*	Undetermined		
Common Orbweaver	*Araneus saevus*	Undetermined		
Shamrock Orbweaver	*Araneus trifolium*	Undetermined		
Yukon Orbweaver	*Araneus yukon*	Undetermined		
Six-spotted Yellow Orbweaver	*Araniella displicata*	Secure		
Uncommon Yellow Orbweaver	*Araniella proxima*	Undetermined		
Common Trashline Orbweaver	*Cyclosa conica*	Undetermined		
Tundra Dark-eyed Orbweaver	*Hypsosinga groenlandica*	Undetermined		
Common Dark-eyed Orbweaver	*Hypsosinga pygmaea*	Undetermined		
Forest Dark-eyed Orbweaver	*Hypsosinga rubens*	Secure	ⓘ[5]	
Furrow Orbweaver	*Larinioides cornutus*	Undetermined		
Ornamental Orbweaver	*Larinioides patagiatus*	Secure		
Arabesque Orbweaver	*Neoscona arabesca*	Undetermined	#	
Araneae – Clubionidae				Spiders – Sac spiders
Bryant Sac Spider	*Clubiona bryantae*	Secure	ⓘ[5]	
Common Harpoon Sac Spider	*Clubiona canadensis*	Undetermined		
Toothed Sac Spider	*Clubiona furcata*	Undetermined		
Kulczyński's Sac Spider	*Clubiona kulczynskii*	Undetermined		
Norway Harpoon Sac Spider	*Clubiona norvegica*	Secure		
Cupped Sac Spider	*Clubiona praematura*	Undetermined		
Riparian Sac Spider	*Clubiona riparia*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Araneae – Dictynidae				Spiders – Mesh web weavers
Lapland Meshweaver	*Arctella lapponica*	Undetermined		
Short-eared Meshweaver	*Argenna obesa*	Secure	∃[6]	
Boreal Thread Meshweaver	*Dictyna alaskae*	Undetermined		
Spiraled Thread Meshweaver	*Dictyna arundinacea*	Undetermined		
Short-heeled Thread Meshweaver	*Dictyna brevitarsa*	Undetermined		
Common Thread Meshweaver	*Dictyna major*	Undetermined		
Common Ribbon Meshweaver	*Emblyna annulipes*	Undetermined		
Boreal Ribbon Meshweaver	*Emblyna borealis*	Undetermined		
Spatulate Ribbon Meshweaver	*Emblyna manitoba*	Undetermined		
Pale Backspined Meshweaver	*Lathys pallida*	Undetermined	#	
Araneae – Gnaphosidae				Spiders – Ground spiders
Pluto Ground Spider	*Callilepis pluto*	Undetermined		
Marvelous Notched Ground Spider	*Drassodes mirus*	Undetermined	#	
Common Notched Ground Hunter	*Drassodes neglectus*	Undetermined		
Neglected Notched Ground Spider	*Gnaphosa borea*	Secure		
Short-spurred Ground Spider	*Gnaphosa brumalis*	Secure	ⓘ[5]	
Forest Ground Spider	*Gnaphosa microps*	Secure	ⓘ[5]	
Moss Ground Spider	*Gnaphosa muscorum*	Secure	ⓘ[5]	
Blunt-spurred Ground Spider	*Gnaphosa orites*	Undetermined		
Slender Ground Spider	*Gnaphosa parvula*	Undetermined		
Victorious Simple Ground Spider	*Haplodrassus eunis*	Undetermined	#	
Tapered Simple Ground Hunter	*Haplodrassus hiemalis*	Secure		
Ensign Simple Ground Spider	*Haplodrassus signifer*	Undetermined	#	
Plugged Antmimic Ground Spider	*Micaria aenea*	Secure	ⓘ[5]	
Alpine Antmimic Ground Spider	*Micaria alpina*	Undetermined		
Separated Antmimic Ground Spider	*Micaria constricta*	Undetermined		
Common Iridescent Antmimic Spider	*Micaria pulicaria*	Secure		
Extended Antmimic Ground Spider	*Micaria rossica*	Secure	ⓘ[5]	
Three-spotted Antmimic Ground Spider	*Micaria tripunctata*	Undetermined		
Canada Ground Spider	*Orodrassus canadensis*	Undetermined		
Common Preening Ground Spider	*Zelotes fratris*	Secure		
Teardrop Preening Ground Spider	*Zelotes puritanus*	Secure		
Sula Preening Ground Spider	*Zelotes sula*	Undetermined		
Araneae – Hahniidae				Spiders – Hahnid spiders
Hairy Comb-tailed Spider	*Hahnia cinerea*	Presence Expected	∃[6]	
Long-spined Comb-tailed Spider	*Hahnia glacialis*	Presence Expected	∃[6]	
Unmarked Comb-tailed Spider	*Hahnia ononidum*	Secure	ⓘ[5]	
Thin-hooked Comb-tailed Spider	*Neoantistea agilis*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Araneae – Linyphiidae			Spiders – Sheet-web or dwark weavers	
Elbowed Short-legged Sheetweaver	*Agyneta allosubtilis*	Undetermined	#	
American Short-legged Sheetweaver	*Agyneta amersaxatilis*	Undetermined	#	
Jackson's Short-legged Sheetweaver	*Agyneta jacksoni*	Undetermined	∃[6]	
Arctic Short-legged Sheetweaver	*Agyneta maritima*	Undetermined	#	
Big-eyed Short-legged Sheetweaver	*Agyneta nigripes*	Undetermined	#	
Olive Short-legged Sheetweaver	*Agyneta olivacea*	Secure	ⓘ[5]	
Simple Short-legged Sheetweaver	*Agyneta simplex*	Undetermined		
Toothed Tuft-horned Sheetweaver	*Allomengea dentisetis*	Undetermined		
Bristle-headed Arctic Money Spider	*Arcterigone pilifrons*	Undetermined		
Sickle Big-headed Money Spider	*Baryphyma trifrons*	Undetermined		
Blotched Shield Sheetweaver	*Bathyphantes brevipes*	Undetermined		
Sharp-forked Shield Sheetweaver	*Bathyphantes brevis*	Undetermined		
Canadian Shield Sheetweaver	*Bathyphantes canadensis*	Undetermined		
Black Shield Sheetweaver	*Bathyphantes eumenis*	Undetermined		
Small Shield Sheetweaver	*Bathyphantes gracilis*	Undetermined	#	
Fat-scaped Shield Sheetweaver	*Bathyphantes gulkana*	Undetermined		
Pale Shield Sheetweaver	*Bathyphantes pallidus*	Secure	ⓘ[5]	
Spined Shield Sheetweaver	*Bathyphantes reprobus*	Undetermined		
Pond Money Spider	*Carorita limnaea*	Undetermined	#	
Hump-eyed Armoured Money Spider	*Ceraticelus bulbosus*	Secure	ⓘ[5]	
Bulging-armoured Money Spider	*Ceraticelus crassiceps*	Undetermined	#	
Alpine Armoured Money Spider	*Ceraticelus rowensis*	Undetermined	#	
Brown Waxed Money Spider	*Ceratinella brunnea*	Undetermined	#	
Northern Waxed Money Spider	*Ceratinella ornatula*	Undetermined	#	
Juvenile Waxed Money Spider	*Ceratinella parvula*	Undetermined	#	
Broad Rugose Money Spider	*Ceratinops latus*	Undetermined	#	
Labrador Arboreal Money Spider	*Ceratinopsis labradorensis*	Undetermined	#	
Saw-backed Money Spider	*Cnephalocotes obscurus*	Secure	ⓘ[5]	
Holmgren's Money Spider	*Collinsia holmgreni*	Undetermined		
Spitsbergen Money Spider	*Collinsia spetsbergensis*	Undetermined		
Thule Money Spider	*Collinsia thulensis*	Undetermined		
Elongated Twincup Money Spider	*Dicymbium elongatum*	Undetermined	#	
Dimpled Double-spurred Money Spider	*Diplocentria bidentata*	Secure	ⓘ[5]	
Puzzling Double-spurred Money Spider	*Diplocentria perplexa*	Undetermined		
Quadrate Double-spurred Money Spider	*Diplocentria rectangulata*	Undetermined		
Bearded Muppet Money Spider	*Diplocephalus barbiger*	Undetermined		
Moss-dwelling Muppet Money Spider	*Diplocephalus sphagnicola*	Undetermined		
Common Muppet Money Spider	*Diplocephalus subrostratus*	Undetermined		
High-headed Bilobed Money Spider	*Dismodicus alticeps*	Undetermined		
Ten-eyed Bilobed Money Spider	*Dismodicus decemoculatus*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Dark Conehead Money Spider	*Entelecara sombra*	Undetermined	#	
Common Money Spider	*Erigone aletris*	Undetermined		
Simple-palped Money Spider	*Erigone alsaida*	Undetermined		
Circumpolar Money Spider	*Erigone arctica*	Secure		
Northern Watchman Money Spider	*Erigone arctophylacis*	Undetermined		
Black Money Spider	*Erigone atra*	Undetermined		
Faltering Money Spider	*Erigone blaesa*	Undetermined		
Crested Money Spider	*Erigone cristatopalpus*	Undetermined		
Thick-wristed Money Spider	*Erigone dentigera*	Undetermined		
Elongated Money Spider	*Erigone psychrophila*	Secure		
Tyrol Money Spider	*Erigone tirolensis*	Undetermined		
Whymper's Money Spider	*Erigone whymperi*	Undetermined		
Ancient Sheetweaver	*Estrandia grandaeva*	Undetermined		
Bowl and Doily Spider	*Frontinella communis*	Undetermined	#	
Rocky Saw-spined Money Spider	*Glyphesis scopulifer*	Undetermined		
Subjected Moocher Money Spider	*Gnathonarium suppositum*	Undetermined		
Stout-palped Money Spider	*Gonatium crassipalpum*	Undetermined		
Slender Patterned Money Spider	*Grammonota angusta*	Undetermined		
Five-lobed Patterned Money Spider	*Grammonota gigas*	Undetermined		
Maritime Patterned Money Spider	*Grammonota maritima*	Undetermined	#	
Banded Patterned Money Spider	*Grammonota vittata*	Undetermined		
Common Mallet Sheetweaver	*Helophora insignis*	Undetermined		
Ditched Money Spider	*Hilaira canaliculata*	Undetermined	#	
Packsack Money Spider	*Hilaira gibbosa*	Undetermined		
Oldgrowth Hilaira Weaver	*Hilaira herniosa*	Undetermined		
Rough Money Spider	*Hilaira incondita*	Undetermined		
Proletarian Money Spider	*Hilaira proletaria*	Undetermined		
Persecuting Money Spider	*Hilaira vexatrix*	Secure	ⓘ[5]	
Four-ridged Oath-taking Money Spider	*Horcotes quadricristatus*	Undetermined		
Northern Hump-necked Money Spider	*Hybauchenidium aquilonare*	Undetermined		
Common Hump-necked Money Spider	*Hybauchenidium gibbosum*	Undetermined		
Nordland Under-eyed Money Spider	*Hypomma nordlandicum*	Undetermined		
Subarctic Under-eyed Money Spider	*Hypomma subarcticum*	Undetermined		
Splendid Money Spider	*Hypselistes florens*	Undetermined		
Jackson's Hourglass Money Spider	*Hypselistes jacksoni*	Undetermined	#	
Yellow And Black Money Spider	*Hypselistes semiflavus*	Undetermined	#	
Folded Sheetweaver	*Improphantes complicatus*	Undetermined	#	
Doubly Sinful Sheetweaver	*Incestophantes duplicatus*	Undetermined	#	
Washington's Sinful Sheetweaver	*Incestophantes washingtoni*	Undetermined	#	
Alpine Whiskered Money Spider	*Islandiana falsifica*	Undetermined		
Dark Sheetweaver	*Kaestneria pullata*	Undetermined		

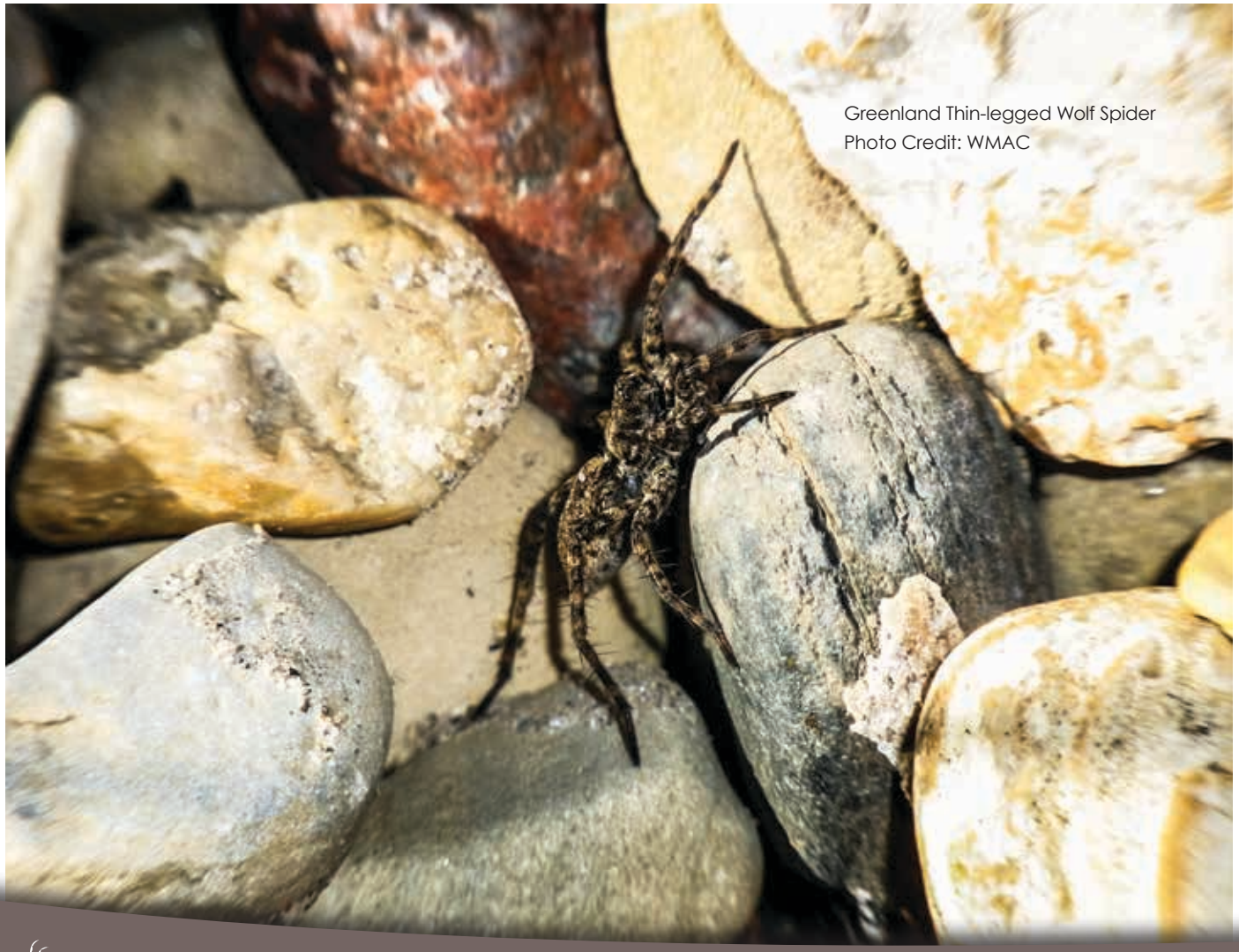
Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Reddish Sheetweaver	*Kaestneria rufula*	Undetermined		
Alpine Fine Sheetweaver	*Lepthyphantes alpinus*	Undetermined		
Trifling Sheetweaver	*Macrargus multesimus*	Undetermined		
Tundra Masik Money Spider	*Masikia indistincta*	Secure	ⓘ[5]	
Sundevall's Money Spider	*Maso sundevalli*	Undetermined		
Boreal Argus Money Weaver	*Mecynargus borealis*	Undetermined		
Mountain Argus Money Weaver	*Mecynargus monticola*	Undetermined		
Squinting Argus Money Spider	*Mecynargus paetulus*	Undetermined		
Sphagnophile Argus Money Spider	*Mecynargus sphagnicola*	Undetermined		
Common Harvester Money Spider	*Mermessus trilobatus*	Undetermined		
Undulating Harvester Money Spider	*Mermessus undulatus*	Undetermined		
Atypical Rod-headed Money Spider	*Metopobactrus prominulus*	Undetermined		
West Coast Platform Sheetweaver	*Microlinyphia dana*	Undetermined	#	
Lesser Platform Sheetweaver	*Microlinyphia pusilla*	Undetermined		
Common Micronet Sheetweaver	*Microneta viaria*	Undetermined	#	
Latticed Dome Sheetweaver	*Neriene clathrata*	Undetermined	#	
Filmy Dome Sheetweaver	*Neriene radiata*	Undetermined		
Common Big-chested Money Spider	*Oedothorax trilobatus*	Undetermined	#	
Beringian Money Spider	*Oreoneta beringiana*	Undetermined		
Brown Money Spider	*Oreoneta brunnea*	Undetermined		
Arviat Money Spider	*Oreoneta eskimopoint*	Undetermined		
Herschel Money Spider	*Oreoneta herschel*	Undetermined		
Flat-headed Money Spider	*Oreoneta leviceps*	Undetermined		
Magadan Money Spider	*Oreoneta magaputo*	Undetermined		
Right-angled Sheetweaver	*Oreonetides rectangulatus*	Undetermined	#	
Common Sheetweaver	*Oreonetides vaginatus*	Undetermined		
Menge's Helmet Money Spider	*Pelecopsis mengei*	Undetermined		
Infamous Stranger Sheetweaver	*Perregrinus deformis*	Undetermined		
Polar Money Spider	*Perro polaris*	Undetermined		
Least Blahblah Money Spider	*Phlattothrata parva*	Undetermined	#	
Northern Hammock Sheetweaver	*Pityohyphantes subarcticus*	Undetermined		
American Hairy-legged Money Spider	*Pocadicnemis americana*	Secure		
Beringian Variegated Sheetweaver	*Poeciloneta vakkhanka*	Undetermined		
Kulczyński's Nosecone Money Spider	*Praestigia kulczynskii*	Secure		
Gertsch's Atlas Money Spider	*Satilatlas gertschi*	Undetermined		
Hesitating Money Spider	*Sciastes dubius*	Undetermined		
Long-armed Money Spider	*Sciastes hastatus*	Undetermined		
Mentasta Lake Money Spider	*Sciastes mentasta*	Undetermined	#	
Short-armed Money Spider	*Sciastes truncatus*	Secure		
Eastern Highwayman Money Spider	*Scironis tarsalis*	Undetermined	#	
Alpine Money Spider	*Scotinotylus alpinus*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Holy Money Spider	*Scotinotylus sacer*	Secure	ⓘ[5]	
Fringed Money Spider	*Scyletria inflata*	Undetermined		
Beringian Semlya Money Spider	*Semljicola beringianus*	Secure	ⓘ[5]	
Lapland Semlya Money Spider	*Semljicola lapponicus*	Undetermined		
Blunt Semlya Money Spider	*Semljicola obtusus*	Undetermined		
Pampia Estimator Money Spider	*Silometopoides pampia*	Undetermined		
Mountain Crescent Money Spider	*Sisicottus montanus*	Undetermined		
Rotund Money Spider	*Sisis rotundus*	Undetermined	#	
Indexed Flowing Money Spider	*Souidas tibialis*	Undetermined		
Blauvelt Three-striped Sheetweaver	*Stemonyphantes blauveltae*	Undetermined		
Common Stylus Money Spider	*Styloctetor compar*	Secure	ⓘ[5]	
Two-keeled Humble Money Spider	*Tapinocyba bicarinata*	Secure	ⓘ[5]	
Little Humble Money Spider	*Tapinocyba minuta*	Secure		
Simple Humble Money Spider	*Tapinocyba simplex*	Undetermined	#	
Wide-chested Money Spider	*Tarsiphantes latithorax*	Undetermined		
Antmimic Tennessee Sheetweaver	*Tennesseellum formica*	Undetermined	#	
Summery Ornate-shined Money Spider	*Tiso aestivus*	Undetermined	#	
Decorated Red-and-Black Money Spider	*Tmeticus ornatus*	Undetermined		
Dwarf Typho Money Spider	*Typhochrestus pygmaeus*	Undetermined		
Chesty Vermont Money Spider	*Vermontia thoracica*	Secure	ⓘ[5]	
Long-tongued Money Spider	*Wabasso cacuminatus*	Undetermined		
Short-tongued Money Spider	*Wabasso quaestio*	Undetermined	#	
Arctic Erudite Money Spider	*Walckenaeria arctica*	Undetermined		
Black-shined Erudite Money Spider	*Walckenaeria atrotibialis*	Undetermined		
Orange-headed Erudite Money Spider	*Walckenaeria auranticeps*	Undetermined		
Chestnut Erudite Money Spider	*Walckenaeria castanea*	Undetermined		
Lucky Erudite Money Spider	*Walckenaeria clavicornis*	Undetermined		
Common Erudite Money Spider	*Walckenaeria communis*	Undetermined		
Duckling Erudite Money Spider	*Walckenaeria cuspidata*	Undetermined	#	
Small Horned Erudite Money Spider	*Walckenaeria exigua*	Secure	ⓘ[5]	
Karpinski's Erudite Money Spider	*Walckenaeria karpinskii*	Secure	ⓘ[5]	
Koch's Erudite Money Spider	*Walckenaeria kochi*	Undetermined	#	
Pleasant Erudite Money Spider	*Walckenaeria lepida*	Undetermined		
Hooked Erudite Money Spider	*Walckenaeria spiralis*	Undetermined	#	
False Hooked Erudite Money Spider	*Walckenaeria subspiralis*	Undetermined		
Gunturret Erudite Money Spider	*Walckenaeria tricornis*	Secure	ⓘ[5]	
Boomerang Erudite Money Spider	*Walckenaeria vigilax*	Undetermined	#	
Aimak Scientist Money Spider	*Walckenaerianus aimakensis*	Undetermined	#	
Boreal Paintbrush Money Spider	*Zornella armata*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Araneae – Liocranidae				Spiders – Liocranid sac spiders
Ornate Spiny-legged Sac Spider	*Agroeca ornata*	Undetermined		
Araneae – Lycosidae				Spiders – Wolf spiders
Pointed Wolf Spider	*Alopecosa aculeata*	Secure		
High Arctic Wolf Spider	*Alopecosa exasperans*	Secure	ⓘ[5]	
Low Arctic Wolf Spider	*Alopecosa hirtipes*	Secure		
Holarctic Wolf Spider	*Alopecosa pictilis*	Secure		
Alpine Wolf Spider	*Arctosa alpigena*	Secure		
Marked Wolf Spider	*Arctosa insignita*	Undetermined		
Greater Dark Wolf Spider	*Arctosa raptor*	Secure	ⓘ[5]	
Shiny Wolf Spider	*Arctosa rubicunda*	Undetermined		
Spotted Thin-legged Wolf Spider	*Pardosa albomaculata*	Undetermined		
Tundra Thin-legged Wolf Spider	*Pardosa algens*	Secure	ⓘ[5]	
Graceful Thin-legged Wolf Spider	*Pardosa concinna*	Secure	ⓘ[5]	
Forked Thin-legged Wolf Spider	*Pardosa furcifera*	Secure	ⓘ[5]	
Snowbank Thin-legged Wolf Spider	*Pardosa fuscula*	Secure		
Glacier Thin-legged Wolf Spider	*Pardosa glacialis*	Secure		
Greenland Thin-legged Wolf Spider	*Pardosa groenlandica*	Secure		
Taiga Thin-legged Wolf Spider	*Pardosa hyperborea*	Secure	ⓘ[5]	
Lapland Thin-legged Wolf Spider	*Pardosa lapponica*	Secure		
Mackenzie Thin-legged Wolf Spider	*Pardosa mackenziana*	Secure		
Modest Thin-legged Wolf Spider	*Pardosa modica*	Undetermined	#	
Shiny Thin-legged Wolf Spider	*Pardosa moesta*	Secure	ⓘ[5]	
Podhorski's Thin-legged Wolf Spider	*Pardosa podhorskii*	Undetermined		
Comrade Thin-legged Wolf Spider	*Pardosa sodalis*	Undetermined		
Holarctic Thin-legged Wolf Spider	*Pardosa tesquorum*	Secure		
Boreal Thin-legged Wolf Spider	*Pardosa uintana*	Secure		
Forest Thin-legged Wolf Spider	*Pardosa xerampelina*	Secure		
Bryant Pirate Wolf Spider	*Pirata bryantae*	Undetermined		
Common Pirate Wolf Spider	*Pirata piraticus*	Secure	ⓘ[5]	
Cantrall's Pirate Wolf Spider	*Piratula cantralli*	Undetermined		
Sphagnum Pirate Wolf Spider	*Piratula insularis*	Undetermined		
Common Litter Wolf Spider	*Trochosa terricola*	Undetermined		
Araneae – Philodromidae				Spiders – Running crab spiders
Alaska Running Crab Spider	*Philodromus alascensis*	Undetermined		
Common Running Crab Spider	*Philodromus cespitum*	Secure		
Boreal Running Crab Spider	*Philodromus mysticus*	Undetermined		
Conifer Running Crab Spider	*Philodromus placidus*	Undetermined		
White-striped Running Crab Spider	*Philodromus rufus*	Secure		
Arctic Running Crab Spider	*Thanatus arcticus*	Secure	ⓘ[5]	
Hairy Running Crab Spider	*Thanatus striatus*	Secure	ⓘ[5]	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Grooved Running Crab Spider	*Tibellus maritimus*	Secure		
Slender Running Crab Spider	*Tibellus oblongus*	Undetermined		
Araneae – Pisauridae				Spiders – Fishing spiders
Six-spotted Fishing Spider	*Dolomedes triton*	Undetermined		
Araneae – Salticidae				Spiders – Jumping spiders
Simple Shiny Jumping Spider	*Chalcoscirtus alpicola*	Undetermined	#	
Double-curved Jumping Spider	*Dendryphantes nigromaculatus*	Undetermined		
Bronze Jumping Spider	*Eris militaris*	Undetermined		
Proszynski's Knobbed Jumping Spider	*Evarcha proszynskii*	Secure	ⓘ[5]	
Boreal Ornamented Jumping Spider	*Habronattus borealis*	Undetermined	#	
Striped White-cheeked Jumping Spider	*Pelegrina flavipes*	Undetermined		
Flared White-cheeked Jumping Spider	*Pelegrina montana*	Undetermined		
Hitchhiking Round-bulbed Jumping Spider	*Pellenes lapponicus*	Undetermined	#	
Boreal Tufted Jumping Spider	*Phidippus borealis*	Undetermined		
Johnson's Tufted Jumping Spider	*Phidippus johnsoni*	Undetermined		
Whitman's Tufted Jumping Spider	*Phidippus whitmani*	Undetermined	#	
Cutler's Patterned Jumping Spider	*Sitticus cutleri*	Undetermined		
Flower Patterned Jumping Spider	*Sitticus floricola*	Undetermined		
Ranier's Patterned Jumping Spider	*Sitticus ranieri*	Secure	ⓘ[5]	
Striped Patterned Jumping Spider	*Sitticus striatus*	Undetermined	#	
Minute Alpine Jumping Spider	*Talavera minuta*	Undetermined		
Araneae – Tetragnathidae				Spiders – Long-jawed orb weavers
Clerck's Thick Long-jawed Spider	*Pachygnatha clercki*	Secure		
Tailed Long-jawed Spider	*Tetragnatha caudata*	Undetermined		
Uncommon Long-jawed Spider	*Tetragnatha dearmata*	Undetermined		
Northern Long-jawed Spider	*Tetragnatha extensa*	Secure		
Shoshone Long-jawed Spider	*Tetragnatha shoshone*	Undetermined		
Common Long-jawed Spider	*Tetragnatha versicolor*	Secure		
Araneae – Theridiidae				Spiders – Cobweb weavers
Fat-fanged Cobweaver	*Chryso nordica*	Undetermined		
Common Dimpled Widow Spider	*Crustulina sticta*	Undetermined		
Leaf-backed Long-jawed Cobweaver	*Enoplognatha caricis*	Undetermined	#	
Alpine Long-jawed Cobweaver	*Enoplognatha intrepida*	Undetermined		
Black-headed Triangular Cobweaver	*Euryopis argentea*	Secure	#	
Ohlert's Cobweaver	*Ohlertidion ohlerti*	Undetermined		
Enclosed Cobweaver	*Phylloneta impressa*	Undetermined		
Common Immaculate Cobweaver	*Robertus fuscus*	Undetermined		
Punctate False Black Widow Spider	*Steatoda albomaculata*	Undetermined		
Common False Black Widow Spider	*Steatoda borealis*	Undetermined		
Talking Long-toed Cobweaver	*Theonoe stridula*	Undetermined	#	
Common Long-legged Cobweaver	*Theridion differens*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Wetland Long-legged Cobweaver	*Theridion pictum*	Undetermined		
Hairy-faced Cobweaver	*Thymoites minnesota*	Undetermined		
Heathland Cobweaver	*Thymoites oleatus*	Undetermined		
Araneae – Thomisidae				Spiders – Thomisid crab spiders
Utah Bark Crab Spider	*Bassaniana utahensis*	Undetermined		
Dark Crab Spider	*Coriarachne brunneipes*	Undetermined		
Goldenrod Crab Spider	*Misumena vatia*	Secure		
Arctic Leaflitter Crab Spider	*Ozyptila arctica*	Secure		
Gertsch's Leaflitter Crab Spider	*Ozyptila gertschi*	Secure	ⓘ[5]	
Boreal Leaflitter Crab Spider	*Ozyptila sincera*	Secure	ⓘ[5]	
Banks's Ground Crab Spider	*Xysticus banksi*	Undetermined	#	
Britcher's Ground Crab Spider	*Xysticus britcheri*	Secure		
Boreal Ground Crab Spider	*Xysticus canadensis*	Undetermined		
Chippewan Ground Crab Spider	*Xysticus chippewa*	Undetermined		



Greenland Thin-legged Wolf Spider
Photo Credit: WMAC

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Hooked Ground Crab Spider	*Xysticus cunctator*	Undetermined		
Higharctic Ground Crab Spider	*Xysticus deichmanni*	Secure		
Tough Ground Crab Spider	*Xysticus durus*	Undetermined		
Eccentric Ground Crab Spider	*Xysticus ellipticus*	Undetermined		
Emerton's Ground Crab Spider	*Xysticus emertoni*	Secure		
Wild Ground Crab Spider	*Xysticus ferox*	Secure		
Mournful Ground Crab Spider	*Xysticus luctuosus*	Secure		
Knobbed Ground Crab Spider	*Xysticus montanensis*	Undetermined	#	
Dark Ground Crab Spider	*Xysticus obscurus*	Undetermined		
Crescentric Ground Crab Spider	*Xysticus triangulosus*	Secure		
Araneae – Titanoecidae				Spiders – Titanoecid spiders
Alpine Rockweaver	*Titanoeca nivalis*	Undetermined		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Alpine Wolf Spider Photo Credit: J Hollett

Furrow Orbweaver and Northern Bluet Photo Credit: J Hollett

Yellow Mountain Avens
Photo Credit: J Hollett

6.27 Vascular Plants

Plants can define a landscape. Being able to identify plants will give any person the feeling of belonging to that landscape: of being home. For wildlife, plants are the foundation of their habitat, providing shelter and for many also food.

Plants come in many forms. Vascular plants have a special tube-like system to transport nutrients and water in their stem. Many non-vascular plants, such as liverworts and mosses are ranked in lists further down in this report.

The traditional use of vascular plants is being recorded in ever-increasing detail to preserve this information for future generations. Fascinating and informative books are now available on the multiple uses of vascular plants in the NWT – see the references Andre and Fehr (2000) and Inuvialuit Elders and Bandringa (2010) at the end of this report.

The taxonomy of vascular plants continues to change since the publication of ranks in 2011. Again, we have tracked these changes in the NWT Species Infobase at www.nwtspeciesatrisk.ca, to facilitate our upgrade to the new taxonomy. In the list below, we retained the most recent taxonomic names and updated all species names according to VASCAN available on the Internet at http://data.canadensys.net/vascan/search.

Many plant experts from the NWT and visiting botanists from outside the NWT have helped review the ranks of our vascular plants. We acknowledge their help at the end of the report. We continue to take photographs and transcribe label information from each original plant specimen ever collected from the NWT and stored in museums around the world. This effort is called the NWT Virtual Herbarium. It is proving valuable to review the ranks of vascular plants, to map the location of rare plants, to help plan for more surveys, and to determine if plants that may be at risk are in a proposed development area or a proposed protected area.

NWT is home to five species of plants that are extremely rare in the world. All are found in or near areas that remained unglaciated during the last Glacial Age. These areas are called refugia, and are part of the north-western region of North America called Beringia. Two of these plants, the hairy braya and the Nahanni aster are found only in the NWT, and nowhere else in the world.

Many alien species in the NWT are plants. Most of these plant species have been introduced to North America decades ago and have originated either from Europe or Asia. New alien (introduced) plants are found every few years. Monitoring alien plants along our highways continue. So far two surveys have been conducted, in 2006 and in 2016.

Since 2011, new plant surveys have resulted in changed ranks for many species. In most cases, new information resulted in a species proving to be less rare than previously thought. These surveys, in addition to information contributed by visiting botanists, users of medicinal plants, and many knowledgeable people, were the source of new information for this ranking of the general status of vascular plants in the NWT. Remember to send all your plant vouchers to a reputed herbarium.

Send questions and photos to NWTSOER@gov.nt.ca.

Bruce Bennett
Co-chair, Vascular Plants Sub-committee
COSEWIC
Yukon Conservation Data Centre
NatureServe Canada
Whitehorse, YT

And

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Ecosystem Management Biologist
Wildlife Division
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Yellowknife, NT

List 27. **Vascular Plants**

There are 1,183 species of vascular plants confirmed present in the NWT, of these 134 species are alien to the NWT. An additional 31 species of plants are expected to be present. Nine species are of global conservation concern. Plants are listed first according to the *Class* they belong to, in phylogenic order. Within *Classes*, plants are listed alphetically by the *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows VASCAN (Brouillet *et al*. 2015).

Rock Cranberry Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Lycopodiophyta – Isoetopsida					Ancient spore-bearing plants – Quillworts and skikemosses
Isoetales – Isoetaceae					Quillworts – Quillworts
Spiny-spored Quillwort	*Isoetes echinospora*	Secure	ⓘ[5]		
Lake Quillwort	*Isoetes lacustris*	May Be At Risk			
Selaginellales – Selaginellaceae					Spikemosses – Spikemosses
Ledge Spikemoss	*Selaginella rupestris*	Presence Expected	∃[6]		
Northern Spikemoss	*Selaginella selaginoides*	Secure			
Siberian Spikemoss	*Selaginella sibirica*	Secure	ⓘ[5]		
Lycopodiophyta – Lycopodiopsida					Ancient spore-bearing plants – Clubmosses and firmosses
Lycopodiales – Lycopodiaceae					Large clubmosses – Clubmosses
Alpine Clubmoss	*Diphasiastrum alpinum*	Secure			
Trailing Clubmoss	*Diphasiastrum complanatum*	Secure			
Sitka Ground Firmoss	*Diphasiastrum sitchense*	Presence Expected			
Fir Clubmoss	*Huperzia selago*	Secure			
Bristly Clubmoss	*Lycopodium annotinum*	Secure			
Tree Clubmoss	*Lycopodium dendroideum*	Secure	ⓘ[3]		
One-cone Clubmoss	*Lycopodium lagopus*	Undetermined			
Pteridophyta – Equisetopsida					Spore-bearing plants – Horsetails
Equisetales – Equisetaceae					Horsetails – Horsetails
Field Horsetail	*Equisetum arvense*	Secure			
Water Horsetail	*Equisetum fluviatile*	Secure			
Tall Scouring Rush	*Equisetum hyemale*	Secure			
Marsh Horsetail	*Equisetum palustre*	Secure			
Meadow Horsetail	*Equisetum pratense*	Secure			
Dwarf Scouring-rush	*Equisetum scirpoides*	Secure			
Woodland Horsetail	*Equisetum sylvaticum*	Secure			
Variegated Horsetail	*Equisetum variegatum*	Secure			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Pteridophyta – Polypodiopsida					Spore-bearing plants – Ferns
Polypodiales – Aspleniaceae					Polypod ferns – Spleenworts
Green Spleenwort	*Asplenium viride*	May Be At Risk			
Polypodiales – Dryopteridaceae					Polypod ferns – Wood ferns
Spinulose Wood-fern	*Dryopteris carthusiana*	May Be At Risk			
Northern Wood-fern	*Dryopteris expansa*	May Be At Risk			
Fragrant Cliff Wood-fern	*Dryopteris fragrans*	Secure			
Northern Holly-fern	*Polystichum lonchitis*	Presence Expected	ⓘ5		
Polypodiales – Onocleaceae					Polypod ferns – Ostrich ferns
Ostrich Fern	*Matteuccia struthiopteris*	Sensitive			
Polypodiales – Polypodiaceae					Polypod ferns – Polypodies
Sibirian Polypody	*Polypodium sibiricum*	Secure			
Rock Polypody	*Polypodium virginianum*	Undetermined			
Polypodiales – Pteridaceae					Polypod ferns – Rock-brakes
American Parsley-fern	*Cryptogramma acrostichoides*	Secure			
Alaska Parsley-fern	*Cryptogramma sitchensis*	May Be At Risk			
Slender Rock-brake	*Cryptogramma stelleri*	May Be At Risk			
Smooth Cliff-brake	*Pellaea glabella*	May Be At Risk			
Polypodiales – Thelypteridaceae					Polypod ferns – Beech ferns
Northern Beech Fern	*Phegopteris connectilis*	Sensitive			
Polypodiales – Woodsiaceae					Polypod ferns – Cliff ferns
Subarctic Lady-fern	*Athyrium filix-femina*	Sensitive			
Fragile Fern	*Cystopteris fragilis*	Secure			
Mountain Bladder-fern	*Cystopteris montana*	Sensitive			
Nahanni Oak-fern	*Gymnocarpium continentale*	Secure			
Common Oak-fern	*Gymnocarpium dryopteris*	Secure			
Alpine Cliff-fern	*Woodsia alpina*	Secure	ⓘ3		
Smooth Cliff-fern	*Woodsia glabella*	Secure			
Rusty Cliff-fern	*Woodsia ilvensis*	Secure			
Oregon Cliff-fern	*Woodsia oregana*	Presence Expected			
Pteridophyta – Psilotopsida					Spore-bearing plants – Fern-like plants
Ophioglossales – Ophioglossaceae					Moonworts – Moonworts
Triangle Moonwort	*Botrychium lanceolatum*	Presence Expected			
Common Moonwort	*Botrychium lunaria*	Secure			
Mingan Moonwort	*Botrychium minganense*	May Be At Risk			
Northwestern Moonwort	*Botrychium pinnatum*	May Be At Risk			

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Spatulate Moonwort	*Botrychium spathulatum*	May Be At Risk			G3 – 2008
Rattlesnake Fern	*Botrypus virginianus*	Sensitive			
Leathery Grape-fern	*Sceptridium multifidum*	May Be At Risk			
Pinophyta – Pinopsida					Cone-bearing plants – Conifers
Pinales – Cupressaceae					Pine-like plants – Junipers
Common Juniper	*Juniperus communis*	Secure			
Creeping Juniper	*Juniperus horizontalis*	Secure			
Pinales – Pinaceae					Pine-like plants – Pines and relatives
Rocky Mountain Subalpine Fir	*Abies bifolia*	Secure			
Tamarack	*Larix laricina*	Secure			
White Spruce	*Picea glauca*	Secure			
Black Spruce	*Picea mariana*	Secure			
Jack Pine	*Pinus banksiana*	Secure			
Lodgepole Pine	*Pinus contorta*	Secure			
Magnoliophyta – Monocotyledoneae					Flowering plants – Monocots
Alismatales – Alismataceae					Waterplants – Water plantains
Northern Water Plantain	*Alisma triviale*	Sensitive			
Northern Arrowhead	*Sagittaria cuneata*	Secure			
Alismatales – Zosteraceae					Waterplants – Eelgrasses
Common Eelgrass	*Zostera marina*	Undetermined			
Arales – Acoraceae					Aroids – Sweetflags
Several Vein Sweetflag (Rat Root)	*Acorus americanus*	May Be At Risk			
Arales – Araceae					Aroids – Arums
Wild Calla	*Calla palustris*	Secure			
Arales – Lemnaceae					Aroids – Duckweed
Star Duckweed	*Lemna trisulca*	Secure			
Turion Duckweed	*Lemna turionifera*	Secure			
Cyperales – Cyperaceae					Grass-like herbs – Sedges and relatives
Red Clubrush	*Blysmopsis rufa*	Sensitive	ⓘ[2]		
Saltmarsh Bulrush	*Bolboschoenus maritimus*	May Be At Risk			
Circumpolar Sedge	*Carex adelostoma*	Sensitive			
Lesser Brown Sedge	*Carex adusta*[c]	Undetermined			
Black-and-White-scale Sedge	*Carex albonigra*	Secure			
Water Sedge	*Carex aquatilis*	Secure			
Northern Clustered Sedge	*Carex arcta*	Undetermined			
Awned Sedge	*Carex atherodes*	Secure			
Slender-beak Sedge	*Carex athrostachya*	Presence Expected			
Scabrous Black Sedge	*Carex atratiformis*	Secure			
Dark-brown Sedge	*Carex atrofusca*	Secure			

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Lesser Black-scaled Sedge	*Carex atrosquama*	Secure	ⓘ[3]		
Golden Fruit Sedge	*Carex aurea*	Secure			
Bebb's Sedge	*Carex bebbii*	Sensitive			
Two-colour Sedge	*Carex bicolor*	Secure			
Bigelow's Sedge	*Carex bigelowii*	Secure			
Yukon Sedge	*Carex bonanzensis*	Secure			
Brownish Sedge	*Carex brunnescens*	Secure			
Buxbaum's Sedge	*Carex buxbaumii*	Secure			
Silvery Sedge	*Carex canescens*	Secure			
Hairlike Sedge	*Carex capillaris*	Secure			
Capitate Sedge	*Carex capitata*	Secure			
Creeping Sedge	*Carex chordorrhiza*	Secure			
Low Northern Sedge	*Carex concinna*	Secure			
Crawford's sedge	*Carex crawfordii*	Sensitive			
Northern Sedge	*Carex deflexa*	Secure			
Dewey's Sedge	*Carex deweyana*	Undetermined			
Lesser Panicled Sedge	*Carex diandra*	Secure			
Softleaf Sedge	*Carex disperma*	Secure			
Needle-leaved Sedge	*Carex duriuscula*	May Be At Risk			
Bristle-leaved Sedge	*Carex eburnea*	Secure			
Goosegrass Sedge	*Carex eleusinoides*	Sensitive	ⓘ[2]		
Thread-leaved Sedge	*Carex filifolia*	Sensitive			
Straw Sedge	*Carex foenea*	Secure	∃[6]		
Short-Leaf Sedge	*Carex fuliginosa*	Secure			
Garber's Elk Sedge	*Carex garberi*	Secure			
Glacier Sedge	*Carex glacialis*	Secure			
Gravel Sedge	*Carex glareosa*	Secure	ⓘ[3]		
Northern Bog Sedge	*Carex gynocrates*	Secure			
Hudson Bay Sedge	*Carex heleonastes*	Sensitive			
Arctic Marsh Sedge	*Carex holostoma*	Secure			
Hood's Sedge	*Carex hoodii*	May Be At Risk			
Inland Sedge	*Carex interior*	Secure	ⓘ[3]		
Krause's Sedge	*Carex krausei*	Undetermined			
Arctic Harefoot Sedge	*Carex lachenalii*	Secure			
Smooth-stem Sedge	*Carex laeviculmis*	Presence Expected			
Lapland Sedge	*Carex lapponica*	Undetermined	∃[4]		
Slender Sedge	*Carex lasiocarpa*	Sensitive			
Weak Sedge	*Carex laxa*	May Be At Risk			
Shore Sedge	*Carex lenticularis*	Secure			

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Bristly-stalk Sedge	*Carex leptalea*	Secure			
Mud Sedge	*Carex limosa*	Secure			
Livid Sedge	*Carex livida*	Sensitive			
Rye-grass Sedge	*Carex loliacea*	Sensitive			
Mackenzie's Sedge	*Carex mackenziei*	May Be At Risk			
Falkland Island Sedge	*Carex macloviana*	Secure	ⓘ5		
Alaska Long-awn Sedge	*Carex macrochaeta*	Presence Expected			
Boreal Bog Sedge	*Carex magellanica*	Secure			
Sea Sedge	*Carex marina*	Secure			
Seaside Sedge	*Carex maritima*	Secure			
Intermediate Sedge	*Carex media*	Secure			
Fragile-seed Sedge	*Carex membranacea*	Secure			
Alpine Tundra Sedge	*Carex microchaeta*	Secure			
False Unicinia Sedge	*Carex microglochin*	Secure			
Small-rooted Sedge	*Carex micropoda*	Sensitive			
Small-wing Sedge	*Carex microptera*	Undetermined			
Nard Sedge	*Carex nardina*	Secure			
Blunt Sedge	*Carex obtusata*	Secure			
Few-seeded Sedge	*Carex oligosperma*	May Be At Risk			
Few-flowered Sedge	*Carex pauciflora*	Undetermined			
Peck's Sedge	*Carex peckii*	Sensitive	ⓘ2		
Woolly Sedge	*Carex pellita*	Undetermined	#		
Pasture Sedge	*Carex petasata*	Undetermined	∃2		
Rock Dwelling Sedge	*Carex petricosa*	Secure			
Mountain Hare Sedge	*Carex phaeocephala*	Undetermined	ⓘ3		
Short-stalk Sedge	*Carex podocarpa*	Secure			
Clustered Field Sedge	*Carex praegracilis*[c]	Undetermined			
Prairie Sedge	*Carex prairea*	May Be At Risk			
Northern Meadow Sedge	*Carex praticola*[c]	Undetermined	∃3		
Presl's Sedge	*Carex preslii*	Presence Expected			
Loose-flowered Sedge	*Carex rariflora*	Secure			
Retrorse Sedge	*Carex retrorsa*	May Be At Risk			
Richardson's Sedge	*Carex richardsonii*	Sensitive			
Ross' Sedge	*Carex rossii*	Secure			
Swollen Beaked Sedge	*Carex rostrata*	Undetermined			
Pumpkin-fruited Sedge	*Carex rotundata*	Secure			
Rock Sedge	*Carex rupestris*	Secure			
Sartwell's Sedge	*Carex sartwellii*	Secure	ⓘ3		
Russet Sedge	*Carex saxatilis*	Secure			
Bulrush Sedge	*Carex scirpoidea*	Secure			

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Dry-spike Sedge	*Carex siccata*	Secure			
Long-style Sedge	*Carex stylosa*	Undetermined			
Hoppner's Sedge	*Carex subspathacea*	Secure			
Weak Arctic Sedge	*Carex supina*	Secure			
Many-headed Sedge	*Carex sychnocephala*	Sensitive			
Quill Sedge	*Carex tenera*	Presence Expected			
Sparse-flowered Sedge	*Carex tenuiflora*	Secure			
Shaved sedge	*Carex tonsa*	Presence Expected			
Bear Sedge	*Carex ursina*	Secure			
Northwest Territory Sedge	*Carex utriculata*	Secure			
Sheathed Sedge	*Carex vaginata*	Secure			
Little Green Sedge	*Carex viridula*	Secure			
Williams' Sedge	*Carex williamsii*	Secure			
White-scaled Sedge	*Carex xerantica*	Undetermined			
Needle Spikerush	*Eleocharis acicularis*	Secure			
Slender Spikerush	*Eleocharis elliptica*	May Be At Risk			
Bald Spikerush	*Eleocharis erythropoda*	Undetermined			
Long-headed Spikerush	*Eleocharis macrostachya*	Undetermined			
Soft-stem Spikerush	*Eleocharis mamillata*	Undetermined			
Common Spikerush	*Eleocharis palustris*	Secure			
Few-flowered Spikerush	*Eleocharis quinqueflora*	Secure			
One-Glume Spikerush	*Eleocharis uniglumis*	Sensitive			
Narrow-leaved Cotton-grass	*Eriophorum angustifolium*	Secure			
Short-anther Cotton-grass	*Eriophorum brachyantherum*	Secure			
Sheathed Cotton-grass	*Eriophorum callitrix*	Secure			
Slender Cotton-grass	*Eriophorum gracile*	Secure			
Rusty Cotton-grass	*Eriophorum russeolum*	Secure			
Schechzer's White Cotton-grass	*Eriophorum scheuchzeri*	Secure			
Tall Cotton-grass	*Eriophorum triste*	Secure	T[6]		
Tussock Cotton-grass	*Eriophorum vaginatum*	Secure			
Tassel Cotton-grass	*Eriophorum viridicarinatum*	Secure			
Pacific Kobresia	*Kobresia myosuroides*	Secure			
Siberian Kobresia	*Kobresia siberica*	Secure			
Simple Kobresia	*Kobresia simpliciuscula*	Secure			
White Beakrush	*Rhynchospora alba*	May Be At Risk			
Hard-stemmed Bulrush	*Schoenoplectus acutus*	Secure	ⓘ[5]		
Three-square Bulrush	*Schoenoplectus pungens*	May Be At Risk			

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Soft-stem Bulrush	*Schoenoplectus tabernaemontani*	Secure	ⓘ[5]		
Black-girdled Bulrush	*Scirpus atrocinctus*	Presence Expected			
Small-fruit Bulrush	*Scirpus microcarpus*	Secure			
Alpine Bulrush	*Trichophorum alpinum*	Secure			
Tufted Bulrush	*Trichophorum cespitosum*	Secure			
Rolland's Bulrush	*Trichophorum pumilum*	Secure	ⓘ[3]		
Cyperales – Poaceae					Grass-like herbs – Grasses
Richardson's Rice Grass	*Achnatherum richardsonii*	Presence Expected			
Crested Wheat Grass	*Agropyron cristatum*	Alien			
Siberian Wheat Grass	*Agropyron fragile*	Alien			
Spike Bentgrass	*Agrostis exarata*	Sensitive			
Black Bentgrass	*Agrostis gigantea*	Alien			
Northern Bentgrass	*Agrostis mertensii*	Secure			
Rough Bentgrass	*Agrostis scabra*	Secure			
Spreading Bentgrass	*Agrostis stolonifera*	Alien			
Short-awn Meadow-foxtail	*Alopecurus aequalis*	Secure			
Creeping Meadow-foxtail	*Alopecurus arundinaceus*	Alien			
Magellan Meadow-foxtail	*Alopecurus magellanicus*	Secure			
Field Meadow-foxtail	*Alopecurus pratensis*	Alien			
Arctic Sweet Grass	*Anthoxanthum arcticum*	Secure			
Vanilla Sweet Grass	*Anthoxanthum hirtum*	Secure			
Alpine Sweet Grass	*Anthoxanthum monticola*	Secure			
Broad-leaf Arctic-bent	*Arctagrostis latifolia*	Secure			
Pendant Grass	*Arctophila fulva*	Secure			
Wild Oats	*Avena fatua*	Alien			
Cultivated Oats	*Avena sativa*	Alien			
Hooker's Alpine Oat Grass	*Avenula hookeri*	May Be At Risk			
American Sloughgrass	*Beckmannia syzigachne*[c]	Secure			
Fringed Brome	*Bromus ciliatus*	Secure			
Meadow Brome	*Bromus commutatus*	Alien			
Soft Brome	*Bromus hordeaceus*	Alien			
Awnless Brome	*Bromus inermis*	Alien			
Pumpelly Brome	*Bromus pumpellianus*	Secure			
Corn brome	*Bromus squarrosus*	Alien			
Downy brome	*Bromus tectorum*	Alien			
Blue-jointed Reed Grass	*Calamagrostis canadensis*	Secure			
Circumpolar Reed Grass	*Calamagrostis deschampsioides*	Sensitive			

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Lapland Reed Grass	*Calamagrostis lapponica*	Secure			
Plains Reed Grass	*Calamagrostis montanensis*	Presence Expected			
Purple Reed Grass	*Calamagrostis purpurascens*	Secure			
Slim-stem Reed Grass	*Calamagrostis stricta*	Secure			
Slender Wood Reed Grass	*Cinna latifolia*	Secure	ⓘ3		
Moss Grass	*Coleanthus subtilis*	May Be At Risk			
Poverty Wild Oat Grass	*Danthonia spicata*	Sensitive			
Short-leaf Hairgrass	*Deschampsia brevifolia*	Secure			
Tufted Hairgrass	*Deschampsia cespitosa*	Secure			
Mackenzie Hairgrass	*Deschampsia mackenzieana*	May Be At Risk			
Sukatschew 's Hairgrass	*Deschampsia sukatschewii*	Secure	ⓘ2		
Coastal Salt Grass	*Distichlis spicata*	May Be At Risk			
Fisher's Tundra Grass	*Dupontia fisheri*	Secure			
Alaska Wild Rye	*Elymus alaskanus*	Secure			
Canada Nodding Wild Rye	*Elymus canadensis*	Sensitive			
Common Western Wild Rye	*Elymus glaucus*	Undetermined			
Streamside Wild Rye	*Elymus lanceolatus*	Undetermined			
Thick-spike Wild Rye	*Elymus macrourus*	Secure			
Creeping Wild Rye	*Elymus repens*	Alien			
Siberian Wild Rye	*Elymus sibiricus*	Alien			
Slender Wild Rye	*Elymus trachycaulus*[d]	Secure			
Violet Wild Rye	*Elymus violaceus*	Secure			
Rough Fescue	*Festuca altaica*	Secure			
Lobed Fescue	*Festuca auriculata*	May Be At Risk			
Baffin Fescue	*Festuca baffinensis*	Secure			
Short-leaved Fescue	*Festuca brachyphylla*	Secure			
Alaska Fescue	*Festuca brevissima*	May Be At Risk			
Arctic Fescue	*Festuca edlundiae*	Secure	ⓘ3		
High Arctic Fescue	*Festuca hyperborea*	Secure			
Tundra Fescue	*Festuca lenensis*	May Be At Risk			
Proliferous Fescue	*Festuca prolifera*	Undetermined			
Richardson's Red Fescue	*Festuca rubra*	Secure			
Rocky Mountain Fescue	*Festuca saximontana*	Secure			
Hard Fescue	*Festuca trachyphylla*	Alien			
Steppe Fescue	*Festuca valesiaca*	Alien			
Viviparous Fescue	*Festuca viviparoidea*	Undetermined			
Small Floating Manna Grass	*Glyceria borealis*	Secure			

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American Manna Grass	*Glyceria grandis*	Secure			
Mackenzie Valley Manna Grass	*Glyceria pulchella*	Secure			
Fowl Manna Grass	*Glyceria striata*	Secure			
Needle and Thread Grass	*Hesperostipa comata*	Undetermined			
Canadian Needle Grass	*Hesperostipa curtiseta*	Sensitive			
Fox-tail Barley	*Hordeum jubatum*	Secure			
Barley	*Hordeum vulgare*	Alien			
Oriental Koeler's Grass	*Koeleria asiatica*	May Be At Risk			
Prairie Koeler's Grass	*Koeleria macrantha*	Sensitive			
Downy Lyme Grass	*Leymus innovatus*	Secure			
American Lyme Grass	*Leymus mollis*	Secure			
Tall Rye Grass	*Lolium arundinaceum*	Alien			
Annual Rye Grass	*Lolium multiflorum*	Alien			
Perennial Rye Grass	*Lolium perenne*	Alien			
Spiked Muhly	*Muhlenbergia glomerata*	Secure	ⓘ[3]		
Green Muhly	*Muhlenbergia racemosa*	Undetermined			
Matted Muhly	*Muhlenbergia richardsonis*	Secure	ⓘ[3]		
Green Tussock Grass	*Nassella viridula*	May Be At Risk			
White-grained Mountain Rice Grass	*Oryzopsis asperifolia*	Secure	ⓘ[3]		
Common Panic Grass	*Panicum capillare*	Undetermined			
Reed Canary Grass	*Phalaris arundinacea*[e]	Undetermined			
Common Canary Grass	*Phalaris canariensis*	Alien			
Ice Grass	*Phippsia algida*	Secure			
Snow Grass	*Phippsia concinna*	Secure	T[6]		
Mountain Timothy	*Phleum alpinum*	Secure	ⓘ[3]		
Common Timothy	*Phleum pratense*	Alien			
Common Reed	*Phragmites australis*[f]	Undetermined			
Slender Short-awn Mountain-rice Grass	*Piptatheropsis pungens*	Secure			
Sabine's False Semaphore Grass	*Pleuropogon sabinei*	Secure			
Northern Bluegrass	*Poa abbreviata*	Secure			
Alpine Bluegrass	*Poa alpina*	Secure			
Sand Bluegrass	*Poa ammophila*	Sensitive	ⓘ[2]		
Annual Bluegrass	*Poa annua*	Alien			
Arctic Bluegrass	*Poa arctica*	Secure			
Flat-stem Bluegrass	*Poa compressa*	Alien			
White Bluegrass	*Poa glauca*	Secure			

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Hartz's Bluegrass	*Poa hartzii*	Secure			
Interior Blue Grass	*Poa interior*	Undetermined			
Fowl Bluegrass	*Poa palustris*	Secure			
Few-flowered Bluegrass	*Poa paucispicula*	Secure			
Porsild's Bluegrass	*Poa porsildii*	Secure	ⓘ[3]		
Kentucky Bluegrass	*Poa pratensis*[g]	Secure			
Polar Bluegrass	*Poa pseudoabbreviata*	May Be At Risk			
Curly Bluegrass	*Poa secunda*	Secure	ⓘ[3]		
Anderson's Alkali Grass	*Puccinellia andersonii*	Secure			
Northern Alkali Grass	*Puccinellia angustata*	Secure			
Arctic Alkali Grass	*Puccinellia arctica*	Secure			
Bank Island Alkalii Grass	*Puccinellia banksiensis*	May Be At Risk			G1G2 – 2011
Prince Patrick Alkali Grass	*Puccinellia bruggemannii*	Sensitive			
Speading Alkali Grass	*Puccinellia distans*	Alien			
Alaska Alkali Grass	*Puccinellia nutkaensis*	Undetermined			
Polar Nuttall's Alkali Grass	*Puccinellia nuttalliana*	Secure	ⓘ[3]		
Creeping Alkali Grass	*Puccinellia phryganodes*	Secure			
Tundra Alkaligrass	*Puccinellia tenella*	Undetermined			
Arctic Tussock Alkali Grass	*Puccinellia vaginata*	Secure	ⓘ[3]		
Vahl's Alkali Grass	*Puccinellia vahliana*	Secure			
False Melic Grass	*Schizachne purpurascens*	Secure			
Common River Grass	*Scolochloa festucacea*	Secure	∃[3]		
Cultivated Rye	*Secale cereale*	Alien			
Rough Bristlegrass	*Setaria verticillata*	Alien			
Green Bristlegrass	*Setaria viridis*	Alien			
Alkali Cordgrass	*Spartina gracilis*	Secure	ⓘ[3]		
Freshwater Cordgrass	*Spartina pectinata*	May Be At Risk			
Slender Wedgescale Grass	*Sphenopholis intermedia*	Secure			
Intermediate Quackgrass	*Thinopyrum intermedium*	Alien			
Siberian False Oat	*Trisetum sibiricum*	Presence Expected			
Narrow False Oat	*Trisetum spicatum*	Secure			
Bread Wheat	*Triticum aestivum*	Alien			
Arctic Hairgrass	*Vahlodea atropurpurea*	Secure	ⓘ[3]		
Brome Six-weeks Grass	*Vulpia bromoides*	Alien			
Juncales – Juncaceae					Rush-like herbs – Rushes
Northern Green Rush	*Juncus alpinoarticulatus*	Secure			
Arctic Rush	*Juncus arcticus*	Secure			
Baltic Rush	*Juncus balticus*	Secure	T6		
Two-flowered Rush	*Juncus biglumis*	Secure			
Toad Rush	*Juncus bufonius*	Secure			

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Chestnut Rush	*Juncus castaneus*	Secure			
Drummond Rush	*Juncus drummondii*	Secure			
Dudley's Rush	*Juncus dudleyi*	Sensitive			
Thread Rush	*Juncus filiformis*	Secure			
Long-styled Rush	*Juncus longistylis*	Undetermined			
Merten's Rush	*Juncus mertensianus*	Presence Expected			
Knotted Rush	*Juncus nodosus*	Secure			
Moor Rush	*Juncus stygius*	Sensitive			
Northern White Rush	*Juncus triglumis*	Secure			
Vasey Rush	*Juncus vaseyi*	Undetermined			
Curved Wood Rush	*Luzula arcuata*	Secure			
Northern Wood Rush	*Luzula confusa*	Secure			
Greenland Wood Rush	*Luzula groenlandica*	Secure			
Kjellman Woodrush	*Luzula kjellmaniana*	May Be At Risk	ⓘ[5]		
Common Wood Rush	*Luzula multiflora*	Secure			
Arctic Woodrush	*Luzula nivalis*	Secure			
Small-flowered Wood Rush	*Luzula parviflora*	Secure			
Rufous Wood Rush	*Luzula rufescens*	May Be At Risk			
Spiked Wood Rush	*Luzula spicata*	Secure			
Wahlenber's Wood Rush	*Luzula wahlenbergii*	Undetermined			
Liliales – Iridaceae					Lily-like plants – Irises
Strict Blue-eyed Grass (Iris)	*Sisyrinchium montanum*	Secure			
Northern Blue-eyed-grass	*Sisyrinchium septentrionale*	Undetermined	∃[2]		
Liliales – Liliaceae					Lily-like plants – Lilies
Welsh Onion	*Allium fistulosum*	Alien			
Wild Chives	*Allium schoenoprasum*	Secure			

Fireweed
Photo Credit: J Hollett

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Mountain Death Camas	*Anticlea elegans*	Secure			
Common Alpine Lily	*Lloydia serotina*	Secure			
Wild Lily-of-the-Valley	*Maianthemum canadense*	Secure	ⓘ[5]		
Large False Solomon's Seal	*Maianthemum racemosum*	Undetermined			
Starry False Solomon's Seal	*Maianthemum stellatum*	Secure			
Three-leaved False Solomon's Seal	*Maianthemum trifolium*	Secure			
Clasping Twisted Stalk	*Streptopus amplexifolius*	Sensitive			
Northern False Asphodel	*Tofieldia coccinea*	Secure			
Scotch False Asphodel	*Tofieldia pusilla*	Secure			
Sticky False Asphodel	*Triantha glutinosa*	Secure			
American False Hellebore	*Veratrum viride*	Secure	ⓘ[3]		
Najadales – Juncaginaceae					Naiad-like plants – Arrowgrasses
Seaside Arrowgrass	*Triglochin maritima*	Secure			
Marsh Arrowgrass	*Triglochin palustris*	Secure			
Najadales – Najadaceae					Naiad-like plants – Naiads
Slender Naiad	*Najas flexilis*	Sensitive			
Najadales – Potamogetonaceae					Naiad-like plants – Pondweeds
Alpine Pondweed	*Potamogeton alpinus*	Secure			
Leafy Pondweed	*Potamogeton foliosus*	Sensitive			
Fries Pondweed	*Potamogeton friesii*	Secure			
Grassy Pondweed	*Potamogeton gramineus*	Secure			
Illinois Pondweed	*Potamogeton illinoensis*	May Be At Risk			
Floating Pondweed	*Potamogeton natans*	Sensitive			
Blunt-leaf Pondweed	*Potamogeton obtusifolius*	Sensitive			
White-stem Pondweed	*Potamogeton praelongus*	Secure			
Small Pondweed	*Potamogeton pusillus*	Secure			
Richardson's Pondweed	*Potamogeton richardsonii*	Secure			
Flatleaf Pondweed	*Potamogeton robbinsii*	May Be At Risk			
Straightleaf Pondweed	*Potamogeton strictifolius*	Secure			
Yenisei River Pondweed	*Potamogeton subsibiricus*	Sensitive			
Flatstem Pondweed	*Potamogeton zosteriformis*	Secure	ⓘ[5]		
Slender Pondweed	*Stuckenia filiformis*	Secure			
Sago Pondweed	*Stuckenia pectinata*	Secure	ⓘ[3]		
Sheathed Pondweed	*Stuckenia vaginata*	Secure			
Najadales – Ruppiaceae					Naiad-like plants – Wigeon-grasses
Wigeon-grass	*Ruppia cirrhosa*	Undetermined	∃[3]		

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Najadales – Scheuchzeriaceae					Naiad-like plants – Pod grasses
Pod Grass	*Scheuchzeria palustris*	Secure			
Najadales – Zannichelliaceae					Naiad-like plants – Horned Pondweeds
Horned Pondweed	*Zannichellia palustris*	Sensitive			
Orchidales – Orchidaceae					Orchid-like plants – Orchids
Dragon's Mouth	*Arethusa bulbosa*	May Be At Risk	#		
Caypso	*Calypso bulbosa*	Secure			
Early Coral Root	*Corallorhiza trifida*	Secure			
Spotted Lady's-slipper	*Cypripedium guttatum*	Secure			
Yellow Lady's-slipper	*Cypripedium parviflorum*	Secure			
Sparrow's-egg Lady's-slipper	*Cypripedium passerinum*	Secure			
Long-bract Orchid	*Dactylorhiza viridis*	Secure	ⓘ[3]		
Small Round-leaved Orchis	*Galearis rotundifolia*	Secure			
Lesser Rattlesnake Plantain	*Goodyera repens*	Secure			
Loesel's Twayblade	*Liparis loeselii*	May Be At Risk			
White Adder's-mouth	*Malaxis monophyllos*	May Be At Risk			
Bog Adder's-mouth	*Malaxis paludosa*	May Be At Risk			
Northern Twayblade	*Neottia borealis*	Secure			
Heart-leaved Twayblade	*Neottia cordata*	Sensitive			
Tall Northern Green Orchid	*Platanthera aquilonis*	Secure			
White Bog Orchid	*Platanthera dilatata*	May Be At Risk			
Blunt-leaved Bog Orchid	*Platanthera obtusata*	Secure			
Small Round-leaved Bog Orchid	*Platanthera orbiculata*	Sensitive			
Hooded Ladies'-tresses	*Spiranthes romanzoffiana*	Secure			
Typhales – Sparganiaceae					Catttail-like plants – Bur-reeds
Narrow-leaf Bur-reed	*Sparganium angustifolium*	Secure			
Unbranched Bur-reed	*Sparganium emersum*	Secure			
Giant Bur-reed	*Sparganium eurycarpum*	Undetermined			
Northern Bur-reed	*Sparganium hyperboreum*	Secure			
Small Bur-reed	*Sparganium natans*	Secure			
Typhales – Typhaceae					Catttail-like plants – Catttails
Broad-leaf Cattail	*Typha latifolia*	Secure			
Magnoliophyta – Dicotyledoneae					Flowering plants – Dicots
Apiales – Apiaceae					Carrot-like plants – Parsnips
Seaside Angelica	*Angelica lucida*	May Be At Risk			
American Thoroughwax	*Bupleurum americanum*	Secure			
Wild Caraway	*Carum carvi*	Alien	#		
Bulbous Water-hemlock	*Cicuta bulbifera*	Secure			

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Spotted Water-hemlock	*Cicuta maculata*	Secure			
Mackenzie's Water-hemlock	*Cicuta virosa*	Secure			
Jakutsk Snow-parsley	*Cnidium cnidiifolium*	Secure			
Cow Parsnip	*Heracleum maximum*	Secure			
Blunt Fruited Sweet-Cicely	*Osmorhiza depauperata*	Undetermined			
Wild Parsnip	*Pastinaca sativa*	Alien			
Macoun's Podistera	*Podistera macounii*	May Be At Risk			
Black Sanicle	*Sanicula marilandica*	Presence Expected			
Water Parsnip	*Sium suave*	Secure			
Apiales – Araliaceae					Carrot-like plants – Sarsaparilla
Wild Sarsaparilla	*Aralia nudicaulis*	Secure			
Asterales – Asteraceae					Daisy-like plants – Asters
Woolly Yarrow	*Achillea borealis*	Secure	T[6]		
Common Yarrow	*Achillea millefolium*[c]	Secure			
Pearl Yarrow	*Achillea ptarmica*	Alien			
Orange False Dandelion	*Agoseris aurantiaca*	Undetermined			
Pale False Dandelion	*Agoseris glauca*	Sensitive			
Marsh Alkali Aster	*Almutaster pauciflorus*	May Be At Risk			
Annual Ragweed	*Ambrosia artemisiifolia*[h]	Alien			
Pearly Everlasting	*Anaphalis margaritacea*	Sensitive	ⓘ[2]		
Alpine Pussytoes	*Antennaria alpina*	Secure			
Dense-leaved Pussytoes	*Antennaria densifolia*	Secure			
Fries' Pussytoes	*Antennaria friesiana*	Secure			
Rocky Mountain Pussytoes	*Antennaria media*	Undetermined			
Small-leaf Pussytoes	*Antennaria microphylla*	Secure			
Pygmy Pussytoes	*Antennaria monocephala*	Secure			
Field Pussytoes	*Antennaria neglecta*	Secure	ⓘ[3]		
Showy Pussytoes	*Antennaria pulcherrima*	Secure			
Rosy Pussytoes	*Antennaria rosea*	Secure			
Arctic Daisy	*Arctanthemum arcticum*	Secure	ⓘ[3]		
Narrowleaf Arnica	*Arnica angustifolia*	Secure			
Leafy Arnica	*Arnica chamissonis*	Secure			
Heart-leaved Arnica	*Arnica cordifolia*	Undetermined			
Snow Arnica	*Arnica griscomii*	Secure			
Lance-leaf Arnica	*Arnica lanceolata*	Undetermined			
Mountain Arnica	*Arnica latifolia*	Sensitive			
Lessing's Arnica	*Arnica lessingii*	Secure			
Long-leaved Arnica	*Arnica lonchophylla*	Secure			

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Hairy Arnica	*Arnica mollis*	Undetermined			
Alaska Sagebrush	*Artemisia alaskana*	May Be At Risk			
Biennial Sagebrush	*Artemisia biennis*	Alien			
Boreal Sagebrush	*Artemisia borealis*	Secure			
Dragon Sagebrush	*Artemisia dracunculus*	May Be At Risk			
Prairie Sagebrush	*Artemisia frigida*	Secure			
Purple Sagebrush	*Artemisia globularia*	Presence Expected			
Pacific Alpine Sagebrush	*Artemisia glomerata*	Presence Expected			
Three-fork Sagebrush	*Artemisia hyperborea*	Secure	ⓘ3		
White Sagebrush	*Artemisia ludoviciana*	May Be At Risk			
Arctic Sagebrush	*Artemisia norvegica*	Secure			
Tilesius Sagebrush	*Artemisia tilesii*	Secure			
Elegant Hawksbeard	*Askellia elegans*	Secure	ⓘ5		
Dwarf Alpine Hawksbeard	*Askellia pygmaea*	Secure			
Alpine Aster	*Aster alpinus*	Secure			
English Daisy	*Bellis perennis*	Alien			
Nodding Beggarticks	*Bidens cernua*	Secure			
Great Northern Aster	*Canadanthus modestus*	Undetermined	ⓘ10		
Creeping Thistle	*Cirsium arvense*	Alien			
Drummond Thistle	*Cirsium drummondii*	Sensitive			
Leafy Thistle	*Cirsium foliosum*	May Be At Risk			
Narrow-leaf Hawksbeard	*Crepis tectorum*	Alien			
Gorman's Dwarf Primrose	*Douglasia gormanii*	Undetermined			
Bitter Fleabane	*Erigeron acris*	Secure			
Tufted Fleabane	*Erigeron caespitosus*	Presence Expected			
Canada Horseweed	*Erigeron canadensis*	Alien			
Dwarf Mountain Fleabane	*Erigeron compositus*	Secure			
Denali Fleabane	*Erigeron denalii*	Sensitive			
Angular Fleabane	*Erigeron elatus*	Secure			
Smooth Fleabane	*Erigeron glabellus*	Secure			
Low Fleabane	*Erigeron humilis*	Secure			
Hyssop-leaved Fleabane	*Erigeron hyssopifolius*	Secure			
Short-ray Fleabane	*Erigeron lonchophyllus*	Secure			
Snow Fleabane	*Erigeron nivalis*	Undetermined			
Philadelphia Fleabane	*Erigeron philadelphicus*	Secure			
Porsild's Fleabane	*Erigeron porsildii*	Secure			
One-flower Fleabane	*Erigeron uniflorus*	Secure			
Yukon Fleabane	*Erigeron yukonensis*	May Be At Risk			
Siberian Aster	*Eurybia sibirica*	Secure			

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Grass-leaved Goldenrod	*Euthamia graminifolia*	Secure	ⓘ[3]		
Great Blanket-flower	*Gaillardia aristata*	Alien	ⓘ[4]		
Low Cudweed	*Gnaphalium uliginosum*	Alien			
Broadleaf Gumweed	*Grindelia hirsutula*	May Be At Risk			
Curly-cup Gumweed	*Grindelia squarrosa*	Alien	ⓘ[5]		
Common Sneezeweed	*Helenium autumnale*	Secure			
Common Sunflower	*Helianthus annuus*	Alien			
White-flowered Hawkweed	*Hieracium albiflorum*	May Be At Risk			
Woolly Hawkweed	*Hieracium triste*	Secure			
Umbellate Hawkweed	*Hieracium umbellatum*	Secure			
Entire-leaf Daisy	*Hulteniella integrifolia*	Secure			
Prickly Lettuce	*Lactuca serriola*	Alien			
Ox-eye Daisy	*Leucanthemum vulgare*	Alien			
Pineapple Weed	*Matricaria discoidea*	Alien			
Tartarian Lettuce	*Mulgedium pulchellum*	Secure			
Dwarf Arctic Groundsel	*Packera cymbalaria*	Secure			
Boreal Groundsel	*Packera hyperborealis*	Secure			
Rayless Mountain Groundsel	*Packera indecora*	Secure			
Ogotoruk Creek Groundsel	*Packera ogoturukensis*	May Be At Risk			
Alpine Goundsel	*Packera pauciflora*	Sensitive			
Balsam Groundsel	*Packera paupercula*	Secure			
Rocky Mountain Groundsel	*Packera streptanthifolia*	Secure			
Arctic Sweet Coltsfoot	*Petasites frigidus*	Secure			
Goldenweed	*Pyrrocoma uniflora*	May Be At Risk			
Narrow-leaf Saw-wort	*Saussurea angustifolia*	Secure			
Autumn Hawkbit	*Scorzoneroides autumnalis*	Alien	#		
Desert Ragwort	*Senecio eremophilus*	Sensitive			
Black-tip Ragwort	*Senecio lugens*	Secure			
Mount Sheldon Ragwort	*Senecio sheldonensis*	May Be At Risk			G3 – 2012
Arrow-leaf Ragwort	*Senecio triangularis*	Secure			
Common Ragwort	*Senecio vulgaris*	Alien			
Elegant Goldenrod	*Solidago lepida*	Secure			
Alpine Multiray Goldenrod	*Solidago multiradiata*	Secure			
Sticky Goldenrod	*Solidago simplex*	Secure			
Field Sow Thistle	*Sonchus arvensis*	Alien			
Prickly Sow Thistle	*Sonchus asper*	Alien	#		
Common Sow-thistle	*Sonchus oleraceus*[i]	Alien			
Boreal Aster	*Symphyotrichum boreale*	Secure			
Alkali Aster	*Symphyotrichum ciliatum*	Secure			

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Lindley's Aster	*Symphyotrichum ciliolatum*	Secure			
White Heath Aster	*Symphyotrichum ericoides*	Secure			
White Prairie Aster	*Symphyotrichum falcatum*	Secure			
Smooth Blue Aster	*Symphyotrichum laeve*	Presence Expected			
Lance-leaved Aster	*Symphyotrichum lanceolatum*	Undetermined			
Nahanni Aster	*Symphyotrichum nahanniense*	Sensitive	A, ⓘ[2]		Special Concern – 2014 / G1 – 2012
Purple-stemmed Aster	*Symphyotrichum puniceum*	Undetermined			
Pygmy Wood Aster	*Symphyotrichum pygmaeum*	Secure	ⓘ[2]		
Western Mountain Aster	*Symphyotrichum spathulatum*	Undetermined	∃[3]		
Yukon Aster	*Symphyotrichum yukonense*	May Be At Risk			G3 – 2003
Floccose Tansy	*Tanacetum huronense*	May Be At Risk			
Common Tansy	*Tanacetum vulgare*	Alien			
Horned Dandelion	*Taraxacum ceratophorum*	Secure			
Red-seeded Dandelion	*Taraxacum erythrospermum*	Alien			
Holman Dandelion	*Taraxacum holmenianum*	Secure			

Woolly Lousewort Photo Credit: J Nagy

Arctic Lupine Photo Credit: J Nagy

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High Arctic Dandelion	*Taraxacum hyparcticum*	Secure			
Lapland Dandelion	*Taraxacum lapponicum*	Undetermined			
Common Dandelion	*Taraxacum officinale*	Alien			
Northern Dandelion	*Taraxacum phymatocarpum*	Secure			
Rock Dandelion	*Taraxacum scopulorum*	Undetermined			
Arctic Groundsel	*Tephroseris frigida*	Secure			
Kjellman's Groundsel	*Tephroseris kjellmanii*	Secure			
Twice-hairy Groundsel	*Tephroseris lindstroemii*	Sensitive			
Marsh Groundsel	*Tephroseris palustris*	Secure			
Yukon Groundsel	*Tephroseris yukonensis*	Secure			
Yellow Goatsbeard	*Tragopogon dubius*	Alien			
Scentless Chamomile	*Tripleurospermum inodorum*	Alien			
Seashore Chamomile	*Tripleurospermum maritimum*	Secure			
Callitrichales – Callitrichaceae					Waterstartwort-like plants – Waterstarworts
Northern Waterstarwort	*Callitriche hermaphroditica*	Secure			
Large Waterstarwort	*Callitriche heterophylla*	Undetermined			
Marsh Waterstarwort	*Callitriche palustris*	Secure			
Callitrichales – Hippuridaceae					Waterstartwort-like plants – Marestails
Lance-leaved Marestail	*Hippuris lanceolata*	Secure	T[6]		
Four-leaved Marestail	*Hippuris tetraphylla*	Sensitive			
Common Marestail	*Hippuris vulgaris*	Secure			
Campanulales – Campanulaceae					Harebell-like plants – Harebells
Alaska Bellflower	*Campanula alaskana*	Undetermined	T[4]		
Yukon Bellflower	*Campanula aurita*	Secure			
Giesecke Bellflower	*Campanula gieseckeana*	Undetermined	T[6]		
Mountain Bellflower	*Campanula lasiocarpa*	Secure			
Arctic Harebell	*Campanula uniflora*	Secure			
Water Lobelia	*Lobelia dortmanna*	May Be At Risk			
Kalm's Lobelia	*Lobelia kalmii*	Secure			
Capparales – Brassicaceae					Caper-like plants – Mustards
Arctic Cress	*Arabidopsis arenicola*	Sensitive			
Lyre-leaf Cress	*Arabidopsis lyrata*	Secure			
Western Hairy Rockcress	*Arabis pycnocarpa*	Secure			
American Wintercress	*Barbarea orthoceras*	Secure			
Hoary False-alyssum	*Berteroa incana*	Alien			
Calder's Rockcress	*Boechera calderi*	May Be At Risk			

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Limestone Rockcress	*Boechera grahamii*	Secure			
Reflexed Rockcress	*Boechera retrofracta*	Secure			
Drummond's Rockcress	*Boechera stricta*	Secure	ⓘ[3]		
Chinese Mustard	*Brassica juncea*	Alien			
Turnip	*Brassica napus*	Alien			
Bird Rape	*Brassica rapa*	Alien			
Smooth Rockcress	*Braya glabella*	Secure			
Alpine Northern Rockcress	*Braya humilis*	Secure			
Hairy Braya	*Braya pilosa*	At Risk	A, ⓘ[2]	Threatened – 2012	Endangered – 2013/ G2 – 2013
Greenland Rockcress	*Braya thorild-wulffii*	Secure	ⓘ[3]		
Large-seeded False Flax	*Camelina sativa*	Alien			
Shepherd's Purse	*Capsella bursa-pastoris*	Alien			
Alpine Bittercress	*Cardamine bellidifolia*	Secure			
Richardson's Bittercress	*Cardamine digitata*	Secure			
Small-leaved Bittercress	*Cardamine microphylla*	May Be At Risk			
Cuckooflower Bittercress	*Cardamine nymanii*	Secure			
Small-flowered Bittercress	*Cardamine parviflora*	May Be At Risk			
Pennsylvania Bittercress	*Cardamine pensylvanica*	Sensitive			
Purple Bittercress	*Cardamine purpurea*	Presence Expected			
Few-seeded Bittercress	*Cardamine umbellata*	Sensitive			
Scurvy Grass	*Cochlearia groenlandica*	Secure			
Green Tansy Mustard	*Descurainia incana*	Secure			
Cut-leaved Tansy Mustard	*Descurainia incisa*	Alien	T[6]		
Pinate Tansy Mustard	*Descurainia pinnata*	May Be At Risk			
Herb Sophia	*Descurainia sophia*	Alien			
Northern Tansy Mustard	*Descurainia sophioides*	Secure			
Slender Whitlow-grass	*Draba albertina*	May Be At Risk			
Arctic Draba	*Draba arctica*	Sensitive	T[6]		
Fell-field Whitlow-grass	*Draba arctogena*	Sensitive	ⓘ[2]		
Golden Draba	*Draba aurea*	Secure			
Boreal Whitlow-grass	*Draba borealis*	Secure	ⓘ[3]		
Canescent Whitlow-grass	*Draba cana*	Secure			
Gray-Leaf Whitlow-grass	*Draba cinerea*	Secure			
Flat-top Whitlow-grass	*Draba corymbosa*	Secure			
Snowbed Whitlow-grass	*Draba crassifolia*	Sensitive			
White Arctic Whitlow-grass	*Draba fladnizensis*	Secure	ⓘ[3]		
Rock Whitlow-grass	*Draba glabella*	Secure			
Yellowstone Whitlow-grass	*Draba incerta*	May Be At Risk			
Long-stalk Whitlow-grass	*Draba juvenilis*	Secure			

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Milky Whitlow-grass	*Draba lactea*	Secure			
Lance-pod Whitlow-grass	*Draba lonchocarpa*	Sensitive			
Macoun's Whitlow-grass	*Draba macounii*	Secure	ⓘ[3]		
Small-flowered Whitlow-grass	*Draba micropetala*	Secure			
Wood Whitlow-grass	*Draba nemorosa*	Secure	ⓘ[3]		
Yellow Arctic Whitlow-grass	*Draba nivalis*	Secure			
Norwegian Whitlow-grass	*Draba norvegica*	Undetermined			
Canadian Arctic Whitlow-grass	*Draba oblongata*	Secure			
Ogilvie Range Whitlow-grass	*Draba ogilviensis*	May Be At Risk			
Few-seeded Whitlow-grass	*Draba oligosperma*	Secure	ⓘ[3]		
Palander's Whitlow-grass	*Draba palanderiana*	Secure	ⓘ[3]		
Few-flowered Whitlow-grass	*Draba pauciflora*	Sensitive	ⓘ[2]		
Pilose Draba	*Draba pilosa*	Secure	T[6]		
Porsild's Whitlow-grass	*Draba porsildii*	Sensitive	ⓘ[2]		
Tall Whitlow-grass	*Draba praealta*	Secure			
Simmons Draba	*Draba simmonsii*	Sensitive	T[6]		
Alaska Whitlow-grass	*Draba stenoloba*	Secure			
Ellesmere Whitlow-grass	*Draba subcapitata*	Secure			
Common Dog Mustard	*Erucastrum gallicum*	Alien			
Worm-seed Wallflower	*Erysimum cheiranthoides*	Alien			
Shy Wallflower	*Erysimum coarctatum*	Secure			
Pallas's Wallflower	*Erysimum pallasii*	Secure			
Edward Mock Wallflower	*Eutrema edwardsii*	Secure			
Saltwater Cress	*Eutrema salsugineum*	Sensitive	ⓘ[2]		
Dame's Rocket	*Hesperis matronalis*	Alien	∃[6]		
Dense-flower Peperwort	*Lepidium densiflorum*	Alien			
Branched Pepperwort	*Lepidium ramosissimum*[c]	Secure			
Garden Pepperwort	*Lepidium sativum*	Alien			
Poor-man's Peppergrass	*Lepidium virginicum*	Alien	#		
Yellow Ball Mustard	*Neslia paniculata*	Alien			
Arctic False-wallflower	*Parrya arctica*	Secure			
Naked-stemmed Wallflower	*Parrya nudicaulis*	Secure			
Arctic Bladderpod	*Physaria arctica*	Secure			
Calder's Bladderpod	*Physaria calderi*	May Be At Risk			
Hoary Yellowcress	*Rorippa barbareifolia*	May Be At Risk			
Persistent-sepal Yellowcress	*Rorippa calycina*[c]	Undetermined			
Mackenzie River Yellowcress	*Rorippa crystallina*	May Be At Risk	ⓘ[5]		
Bog Yellowcress	*Rorippa palustris*	Secure			
Corn Mustard	*Sinapis arvensis*	Alien			

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Tall Hedge Mustard	*Sisymbrium altissimum*	Alien			
False London Rocket	*Sisymbrium loeselii*	Alien			
Boreal Smelowskia	*Smelowskia borealis*	Secure	ⓘ[3]		
Alpine Smelowskia	*Smelowskia media*	Sensitive			
Water Awlwort	*Subularia aquatica*	Secure	ⓘ[3]		
Arctic Pennycress	*Thlaspi arcticum*	Presence Expected			
Field Pennycress	*Thlaspi arvense*	Alien			
Soft Transberingian Rockcress	*Transberingia bursifolia*	Secure			
Caryophyllales – Amaranthaceae					Pink-like plants – Amaranths
Green Amaranth	*Amaranthus retroflexus*	Alien			
Caryophyllales – Caryophyllaceae					Pink-like plants – Pinks
Creeping Sandwort	*Arenaria humifusa*	Secure			
Long-stemmed Sandwort	*Arenaria longipedunculata*	Sensitive			
Alpine Chickweed	*Cerastium alpinum*	Undetermined			
Arctic Chickweed	*Cerastium arcticum*	Secure	ⓘ[5]		
Field Mouse-ear Chickweed	*Cerastium arvense*[c]	Secure			
Bering Sea Chickweed	*Cerastium beeringianum*	Secure			
Bialynick's Chickweed	*Cerastium bialynickii*	Undetermined			
Common Chickweed	*Cerastium fontanum*	Alien			
Great Chickweed	*Cerastium maximum*	May Be At Risk			
Nodding Chickweed	*Cerastium nutans*	Alien			
Regel's Chickweed	*Cerastium regelii*	Secure			
Northern Pink	*Dianthus repens*	Presence Expected			
Slender Mountain Sandwort	*Eremogone capillaris*	Secure			
Low Baby's-breath	*Gypsophila muralis*	Alien			
Tall Baby's-breath	*Gypsophila paniculata*	Alien			
Seabeach Sandwort	*Honckenya peploides*	Secure			
Arctic Stitchwort	*Minuartia arctica*	Secure			
Mountain Stitchwort	*Minuartia biflora*	Secure			
Alpine Stitchwort	*Minuartia obtusiloba*	Secure	ⓘ[3]		
Yukon Stitchwort	*Minuartia yukonensis*	Secure	ⓘ[3]		
Blunt-leaved Sandwort	*Moehringia lateriflora*	Secure			
Large-Leaved Sandwort	*Moehringia macrophylla*	Sensitive			
Long-pod Stitchwort	*Pseudocherleria macrocarpa*	May Be At Risk			
Rock Stitchwort	*Sabulina dawsonensis*	Secure			
Elegant Stitchwort	*Sabulina elegans*	Secure			
Ross' Stitchwort	*Sabulina rossii*	Secure			
Boreal Stitchwort	*Sabulina rubella*	Secure			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Bog Stitchwort	*Sabulina stricta*	Sensitive			
Snow Pearlwort	*Sagina nivalis*	Secure			
Knotted Pearlwort	*Sagina nodosa*	Sensitive			
Procumbent Pearlwort	*Sagina procumbens*	Alien			
Alpine Pearlwort	*Sagina saginoides*	Sensitive			
Moss Campion	*Silene acaulis*	Secure			
Balkan Cathfly	*Silene csereii*	Alien			
Drummond's Campion	*Silene drummondii*	Presence Expected	∃[5]		
Arctic Campion	*Silene involucrata*	Secure			
Menzies Pink Campion	*Silene menziesii*	Secure	ⓘ[3]		
Ostenfeld's Campion	*Silene ostenfeldii*	Secure			
Creeping Campion	*Silene repens*	Secure	ⓘ[3]		
Sorensen's Campion	*Silene sorensenis*	Secure	ⓘ[3]		
Apetalous Campion	*Silene uralensis*	Secure			
Corn Spurrey	*Spergula arvensis*	Alien			
Saltmarsh Sandspurry	*Spergularia salina*	May Be At Risk			
Boreal Stitchwort	*Stellaria borealis*	Secure			

Apetalous Campion
Photo Credit: B Decker

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Northern Bog Starwort	*Stellaria calycantha*	Undetermined			
Fleshy Stitchwort	*Stellaria crassifolia*	Secure			
Saltmarch Sandwort	*Stellaria humifusa*	Secure			
Longleaf Stitchwort	*Stellaria longifolia*	Secure			
Long-stalked Stitchwort	*Stellaria longipes*	Secure			
Common Starwort	*Stellaria media*	Alien			
Umbellate Stitchwort	*Stellaria umbellata*	May Be At Risk			
Arctic-flower (Merkia)	*Wilhelmsia physodes*	Secure			
Caryophyllales – Chenopodiaceae					Pink-like plants – Goosefoot and relatives
Thick-leaved Orache	*Atriplex dioica*	May Be At Risk			
Gmelin's Orache	*Atriplex gmelinii*	May Be At Risk			
Garden Orache	*Atriplex hortensis*	Alien			
Spreading Orache	*Atriplex patula*	Alien			
Russian Pigweed	*Axyris amaranthoides*	Alien			
Mexican Summer-cypress	*Bassia scoparia*	Alien			
Strawberry-blite	*Blitum capitatum*	Secure	∃[3]		
Nuttall's Povertyweed	*Blitum nuttallianum*	Undetermined			
Maple-leaved Goosefoot	*Chenopodiastrum simplex*	Alien			
Lamb's Quarters	*Chenopodium album*	Alien			
Berlandier's Goosefoot	*Chenopodium berlandieri*	Secure			
Narrowleaf Goosefoot	*Chenopodium leptophyllum*	Undetermined			
Hooker's Bugseed	*Corispermum hookeri*	Sensitive			
Alaskan Bugseed	*Corispermum ochotense*	Secure	ⓘ[5]		
Hairy Bugseed	*Corispermum villosum*	Alien			
Rocky Mountain Goosefoot	*Oxybasis glauca*[i]	Sensitive			
Red Pigweed	*Oxybasis rubra*	Sensitive	ⓘ[2]		
Red Glasswort	*Salicornia rubra*	May Be At Risk			
Garden Spinach	*Spinacia oleracea*	Alien			
Horned Sea-blite	*Suaeda calceoliformis*	Secure			
White Sea-blite	*Suaeda maritima*	Sensitive			
Caryophyllales – Portulacaceae					Pink-like plants – Spring beauties
Alpine Spring Beauty	*Claytonia megarhiza*	May Be At Risk			
Alaska Spring Beauty	*Claytonia sarmentosa*	Presence Expected	∃[5]		
Tuberous Spring Beauty	*Claytonia tuberosa*	Secure	ⓘ[3]		
Water Blinks	*Montia fontana*	Secure	ⓘ[3]		
Cornales – Cornaceae					Dogwood-like plants – Dogwoods
Dwarf Dogwood	*Cornus canadensis*	Secure			
Red Osier Dogwood	*Cornus stolonifera*	Secure			
Swedish Dogwood	*Cornus suecica*	May Be At Risk			

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Diapensiales – Diapensiaceae					Diapensias – Diapensias
Lapland Diapensia	*Diapensia lapponica*	Undetermined	T[4]		
Alaskan Pincushion	*Diapensia obovata*	Secure	T[6]		
Dipsacales – Adoxaceae					Teasel-like plants – Musk-roots
Musk-root	*Adoxa moschatellina*	Undetermined			
Dipsacales – Caprifoliaceae					Teasel-like plants – Honeysuckles
Twinflower	*Linnaea borealis*	Secure			
Mountain Honeysuckle	*Lonicera dioica*	Secure			
Tatarian Honeysuckle	*Lonicera tatarica*	Alien	#		
White Snowberry	*Symphoricarpos albus*	Undetermined			
Northern Snowberry	*Symphoricarpos occidentalis*	Secure			
Squashberry	*Viburnum edule*	Secure			
Dipsacales – Valerianaceae					Teasel-like plants – Valerians
Clustered Valerian	*Valeriana capitata*	Secure			
Wood Valerian	*Valeriana dioica*	Sensitive			
Sitka Valerian	*Valeriana sitchensis*	Secure	ⓘ[3]		
Ericales – Empetraceae					Blueberry-like plants – Crowberries
Black Crowberry	*Empetrum nigrum*	Secure			
Ericales – Ericaceae					Blueberry-like plants – Blueberries and relatives
Bog Rosemary	*Andromeda polifolia*	Secure			
Common Bearberry (Kinnikinnik)	*Arctostaphylos uva-ursi*	Secure			
Alpine Bearberry	*Arctous alpina*	Secure			
Red Bearberry	*Arctous rubra*	Secure			
Arctic White Heather	*Cassiope tetragona*	Secure			
Leatherleaf	*Chamaedaphne calyculata*	Secure			
Moss Heather	*Harrimanella hypnoides*	May Be At Risk			
Alpine Laurel	*Kalmia microphylla*	Secure	ⓘ[5]		
Bog Laurel	*Kalmia polifolia*	Secure			
Alpine Azalea	*Kalmia procumbens*	Secure			
Purple Mountain Heather	*Phyllodoce caerulea*	Sensitive			
Pink Mountain Heather	*Phyllodoce empetriformis*	Secure	ⓘ[3]		
Yellow Moutnain Heather	*Phyllodoce glanduliflora*	Secure	ⓘ[3]		
Common Labrador Tea	*Rhododendron groenlandicum*	Secure			
Lapland Rosebay	*Rhododendron lapponicum*	Secure			
Narrow-leaved Labrador Tea	*Rhododendron tomentosum*	Secure			

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Dwarf Bilberry	*Vaccinium caespitosum*	Undetermined			
Mountain Huckleberry	*Vaccinium membranaceum*	May Be At Risk			
Velvetleaf Blueberry	*Vaccinium myrtilloides*	Sensitive			
Oval-leaved Blueberry	*Vaccinium ovalifolium*	Undetermined			
Small Cranberry	*Vaccinium oxycoccos*	Secure			
Alpine Bilberry	*Vaccinium uliginosum*	Secure			
Rock Cranberry (Lingonberry)	*Vaccinium vitis-idaea*	Secure			
Ericales – Monotropaceae					Blueberry-like plants – Ghost plants
Ghost Pipe	*Monotropa uniflora*	Undetermined			
Ericales – Pyrolaceae					Blueberry-like plants – Wintergreens
Pipsissewa	*Chimaphila umbellata*	May Be At Risk			
One-flowered Wintergreen	*Moneses uniflora*	Secure			
One-sided Wintergreen	*Orthilia secunda*	Secure			
Pink Pyrola	*Pyrola asarifolia*	Secure			
Greenish-flowered Pyrola	*Pyrola chlorantha*	Secure			
Arctic Pyrola	*Pyrola grandiflora*	Secure			
Lesser Pyrola	*Pyrola minor*	Secure			
Fabales – Fabaceae					Pea-like plants – Peas
Meadow Milk-vetch	*Astragalus agrestis*	Secure	ⓘ[3]		
Alpine Milk-vetch	*Astragalus alpinus*	Secure			
American Milk-vetch	*Astragalus americanus*	Secure			
Indian Milk-vetch	*Astragalus australis*	Secure			
Bodin's Milk-vetch	*Astragalus bodinii*	Secure			
Canadian Milk-vetch	*Astragalus canadensis*	Sensitive			
Elegant Milk-vetch	*Astragalus eucosmus*	Secure			
Rattle Milk-vetch	*Astragalus laxmannii*	Secure	ⓘ[3]		
Loose-flowered Milk-vetch	*Astragalus tenellus*	Secure			
Tundra Milk-vetch	*Astragalus umbellatus*	Secure			
Siberian Pea-tree	*Caragana arborescens*	Alien			
Alpine Sweet-vetch	*Hedysarum alpinum*	Secure			
Boreal Sweet- vetch	*Hedysarum boreale*	Secure			
Beach Pea	*Lathyrus japonicus*	May Be At Risk			
Cream Vetchling	*Lathyrus ochroleucus*	Secure			
Bird's-foot Trefoil	*Lotus corniculatus*	Alien			
Arctic Lupine	*Lupinus arcticus*	Secure			
Yellow Alfalfa	*Medicago falcata*	Alien	T[6]		
Black Medick	*Medicago lupulina*	Alien			
Alfalfa	*Medicago sativa*	Alien			
White Sweet-clover	*Melilotus albus*	Alien			

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Yellow Sweet-clover	*Melilotus officinalis*	Alien			
Sainfoin	*Onobrychis viciifolia*	Alien			
Arctic Locoweed	*Oxytropis arctica*	Secure			
Boreal Locoweed	*Oxytropis borealis*	Secure			
Field Locoweed	*Oxytropis campestris*	Secure			
Pendant-pod Locoweed	*Oxytropis deflexa*	Secure			
Maydell Locoweed	*Oxytropis maydelliana*	Secure			
Blackish Locoweed	*Oxytropis nigrescens*	Secure			
Scamman's Locoweed	*Oxytropis scammaniana*	May Be At Risk			
Early Locoweed	*Oxytropis sericea*	May Be At Risk	T[6]		
Showy Locoweed	*Oxytropis splendens*	Secure			
Alsike Clover	*Trifolium hybridum*	Alien			
Red Clover	*Trifolium pratense*	Alien			
White Clover	*Trifolium repens*	Alien			
American Purple Vetch	*Vicia americana*	Secure			
Tufted Vetch	*Vicia cracca*	Alien			
Fagales – Betulaceae					Beech-like plants – Birches and alders
Speckled Alder	*Alnus incana*	Secure			
Green Alder	*Alnus viridis*	Secure			
Glandular Birch	*Betula glandulosa*	Secure			
Arctic Dwarf Birch	*Betula nana*	Secure			
Alaska Paper Birch	*Betula neoalaskana*	Secure			
Water Birch	*Betula occidentalis*	Secure			
Paper Birch	*Betula papyrifera*	Secure			
Northern Bog Birch	*Betula pumila*	Secure	ⓘ[3]		
Gentianales – Apocynaceae					Gentian-like plants – Hemps
Spreading Dogbane	*Apocynum androsaemifolium*	Secure			
Indian Hemp	*Apocynum cannabinum*	Secure	ⓘ[2]		
Gentianales – Gentianaceae					Gentian-like plants – Gentians
Dane's Gentian	*Comastoma tenellum*	May Be At Risk			
Prairie Gentian	*Gentiana affinis*	Secure	ⓘ[3]		
Pale Gentian	*Gentiana glauca*	Secure			
Pygmy Gentian	*Gentiana prostrata*	Sensitive			
Northern Gentian	*Gentianella amarella*	Secure			
Four-parted Gentian	*Gentianella propinqua*	Secure			
Raup's Sheared Gentian	*Gentianopsis detonsa*	Secure			
Macoun's Fringed Gentian	*Gentianopsis virgata*	Sensitive	ⓘ[2]		
Spurred Gentian	*Halenia deflexa*	Undetermined			

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Marsh Felwort	*Lomatogonium rotatum*	Secure			
Geraniales – Balasaminaceae					Geranium-like plants – Impatiens
Spotted Jewel-weed	*Impatiens capensis*	Undetermined			
Western Touch-me-not	*Impatiens noli-tangere*	Undetermined			
Geraniales – Geraniaceae					Geranium-like plants – Geraniums
Bicknell Geranium	*Geranium bicknellii*	Secure			
Richardson Geranium	*Geranium richardsonii*	Sensitive			
Herb-Robert	*Geranium robertianum*	Alien	#		
Haloragales – Haloragaceae					Milfoil-like plants – Milfoils
Alternate-flower Water Milfoil	*Myriophyllum alterniflorum*	Sensitive			
Spiked Water Milfoil	*Myriophyllum sibiricum*	Secure			
Whorled Water Milfoil	*Myriophyllum verticillatum*	Secure			
Lamiales – Boraginaceae					Mint-like plants – Borages
Arctic Forget-me-not	*Eritrichium aretioides*	Undetermined			
Showy Forget-me-not	*Eritrichium splendens*	May Be At Risk			
Northern Stickseed	*Hackelia deflexa*	Undetermined			
Western Stickseed	*Lappula occidentalis*	Undetermined	ⓘ[3]		
European Stickseed	*Lappula squarrosa*	Alien			
Drummond Bluebell	*Mertensia drummondii*	May Be At Risk			G2G3 – 2012
Sea Bluebell	*Mertensia martima*	Sensitive			
Northern Bluebell	*Mertensia paniculata*	Secure			
Alpine Forget-me-not	*Myosotis asiatica*	Secure			

Drummond Bluebell
Photo Credit: J Overholt

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Lamiales – Lamiaceae					Mint-like plants – Mints and relatives
Blue Giant Hyssop	*Agastache foeniculum*	May Be At Risk			
American Dragonhead	*Dracocephalum parviflorum*	Secure			
Thyme-leaf Dragonhead	*Dracocephalum thymiflorum*	Alien			
Brittle-stemmed Hemp-nettle	*Galeopsis tetrahit*	Alien			
Common Dead Nettle	*Lamium amplexicaule*	Alien			
Northern Bugleweed	*Lycopus uniflorus*	Secure	ⓘ[5]		
Canada Mint	*Mentha canadensis*	Secure			
Wild Bergamot	*Monarda fistulosa*	May Be At Risk			
Ledingham's False Dragonhead	*Physostegia ledinghamii*	May Be At Risk			
Hooded Skullcap	*Scutellaria galericulata*	Secure			
Hispid Hedge-nettle	*Stachys hispida*	Alien	#		
Hairy Hedge Nettle	*Stachys pilosa*	Secure			
Linales – Linaceae					Flax-like plants – Flaxes
Lewis Blue Flax	*Linum lewisii*	Secure			
Common Yellow Flax	*Linum usitatissimum*	Alien			
Malvales – Malvaceae					Mallow-like plants – Mallows
Dwarf Mallow	*Malva neglecta*	Alien			
Myricales – Myricaceae					Bayberry-like plants – Gales
Sweet Gale	*Myrica gale*	Secure			
Myrtales – Onagraceae					Myrtle-like plants – Fireweeds
Fireweed	*Chamerion angustifolium*	Secure			
River Beauty	*Chamerion latifolium*	Secure			
Small Enchanter's Nightshade	*Circaea alpina*	Secure	ⓘ[3]		
Alpine Willowherb	*Epilobium anagallidifolium*	Secure	ⓘ[3]		
Arctic Willowherb	*Epilobium arcticum*	Secure	ⓘ[3]		
Hairy Willowherb	*Epilobium ciliatum*	Secure			
Dahuria Willowherb	*Epilobium davuricum*	Secure	ⓘ[3]		
Hornemann Willowherb	*Epilobium hornemannii*	Undetermined			
White-flower Willowherb	*Epilobium lactiflorum*	Sensitive			
Linear-leaved Willowherb	*Epilobium leptophyllum*	Secure	ⓘ[3]		
Marsh Willowherb	*Epilobium palustre*	Secure			
Nepenthales – Droseraceae					Carnivorous plants – Sundews
English Sundew	*Drosera anglica*	Secure			
Slenderleaf Sundew	*Drosera linearis*	Sensitive			
Round-leaved Sundew	*Drosera rotundifolia*	Secure			

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Nepenthales – Sarraceniaceae					Carnivorous plants – Pitcher plants
Northern Pitcher Plant	*Sarracenia purpurea*	Secure			
Nymphaeales – Ceratophyllaceae					Waterlily-like plants – Hornworts
Common Hornwort	*Ceratophyllum demersum*	Sensitive			
Nymphaeales – Nymphaeaceae					Waterlily-like plants – Waterlilies
Rocky Mountain Pond Lily	*Nuphar polysepala*	May Be At Risk			
Variegated Pond Lily	*Nuphar variegata*	Secure			
Dwarf White Waterlily	*Nymphaea leibergii*	May Be At Risk			
Pygmy White Waterlily	*Nymphaea tetragona*	Sensitive			
Papaverales – Fumariaceae					Poppy-like plants – Corydalis
Pale Corydalis	*Capnoides sempervirens*	Secure			
Golden Corydalis	*Corydalis aurea*	Secure			
Few-flowered Corydalis	*Corydalis pauciflora*	Secure	ⓘ[3]		
Papaverales – Papaveraceae					Poppy-like plants – Poppies
Cornwallis Island Poppy	*Papaver cornwallisense*	Secure			
Polar Poppy	*Papaver dahlianum*	Secure	T[6]		
Hultén's Poppy	*Papaver hultenii*	Secure	T[6]		
Keel River Poppy	*Papaver keelei*	Secure			
Lapland Poppy	*Papaver lapponicum*	Secure			
McConnell's Poppy	*Papaver mcconnellii*	Sensitive	ⓘ[2]		
Walpole Poppy	*Papaver walpolei*	Presence Expected			
Plantaginales – Plantaginaceae					Plantain-like plants – Plantains
Hairy Plantain	*Plantago canescens*	Secure			
Saline Plantain	*Plantago eriopoda*	Secure			
Common Plantain	*Plantago major**	Alien			
Seaside Plantain	*Plantago maritima*	Sensitive	ⓘ[2]		
Plumbaginales – Plumbaginaceae					Leadwort-like plants – Thrifts
Western Thrift	*Armeria maritima*	Secure			
Polygonales – Polygonaceae					Rhubarb-like plants – Rhubarbs
Alaska Wild-rhubarb	*Aconogonon alaskanum*	Secure	ⓘ[3]		
Meadow Bistort	*Bistorta plumosa*	Secure			
Alpine Knotweed	*Bistorta vivipara*	Secure			
Black Bindweed	*Fallopia convolvulus*	Alien			
Iceland Purslane	*Koenigia islandica*	Sensitive			
Mountain Sorrel	*Oxyria digyna*	Secure			
Water Smartweed	*Persicaria amphibia*	Secure			
Pale Smartweed	*Persicaria lapathifolia*	Alien	∃[4]		
Striate Knotweed	*Polygonum achoreum*	Alien			
Prostrate Knotweed	*Polygonum aviculare*	Alien			
Fowler Knotweed	*Polygonum fowleri*	May Be At Risk			

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Alaska Knotweed	*Polygonum humifusum*	Secure	ⓘ[3]		
Bushy Knotweed	*Polygonum ramosissimum*	Undetermined			
Rhubarb	*Rheum rhabarbarum*	Alien	∃[6]		
Arctic Dock	*Rumex arcticus*	Secure			
Great Water Dock	*Rumex britannica*	Undetermined			
Curly Dock	*Rumex crispus*	Alien			
Tierra del Fuego Dock	*Rumex fueginus*	Secure	ⓘ[3]		
Lapland Sorrel	*Rumex lapponicus*	May Be At Risk			
Western Dock	*Rumex occidentalis*	Secure			
Siberian Willow Dock	*Rumex sibiricus*	Secure	ⓘ[5]		
Triangular-valved Dock	*Rumex triangulivalvis*	Secure			
Primulales – Primulaceae					Primerose-like plants – Primroses
Sweet-flower Rock-jasmine	*Androsace chamaejasme*	Secure			
Pygmy-flower Rock-jasmine	*Androsace septentrionalis*	Secure			
Mackenzie River Dwarf Primrose	*Douglasia arctica*	Secure	ⓘ[3]		
Arctic Mountain Dwarf Primrose	*Douglasia ochotensis*	Undetermined			
Northern Starflower	*Lysimachia borealis*	Presence Expected	ⓘ[5]		
Arctic Starflower	*Lysimachia europaea*	Sensitive			
Sea Milkwort	*Lysimachia maritima*	May Be At Risk			
Tufted Yellow Loosetrife	*Lysimachia thyrsiflora*	Secure			
Slender Primrose	*Primula borealis*	Secure	ⓘ[3]		
Greenland Primrose	*Primula egaliksensis*	Secure			
Northern Shooting-star	*Primula frigida*	Secure			
Mealy Primrose	*Primula incana*	Secure			
Lake Mistassini Primrose	*Primula mistassinica*	Secure			
Few-flower Shooting-star	*Primula pauciflora*	Secure	ⓘ[3]		
Arctic Primrose	*Primula pumila*	May Be At Risk			
Stiff Primrose	*Primula stricta*	Secure			
Ranunculales – Ranunculaceae					Buttercup-like plants – Buttercups and relatives
Mountain Monkshood	*Aconitum delphinifolium*	Secure			
Red Baneberry	*Actaea rubra*	Secure			
Canada Anemone	*Anemone canadensis*	Secure			
Alpine Anemone	*Anemone drummondii*	Secure	ⓘ[3]		
Purple Anemone	*Anemone multiceps*	Presence Expected			
Cut-leaved Anemone	*Anemone multifida*	Secure			
Narcissus-flowered Anemone	*Anemone narcissiflora*	Secure			
Small-flower Anemone	*Anemone parviflora*	Secure			

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Prairie Crocus	*Anemone patens*	Secure			
Yellow Anemone	*Anemone richardsonii*	Secure			
Blue Columbine	*Aquilegia brevistyla*	Secure			
Floating Marsh Marigold	*Caltha natans*	Secure	ⓘ3		
Marsh Marigold	*Caltha palustris*	Secure			
Lapland Buttercup	*Coptidium lapponicum*	Secure			
Pallas' Buttercup	*Coptidium pallasii*	Secure	ⓘ3		
Northern Larkspur	*Delphinium brachycentrum*	Undetermined			
Dwarf Delphinium	*Delphinium elatum*	Alien			
Pale Larkspur	*Delphinium glaucum*	Secure			
Seaside Buttercup	*Halerpestes cymbalaria*	Secure			
Kidney-leaved Buttercup	*Ranunculus abortivus*	Sensitive			
Common Buttercup	*Ranunculus acris*	Alien			
White Water Buttercup	*Ranunculus aquatilis*	Secure			
Northern Buttercup	*Ranunculus arcticus*	Secure			
Subalpine Buttercup	*Ranunculus eschscholtzii*	Secure			
Lesser Spearwort	*Ranunculus flammula*	Secure			
Small Yellow Water-buttercup	*Ranunculus gmelinii*	Secure			
Tundra Buttercup	*Ranunculus grayi*	Sensitive			
High-Arctic Buttercup	*Ranunculus hyperboreus*	Secure			
Macoun Buttercup	*Ranunculus macounii*	Secure			
Snowy Buttercup	*Ranunculus nivalis*	Secure			
Bristly Crowfoot	*Ranunculus pensylvanicus*[c]	Undetermined			
Dwarf Buttercup	*Ranunculus pygmaeus*	Secure			
Prairie Buttercup	*Ranunculus rhomboideus*	May Be At Risk			
Sardine's Buttercup	*Ranunculus sabinei*	Secure	ⓘ3		
Cursed Crowfoot	*Ranunculus sceleratus*	Secure			
Sulphur Buttercup	*Ranunculus sulphureus*	Secure			
Turner's Buttercup	*Ranunculus turneri*	May Be At Risk			G3 – 2007
Alpine Meadow Rue	*Thalictrum alpinum*	Secure			
Few Flower Meadow Rue	*Thalictrum sparsiflorum*	Secure	ⓘ2		
Veined Meadow Rue	*Thalictrum venulosum*	Secure			
Rhamnales – Elaeagnaceae				Buckthorn-like shrubs – Silverberries	
American Silverberry	*Elaeagnus commutata*	Secure			
Buffalo-berry	*Shepherdia canadensis*	Secure			
Rosales – Crassulaceae				Rose-like plants – Stonecrops	
Water Pigmyweed	*Crassula aquatica*	May Be At Risk			
Two-row Stonecrop	*Phedimus spurius*	Alien			

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Entire-leaved Stonecrop	*Rhodiola integrifolia*	Secure	ⓘ[3]		
Rosales – Grossulariaceae					Rose-like plants – Currants
Skunk Currant	*Ribes glandulosum*	Secure			
Northern Black Currant	*Ribes hudsonianum*	Secure			
Bristly Black Currant	*Ribes lacustre*	Secure			
Canada Gooseberry	*Ribes oxyacanthoides*	Secure			
Swamp Red Currant	*Ribes triste*	Secure			
Rosales – Rosaceae					Rose-like plants – Roses
Saskatoon Berry	*Amelanchier alnifolia*	Secure			
Rose Chamaerhodos	*Chamaerhodos erecta*	May Be At Risk			
Marsh Cinquefoil	*Comarum palustre*	Secure			
Shrubby Cinquefoil	*Dasiphora fruticosa*	Secure			
Beringian Mountain Avens	*Dryas ajanensis*	Undetermined	T[6]		
Alaska Mountain Avens	*Dryas alaskensis*	Secure	T[6]		
Yellow Mountain Avens	*Dryas drummondii*	Secure			
Hooker's Mountain Avens	*Dryas hookeriana*	Secure	T[6]		
Crenulate-leaved Mountain Avens	*Dryas incisa*	Secure	T[6]		
Entire-leaved Mountain Avens	*Dryas integrifolia*	Secure			
Tall Cinquefoil	*Drymocallis arguta*	Secure	ⓘ[3]		
Woodland Strawberry	*Fragaria vesca*	Secure	ⓘ[5]		
Virginia Strawberry	*Fragaria virginiana*	Secure			
Yellow Avens	*Geum aleppicum*	Secure			
Glacier Avens	*Geum glaciale*	Sensitive			
Large-leaved Avens	*Geum macrophyllum*	Secure			
Ross Avens	*Geum rossii*	Secure			
Prairie-smoke	*Geum triflorum*	May Be At Risk			
Segmented Luetkea	*Luetkea pectinata*	May Be At Risk			
Silverweed	*Potentilla anserina*	Secure			
Bluff Cinquefoil	*Potentilla arenosa*	Secure	T[6]		
Two-flowered Cinquefoil	*Potentilla biflora*	Secure			
Staghorn Cinquefoil	*Potentilla bimundorum*	Secure			
Bipinnate Cinquefoil	*Potentilla bipinnatifida*	Undetermined	T[6]		
Elegant Cinquefoil	*Potentilla elegans*	Secure			
Mountain Meadow Cinquefoil	*Potentilla glaucophylla*	Secure	ⓘ[3]		
Hipp's Cinquefoil	*Potentilla hippiana*	Undetermined	T[6]		
Arctic Cinquefoil	*Potentilla hyparctica*	Secure			
Coast Cinquefoil	*Potentilla litoralis*	Secure	T[6]		
Snow Cinquefoil	*Potentilla nivea*	Secure			
Norwegian Cinquefoil	*Potentilla norvegica*	Secure			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Pedersen's Cinquefoil	*Potentilla pedersenii*	Undetermined	T[6]		
Pennsylvania Cinquefoil	*Potentilla pensylvanica*	Secure			
Pretty Cinquefoil	*Potentilla pulchella*	Secure			
Rocky Mountain Cinquefoil	*Potentilla rubricaulis*	Secure			
North American Gorodkov's Cinquefoil	*Potentilla subgorodkoviil*	Secure			
High Arctic Cinquefoil	*Potentilla subvahliana*	Secure			
Ushakov's Cinquefoil	*Potentilla uschakovii*	Undetermined	T[6]		
Beringian Hairy Potentilla	*Potentilla villosula*	May Be At Risk			
Kamtchatka Cinquefoil	*Potentilla vulcanicola*	Undetermined			
Pin Cherry	*Prunus pensylvanica*	Secure	ⓘ[2]		
Choke Cherry	*Prunus virginiana*	Sensitive			
Prickly Rose	*Rosa acicularis*	Secure			
Smooth Rose	*Rosa blanda*	Undetermined			
Woods Rose	*Rosa woodsii*	Secure			
Arctic Raspberry	*Rubus arcticus*	Secure			
Cloudberry	*Rubus chamaemorus*	Secure			
Red Raspberry	*Rubus idaeus*	Secure			
Dwarf Red Raspberry	*Rubus pubescens*	Secure			
Canada Burnet	*Sanguisorba canadensis*	Presence Expected			
Great Burnet	*Sanguisorba officinalis*[l]	Undetermined			
Creeping Sibbaldia	*Sibbaldia procumbens*	Secure	ⓘ[3]		
Three-toothed Cinquefoil	*Sibbaldia tridentata*	Secure	ⓘ[3]		
False Spiraea	*Sorbaria sorbifolia*	Alien			
Green Mountain-ash	*Sorbus scopulina*	Secure	ⓘ[3]		
Steven Meadow-sweet	*Spiraea stevenii*	Secure			
Rosales – Saxifragaceae					Rose-like plants – Saxigrages
Northern Golden Saxifrage	*Chrysosplenium tetrandrum*	Secure			
Wright Golden Saxifrage	*Chrysosplenium wrightii*	Sensitive			
Richardson Alumroot	*Heuchera richardsonii*	May Be At Risk			
Leather-leaved Saxifrage	*Leptarrhena pyrolifolia*	Secure	ⓘ[2]		
Rusty-hair Saxifrage	*Micranthes ferruginea*	May Be At Risk			
Leafy Saxifrage	*Micranthes foliolosa*	Secure			
Stiff Stem Saxifrage	*Micranthes hieraciifolia*	Secure			
Red Stemmed Saxifrage	*Micranthes lyallii*	Secure	ⓘ[3]		
Heart-leaved Saxifrage	*Micranthes nelsoniana*	Secure			
Snow Saxifrage	*Micranthes nivalis*	Secure			
Razshivin's Saxifrage	*Micranthes razshivinii*	Secure			
Yukon Saxifrage	*Micranthes reflexa*	Secure			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Slender Saxifrage	*Micranthes tenuis*	Secure	ⓘ[5]		
Bare-stem Bishop's Cap	*Mitella nuda*	Secure			
Five-stamen Mitrewort	*Mitella pentandra*	Undetermined	#		
Fringed Grass-of-parnassus	*Parnassia fimbriata*	Secure	ⓘ[3]		
Kotzebue's Grass-of-parnassus	*Parnassia kotzebuei*	Secure			
Marsh Grass-of-parnassus	*Parnassia palustris*	Secure			
Ascending Saxifrage	*Saxifraga adscendens*	Secure	ⓘ[3]		
Yellow Mountain Saxifrage	*Saxifraga aizoides*	Secure			
Matte Saxifrage	*Saxifraga bronchialis*	Sensitive			
Nodding Saxifrage	*Saxifraga cernua*	Secure			
Tufted Saxifrage	*Saxifraga cespitosa*	Secure			
Cushion Saxifrage	*Saxifraga eschscholtzii*	May Be At Risk			
Spider Saxifrage	*Saxifraga flagellaris*	Secure			
Yellow Marsh Saxifrage	*Saxifraga hirculus*	Secure			
Arctic Saxifrage	*Saxifraga hyperborea*	Secure			
Purple Mountain Saxifrage	*Saxifraga oppositifolia*	Secure			
White Mountain Saxifrage	*Saxifraga paniculata*	May Be At Risk			
Spreading Saxifrage	*Saxifraga radiata*	Secure			
Thyme-leaf Saxifrage	*Saxifraga serpyllifolia*	Secure	ⓘ[3]		
Prickly Saxifrage	*Saxifraga tricuspidata*	Secure			
Rubiales – Rubiacease					Bedstraw-like plants – Bedstraws
Catchweed Bedstraw (Cleavers)	*Galium aparine*	Alien			
Northern Bedstraw	*Galium boreale*	Secure			
Northern Wild Licorice	*Galium kamtschaticum*	Undetermined			

Northern Paintbrush Photo Credit: J Nagy

Common Butterwort Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Bog Bedstraw	*Galium labradoricum*	Secure			
Small Bedstraw	*Galium trifidum*	Secure			
Fragrant Bedstraw	*Galium triflorum*	Secure			
Salicales – Salicaceae					Willow-like plants – Willows and relatives
Balsam Poplar	*Populus balsamifera*	Secure			
Trembling Aspen	*Populus tremuloides*	Secure			
Alaska Willow	*Salix alaxensis*	Secure			
Littletree Willow	*Salix arbusculoides*	Secure			
Arctic Willow	*Salix arctica*	Secure			
Northern Willow	*Salix arctophila*	Secure			
Athabasca Willow	*Salix athabascensis*	Secure			
Barclay Willow	*Salix barclayi*	Secure			
Barratt Willow	*Salix barrattiana*	Secure			
Bebb Willow	*Salix bebbiana*	Secure			
Short-fruit Willow	*Salix brachycarpa*	Secure			
Hoary Willow	*Salix candida*	Secure			
Chamisso's willow	*Salix chamissonis*	Sensitive			
Undergreen Willow	*Salix commutata*	Secure	ⓘ[3]		
Pussy Willow	*Salix discolor*	Sensitive			
Drummond's Willow	*Salix drummondiana*	Undetermined			
Yellow Willow	*Salix famelica*	Secure			
Farr's Willow	*Salix farriae*	May Be At Risk			
Alaska Bog Willow	*Salix fuscescens*	Secure			
Gray willow	*Salix glauca*	Secure			
Halberd Willow	*Salix hastata*	Secure	ⓘ[3]		
Snowbed Willow	*Salix herbacea*	Secure			
Sandbar Willow	*Salix interior*	Secure			
Pacific Willow	*Salix lasiandra*	Secure			
Maccalla Willow	*Salix maccalliana*	Secure			
Blueberry Willow	*Salix myrtillifolia*	Secure			
Barren-ground Willow	*Salix niphoclada*	Secure			
Arctic Seashore Willow	*Salix ovalifolia*	May Be At Risk			
Bog Willow	*Salix pedicellaris*	Secure			
Meadow Willow	*Salix petiolaris*	Secure	ⓘ[3]		
Skeleton-leaved Willow	*Salix phlebophylla*	Secure			
Diamond-leaved Willow	*Salix planifolia*	Secure			
Polar Willow	*Salix polaris*	Secure			
Mackenzie Willow	*Salix prolixa*	Secure			
False Mountain Willow	*Salix pseudomonticola*	Secure			
Firm-Leaf Willow	*Salix pseudomyrsinites*	Secure	ⓘ[5]		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Tea-leaved Willow	*Salix pulchra*	Secure			
Balsam Willow	*Salix pyrifolia*	Secure			
Raup's Willow	*Salix raupii*	May Be At Risk			G2 – 2012
Net-veined Willow	*Salix reticulata*	Secure			
Richardson Willow	*Salix richardsonii*	Secure			
Round-leaved Willow	*Salix rotundifolia*	Secure			
Scouler Willow	*Salix scouleriana*	Secure			
Autumn Willow	*Salix serissima*	Secure			
Wedgeleaf Willow	*Salix sphenophylla*	May Be At Risk			
Tyrrell's Willow	*Salix tyrrellii*	May Be At Risk			
Santalales – Santalaceae					Sandalwood-like plants – Sandalwoods
Northern Comandra	*Geocaulon lividum*	Secure			
Sapindales – Aceraceae					Maple-like plants – Maples
Manitoba Maple	*Acer negundo*	Alien			
Scrophulariales – Lentibulariaceae					Figwort-like plants – Butterworts
Hairy Butterwort	*Pinguicula villosa*	Secure			
Common Butterwort	*Pinguicula vulgaris*	Secure			
Flatleaf Bladderwort	*Utricularia intermedia*	Secure			
Lesser Bladderwort	*Utricularia minor*	Secure	ⓘ[3]		
Northern Bladderwort	*Utricularia ochroleuca*	Sensitive			
Greater Bladderwort	*Utricularia vulgaris*	Secure			
Scrophulariales – Orobanchaceae					Figwort-like plants – Broomrapes
Northern Groundcone	*Boschniakia rossica*	Secure			
Scrophulariales – Scrophulariaceae					Figwort-like plants – Figworts
Elegant Paintbrush	*Castilleja elegans*	Secure			
Northern Paintbrush	*Castilleja hyperborea*	Secure	ⓘ[3]		
Boreal Paintbrush	*Castilleja pallida*	Secure			
Raup's Paintbrush	*Castilleja raupii*	Secure			
Northeastern Paintbrush	*Castilleja septentrionalis*	Undetermined	T[6]		
Dwarf Snapdragon	*Chaenorhinum minus*	Alien			
Common Large Monkey Flower	*Erythranthe guttata*	May Be At Risk			
Arctic Eyebright	*Euphrasia subarctica*	Secure	ⓘ[3]		
Pale Weaselsnout	*Lagotis glauca*	Secure			
Northern Mudwort	*Limosella aquatica*	May Be At Risk			
Butter-and-Eggs	*Linaria vulgaris*	Alien			
Yellow Owl's Clover	*Orthocarpus luteus*	May Be At Risk			
Capitate Lousewort	*Pedicularis capitata*	Secure			
Red-tip Lousewort	*Pedicularis flammea*	Sensitive			
Greenland Lousewort	*Pedicularis groenlandica*	Undetermined			

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Hairy Lousewort	*Pedicularis hirsuta*	Undetermined			
Labrador Lousewort	*Pedicularis labradorica*	Secure			
Woolly Lousewort	*Pedicularis lanata*	Secure			
Langsdorff's Lousewort	*Pedicularis langsdorffii*	Secure			
Lapland Lousewort	*Pedicularis lapponica*	Secure			
Oeder's Lousewort	*Pedicularis oederi*	May Be At Risk			
Muskeg Lousewort	*Pedicularis parviflora*	Secure	ⓘ3		
Sudetan Lousewort	*Pedicularis sudetica*	Secure			
Whorled Lousewort	*Pedicularis verticillata*	May Be At Risk			
Gorman's Beardtongue	*Penstemon gormanii*	May Be At Risk			
Small-flowered Beardtongue	*Penstemon procerus*	Presence Expected			
Little Yellow Rattle	*Rhinanthus minor*	Secure			
Alaska Kitten-tail	*Veronica alaskensis*	May Be At Risk			
American Speedwell	*Veronica americana*	Sensitive			
Long-leaf Speedwell	*Veronica longifolia*	Alien			
Alpine Speedwell	*Veronica nutans*	Secure			
Purslane Speedwell	*Veronica peregrina*	Secure	ⓘ2		
Marsh Speedwell	*Veronica scutellata*	Secure	ⓘ3		
Solanales – Hydrophyllaceae					Nightshade-like plants – Waterleaves
Franklin's Phacelia	*Phacelia franklinii*	Secure			
Solanales – Menyanthaceae					Nightshade-like plants – Buckbeans
Bog Buckbean	*Menyanthes trifoliata*	Secure			
Solanales – Polemoniaceae					Nightshade-like plants – Phlox and relatives
Narrow-leaved Collomia	*Collomia linearis*	Alien	∃3		
Hood's Phlox	*Phlox hoodii*	Undetermined			
Richarson's Phlox	*Phlox richardsonii*	Secure	ⓘ3		
Tall Jacob's Ladder	*Polemonium acutiflorum*	Secure			
Northern Jacob's Ladder	*Polemonium boreale*	Secure			
Showy Jacob's Ladder	*Polemonium pulcherrimum*	Secure	ⓘ3		
Theales – Elatinaceae					Tea-like plants – Waterworts
Long-stemmed Waterwort	*Elatine americana*	Undetermined			
Urticales – Urticaceae					Nettle-like plants – Nettles
Stinging Nettle	*Urtica dioica*	Secure			
Violales – Cistaceae					Violet-like plants – Beach-heath
Woolly Beach-heath	*Hudsonia tomentosa*	Sensitive			
Violales – Violaceae					Violet-like plants – Violets
Sand Violet	*Viola adunca*	Secure			
Canada Violet	*Viola canadensis*	Undetermined			
Northern Marsh Violet	*Viola epipsila*	Secure	ⓘ3		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	SARC Status in the NWT[b]	COSEWIC Status in Canada/Global Conservation Concern[b]
Labrador Violet	*Viola labradorica*	Secure	T[6]		
Smooth White Violet	*Viola macloskeyi*	Secure	ⓘ[3]		
Northern Bog Violet	*Viola nephrophylla*	Secure	ⓘ[3]		
Alpine Marsh Violet	*Viola palustris*	Sensitive			
Kidney-leaf White Violet	*Viola renifolia*	Secure			
Great-spurred Violet	*Viola selkirkii*	Undetermined			
Johnny-jump-up	*Viola tricolor*	Alien			

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. SARC Status: Status for a species in the NWT if it ihas already been assessed in detail by SARC as of December 2016. COSEWIC Status: Status for a species in Canada if it has already been assessed in a detailed manner by COSEWIC as of December 2016. The year of each assessment is given with each status. After 2016, please consult current and additional status assessments using references given at the end of this report. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[c] This species may have been introduced to the NWT.

[d] Slender Wild Rye (*Elymus trachycaulus*) has both native and introduced forms, both of which are apparently present in the NWT. This grass formed the majority of the seed mix applied in the 1980-90s along the pipeline to Norman Wells.

[e] Reed Canary Grass (*Phalaris arundinacea*) has both native and introduced forms (genotypes) that can be in the NWT.

[f] Two varieties of Common Reed (*Phragmites australis*) exists: one is native, the other one is alien. Althought only the native variety appears to be present in the NWT, further investigations on the genetics of the NWT populations are needed.

[g] Two forms of Kentucky Bluegrass (*Poa pratensis*) exists: one is native, the other one is alien. Both forms may be present in the NWT, but most sites are considered introduced. The species is used extensively as lawn grass.

[h] Annual Ragweed (*Ambrosia artemisiifolia*) was recorded in the 1970s near Fort Smith; its continuous presence in the NWT is unclear.

[i] Common Sow Thistle (*Sonchus oleraceus*) was recorded in 1955 near Fort Simpson; its continuous presence in the NWT is unclear.

[j] *Oxybasis glauca* is considered an alien species, but the only taxon present in the NWT is the native subspecies *O. glauca salina*. The later taxon is ranked in this report.

[k] Nipple-seed Plantain (*Plantago major*) has both native and alien subspecies. Both forms can be found in the NWT.

[l] There is uncertainty on the identity of the taxa present in the NWT. Either Great Burnet (*Sanguisorba officinalis*, alien) is present, or Western Burnet (*Sanguisorba occidentalis*, native), or both.

[1] Changed from At Risk

[2] Changed from May Be at Risk

[3] Changed from Sensitive

[4] Changed from Secure

[5] Changed from Undetermined

[6] Changed from Not Assessed

[7] Changed from Alien

[8] Changed from Extirpated

[9] Changed from Vagrant

[10] Changed from Presence Expected

Lapland Poppy Photo Credit: R Decker

6.28 Liverworts

Cilliate Fingerwort
Photo Credit: J Hollett

Liverworts are non-vascular plants related to mosses and hornworts. They share with their cousins a number of unique characteristics, including small size, restriction to microhabitats, and an adaptation called "desiccation tolerance".

Desiccation tolerance is the ability to completely dry out and yet come to life minutes after they are re-wetted. Unlike other plants, liverworts don't have thick outer cuticle that prevents water loss. This allows liverworts to survive on rock surfaces or tree bark that do not hold water very long after a rainfall.

Liverworts have a complex life cycle, starting with a spore, then producing a mass of filaments (protonema), maturing in a gametophore ("gamete-bearer") plant that produces the sex organs. These organs are either male (antheridium) and protected by specialized cells called a perigonium, or female (archegonium) and protected by a perichaetum. Liverworts may have both female and male organs on the different indivisuals (dioicous) or are monoicous, where sex organs are borne on different branch of the same plants. In either case, the sperm must move where they are produced to the archegonium where the eggs are held. The sperm of liverworts is biflagellate (they have two tail-like flagellae that enable them to swim short distances provided that at least a thin film of water is present). Their journey may be assisted by the splashing of raindrops.

Liverworts are so named because they resembled lobed livers to early observers! In fact only a portion of the liverworts known to be present in the NWT have the "lobed liver" look. These are the thallose liverworts. The other group are the leafy liverworts, otern confused with mosses. Leafy liverworts are smaller and have distinct leaves arranged neatly along a stem.

Unlike most plants, liverworts are not able to produce wood (cellulose), which provides plants with the rigidity to grow to enormous size. So liverworts are destined to remain small. They are not able to compete for light and water with plants that grow much larger and taller; however, their small size allows them to grow in tight places where there is less competition. These small places are called microhabitats and they often differ significantly in temperature and humidity (and nutrients) from the entire landscape.

These small plants have a role in the landscapes where they occur. Liverworts can be ubiquitous in our forests. The species *Marchantia polymorpha* can form large blankets of green soon after a forest fire and are thus important in erosion prevention. Other species can form significant soil crust ecosystems in extreme environments, such as in our polar regions.

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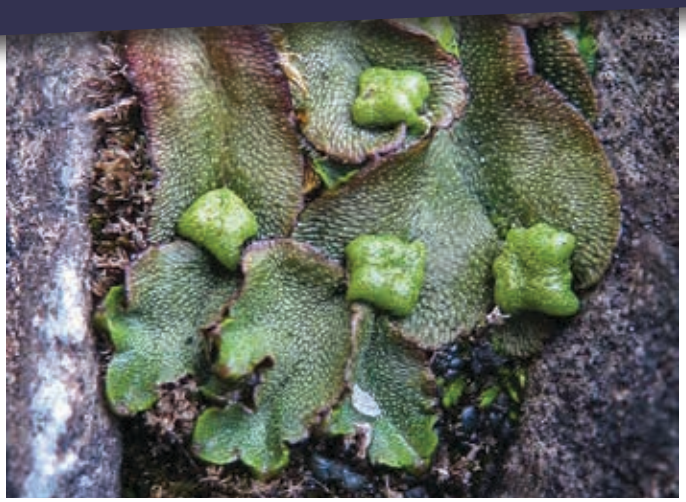
Green-tongue Liverwort Photo Credit: J Hollett

List 28. **Liverworts**

There are 142 species of liverworts confirmed present in the NWT. An additional five species are expected to be present. One species is of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Stotler and Crandall-Stotler (1977).



Narrow Mushroom-headed Liverwort Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Marchantiophyta – Jungermanniopsida – Jungermanniidae			**Liverworts – Leafy hepatics**
Jungermanniales – Adelanthaceae			Leafy liverworts – Adelantid liverworts
Macoun's Flapwort	*Odontoschisma macounii*	Secure	
Jungermanniales – Antheliaceae			Leafy liverworts – Silverworts
Alpine Silverwort	*Anthelia julacea*	Undetermined	
Juratzka's Silverwort	*Anthelia juratzkana*	Undetermined	
Jungermanniales – Arnelliaceae			Leafy liverworts – Arnellid liverworts
Tundra Liverwort	*Arnellia fennica*	Undetermined	
Jungermanniales – Calypogeiaceae			Leafy liverworts – Pouchworts
Meylan's Pouchwort	*Calypogeia integristipula*	Undetermined	
Hairy Pouchwort	*Calypogeia muelleriana*	Undetermined	
Nees' Pouchwort	*Calypogeia neesiana*	Undetermined	
Bog Pouchwort	*Calypogeia sphagnicola*	Undetermined	
Schuster's Pouchwort	*Eocalypogeia schusterana*	Undetermined	
Jungermanniales – Cephaloziaceae			Leafy liverworts – Pincerworts
Snow Pincerwort	*Cephalozia ambigua*	Undetermined	
Two-horned Pincerwort	*Cephalozia bicuspidata*	Undetermined	
Forcipated Pincerwort	*Cephalozia connivens*	Undetermined	
Scissors Pincerwort	*Cephalozia loitlesbergeri*	Undetermined	
Moon-leaved Pincerwort	*Cephalozia lunulifolia*	Undetermined	
Blunt Pincerwort	*Cephalozia pleniceps*	Undetermined	
Bog Notchwort	*Cladopodiella fluitans*	Undetermined	
Francis' Notchwort	*Cladopodiella francisci*	Undetermined	
Brown Flapwort	*Odontoschisma elongatum*	Undetermined	
Snow Threadwort	*Pleurocladula albescens*	Undetermined	
Jungermanniales – Cephaloziellaceae			Leafy liverworts – Threadworts
Spreading Threadwort	*Cephaloziella divaricata*	Undetermined	
Red Threadwort	*Cephaloziella rubella*	Undetermined	
Spiny Threadwort	*Cephaloziella spinigera*	Undetermined	
Hooked Threadwort	*Cephaloziella uncinata*	Undetermined	
Arctic Threadwort	*Cephaloziella varians*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Jungermanniales – Geocalycaceae			Leafy liverworts – Geocalid liverworts
Turps Pouchwort	*Geocalyx graveolens*	Undetermined	
Drummond's Flapwort	*Harpanthus drummondii*	Presence Expected	
Great Mountain Flapwort	*Harpanthus flotovianus*	Undetermined	
Stipular Flapwort	*Harpanthus scutatus*	Undetermined	
Jungermanniales – Gymnomitriaceae			Leafy liverworts – Frostworts
Revolute Rustwort	*Apomarsupella revoluta*	Undetermined	
Braided Frostwort	*Gymnomitrion concinnatum*	Undetermined	
Coral Frostwort	*Gymnomitrion corallioides*	Secure	
Blunt Frostwort	*Gymnomitrion obtusum*	Undetermined	
Arctic Rustwort	*Marsupella arctica*	Presence Expected	
Notched Rustwort	*Marsupella emarginata*	Undetermined	
Jungermanniales -Herbertaceae			Leafy liverworts – Scissor-leaved liverworts
Bent Scissor-leaved Liverwort	*Herbertus aduncus*	Undetermined	
Pacific Scissor-leaved Liverwort	*Herbertus dicranus*	Undetermined	
Jungermanniales – Jamesoniellaceae			Leafy liverworts – Jamesonid liverworts
Jameson's Liverwort	*Jamesoniella autumnalis*	Undetermined	
Jungermanniales – Jungermanniaceae			Leafy liverworts – True leafy liverworts
Imbricated Flapwort	*Cryptocolea imbricata*	Undetermined	
Cordate Flapwort	*Jungermannia exsertifolia*	Presence Expected	
Polar Flapwort	*Jungermannia polaris*	Undetermined	
Dwarf Flapwort	*Jungermannia pumila*	Undetermined	
Round-fruited Flapwort	*Jungermannia sphaerocarpa*	Undetermined	
Compressed Flapwort	*Nardia compressa*	Undetermined	
Japanese Flapwort	*Nardia japonica*	Undetermined	
Jungermanniales – Lepidoziaceae			Leafy liverworts – Fingerworts
Creeping Fingerwort	*Lepidozia reptans*	Undetermined	
Jungermanniales – Lophocoleaceae			Leafy liverworts – Crestworts
United Crestwort	*Chiloscyphus coadunatus*	Undetermined	
Lesser Crestwort	*Chiloscyphus minor*	Undetermined	
Pale Liverwort	*Chiloscyphus pallescens*	Undetermined	
Many-flowered Crestwort	*Chiloscyphus polyanthos*	Undetermined	
Profund Crestwort	*Chiloscyphus profundus*	Undetermined	
Jungermanniales – Mesoptychiaceae			Leafy liverworts – Mesoptychid liverworts
Sahlberg's Liverwort	*Mesoptychia sahlbergii*	Undetermined	
Jungermanniales – Myliaceae			Leafy liverworts – Myliacid liverworts
Taylor's Flapwort	*Mylia taylorii*	Undetermined	
Jungermanniales – Plagiochilaceae			Leafy liverworts – Featherworts
Arctic Featherwort	*Plagiochila arctica*	Undetermined	
Greater Featherwort	*Plagiochila asplenioides*	Undetermined	
Lesser Featherwort	*Plagiochila porelloides*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Jungermanniales – Pseudolepicoleaceae			Leafy liverworts – Pseudolepicolid liverworts
Hairy Threadwort	*Blepharostoma trichophyllum*	Secure	
Frye's Alaskan Threadwort	*Pseudolepicolea fryei*	Undetermined	
Jungermanniales – Scapaniaceae			Leafy liverworts – Scapaniacid liverworts
Similar Notchwort	*Anastrophyllum assimile*	Undetermined	
Hollow-leaved Notchwort	*Anastrophyllum cavifolium*	Undetermined	
Heller's Notchwort	*Anastrophyllum hellerianum*	Undetermined	
Comb Notchwort	*Anastrophyllum minutum*	Secure	
Curled Notchwort	*Anastrophyllum saxicola*	Undetermined	
Wedge Notchwort	*Anastrophyllum sphenoloboides*	Undetermined	
Atlantic Pawwort	*Barbilophozia atlantica*	Undetermined	
Bearded Pawwort	*Barbilophozia barbata*	Secure	
Binstead's Pawwort	*Barbilophozia binsteadii*	Undetermined	
Floerke's Pawwort	*Barbilophozia floerkei*	Undetermined	
Hatcher's Pawwort	*Barbilophozia hatcheri*	Secure	
Northern Pawwort	*Barbilophozia hyperborea*	Undetermined	
Kunze's Pawwort	*Barbilophozia kunzeana*	Undetermined	
Greater Pawwort	*Barbilophozia lycopodioides*	Undetermined	
Four-fingered Pawwort	*Barbilophozia quadriloba*	Undetermined	
Yew-leaved Earwort	*Diplophyllum taxifolium*	Undetermined	
Inflated Notchwort	*Gymnocolea inflata*	Undetermined	
Dwarf Notchwort	*Leiocolea badensis*	Undetermined	
Pan Notchwort	*Leiocolea bantriensis*	Undetermined	
Collared Notchwort	*Leiocolea collaris*	Undetermined	
Gillman's Notchwort	*Leiocolea gillmanii*	Undetermined	
Whip Notchwort	*Leiocolea heterocolpos*	Undetermined	
Fen Notchwort	*Leiocolea rutheana*	Undetermined	
Anomalous Flapwort	*Leiomylia anomala*	Secure	
Small Notchwort	*Lophozia ascendens*	Undetermined	
Lesser Notchwort	*Lophozia bicrenata*	Undetermined	
Elongated Notchwort	*Lophozia elongata*	Presence Expected	
Cut Notchwort	*Lophozia excisa*	Undetermined	
Droplet Notchwort	*Lophozia guttulata*	Undetermined	
Horned Notchwort	*Lophozia longidens*	Undetermined	
Murmansk Notchwort	*Lophozia murmanica*	Undetermined	
Obtuse Notchwort	*Lophozia obtusa*	Undetermined	
Chalk Notchwort	*Lophozia perssonii*	Undetermined	G3Q – 2002
Polar Notchwort	*Lophozia polaris*	Undetermined	
Ash Notchwort	*Lophozia propagulifera*	Undetermined	
Forest Notchwort	*Lophozia silvicola*	Undetermined	
Hill Notchwort	*Lophozia sudetica*	Undetermined	
Tumid Notchwort	*Lophozia ventricosa*	Undetermined	

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Wenzell's Notchwort	*Lophozia wenzelii*	Undetermined	
American Earwort	*Scapania americana*	Undetermined	
Pointed Earwort	*Scapania apiculata*	Undetermined	
Short-stemmed Earwort	*Scapania brevicaulis*	Undetermined	
Knobby Earwort	*Scapania crassiretis*	Undetermined	
Least Earwort	*Scapania curta*	Undetermined	
Untidy Earwort	*Scapania cuspiduligera*	Undetermined	
Glaucous-headed Earwort	*Scapania glaucocephala*	Undetermined	
Narrow-lobed Earwort	*Scapania gymnostomophila*	Undetermined	
Tundra Earwort	*Scapania hyperborea*	Undetermined	
Heath Earwort	*Scapania irrigua*	Undetermined	
Patch Earwort	*Scapania obcordata*	Undetermined	
Bog Earwort	*Scapania paludicola*	Undetermined	
Norwegian Earwort	*Scapania scandica*	Undetermined	
Simmons' Earwort	*Scapania simmonsii*	Secure	
Spitsbergen Earwort	*Scapania spitzbergensis*	Undetermined	
Marsh Earwort	*Scapania uliginosa*	Undetermined	
Water Earwort	*Scapania undulata*	Undetermined	
Purple-lobed Notchwort	*Schistochilopsis grandiretis*	Undetermined	
Jagged Notchwort	*Schistochilopsis incisa*	Undetermined	
Marsh Notchwort	*Schistochilopsis laxa*	Presence Expected	
Monster Pawwort	*Tetralophozia setiformis*	Secure	
Cut Notchwort	*Tritomaria exsecta*	Undetermined	
Large Cut Notchwort	*Tritomaria exsectiformis*	Undetermined	
Mixed-leaved Notchwort	*Tritomaria heterophylla*	Undetermined	
Five-laced Notchwort	*Tritomaria quinquedentata*	Secure	
Mountain Notchwort	*Tritomaria scitula*	Undetermined	

Similar Notchwort
Photo Credit: R Caners

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Porellales – Lejeuneaceae			Leafy epiphytic liverworts – Lejeune liverworts
Alaska Pouncewort	*Lejeunea alaskana*	Undetermined	
Porellales – Radulaceae			Leafy epiphytic liverworts – Scaleworts
Flat-leaved Scalewort	*Radula complanata*	Undetermined	
Arctic Scalewort	*Radula prolifera*	Undetermined	
Porellales – Ptilidiaceae			Leafy epiphytic liverworts – Feathery liverworts
Ciliate Fringewort	*Ptilidium ciliare*	Secure	
Tree Fringewort	*Ptilidium pulcherrimum*	Undetermined	
Marchantiophyta – Jungermanniopsida – Metzgeriidae			**Liverworts – Simple thalloid hepatics**
Metzgeriales – Aneuraceae			Simple thallose liverworts – Greaseworts
Small Greasewort	*Aneura pinguis*	Undetermined	
Jagged Germanderwort	*Riccardia chamedryfolia*	Undetermined	
Bog Germanderwort	*Riccardia latifrons*	Undetermined	
Palmate Germanderwort	*Riccardia palmata*	Undetermined	
Metzgeriales – Metzgeriaceae			Simple thallose liverworts – Veilworts
Downy Veilwort	*Metzgeria pubescens*	Undetermined	
Pallaviciniales – Moerckiaceae			Pallavicinid liverworts – Ruffworts
Blytt's Ruffwort	*Moerckia blyttii*	Undetermined	
Flotow's Ruffwort	*Moerckia flotoviana*	Undetermined	

Green-tongue Liverwort
Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Marchantiophyta – Jungermanniopsida – Pelliidae			**Liverworts – Simple pellid hepatics**
Pelliales – Pelliaceae			Pellialid liverworts – Pellias
Common Pellia	*Pellia epiphylla*	Undetermined	
Large-spored Pellia	*Pellia megaspora*	Undetermined	
Nees' Pellia	*Pellia neesiana*	Undetermined	
Marchantiophyta – Marchantiopsida			**Liverworts – Thallose hepatics**
Marchantiales – Aytoniaceae			Thallose liverworts – Maceworts
Thin Macewort	*Mannia gracilis*	Undetermined	
Hairy Macewort	*Mannia pilosa*	Undetermined	
Field Macewort	*Mannia triandra*	Undetermined	
Marchantiales – Cleveaceae			Thallose liverworts – Lungworts
Hyaline Liverwort	*Clevea hyalina*	Undetermined	
Snow Lungwort	*Sauteria alpina*	Undetermined	
Marchantiales – Conocephalaceae			Thallose liverworts -Conocephalid liverworts
Cat-tongue Liverwort	*Conocephalum salebrosum*	Undetermined	
Marchantiales – Marchantiaceae			Thallose liverworts – True thallose liverworts
Green-tongue Liverwort	*Marchantia polymorpha*	Secure	
Narrow Mushroom-headed Liverwort	*Preissia quadrata*	Secure	
Ricciales – Ricciaceae			Thallose riccid liverworts – Crystalworts
Floating Crystalwort	*Riccia fluitans*	Undetermined	
Purple-fringed Liverwort	*Ricciocarpos natans*	Undetermined	

[a] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Small Greasewort
Photo Credit: J Hollett

6.29 Mosses

Shaggy Sphagnum Moss
Photo Credit: J Hollett

Mosses are small, green, terrestrial plants that most people usually associate with the tropics or coastal rainforest. They are indeed a dominant plant type in those habitats, but also are able to grow in steppe desert or tundra habitats, in addition to many other habitats where most plants are unable to grow.

Although mosses share many features with vascular plants, they have many more unique adaptations or habits that make them different from these. There are three in particular that are of special interest: their small size, their restriction to microhabitats, and desiccation tolerance. It is the combination of all three that allows these small plants to grow in places that most plants can only dream about!

Compared to most vascular plants, mosses are quite small. The largest mosses in Canada are at most 20 cm tall and the smallest is less than 2 mm tall! The reason for their small size is their lack of wood. Wood provides most plants, like trees, the rigidity and strength that allow them to grow to enormous size. Being small may seem like a disadvantage because it prevents mosses from competing against larger plants for light and water. Far from being a disadvantage, small size allows mosses to grow in microhabitats where there is no competition with other plants. Microhabitats are 'mini-habitats' that differ from the surrounding environment in humidity or moisture levels, light, temperature, or substrate. Examples include rock crevices, tree trunks, and rotting logs.

The third feature that is unique to mosses is an adaptation termed 'desiccation tolerance'. Desiccation tolerance allows mosses to dry out completely but upon re-wetting to become active and start growing again within minutes. This enables the mosses to grow on surfaces that dry out very quickly after they have been wetted, or to grow in extreme habitats.

A recent survey of mosses in the Mackenzie Mountains found several species that really showcase the ability of mosses to grow in difficult places. For instance, at one site near Carcajou Lake, a very small moss (*Seligeria*) that barely reaches 2 mm in height was found growing on the side of small rock crevices near the top of a barren rock knoll in the middle of wide expanse of tundra. Another species, *Andreaea blyttii*, was found growing on boulders that had been recently exposed from under a cover of snow in a late melting snow patch at high elevation in the middle of August. And a third species newly discovered in the NWT, *Gimmia mollis*, was found at high elevation growing on rock in a stream of meltwater from late snow. These are just a few examples of mosses that ekeout a living in difficult habitats that are common in the mountains NWT.

Although we found numerous interesting mosses on this survey, large areas of the NWT remain unexplored and poorly documented for their mosses. Effective conservation of these small plants will depend on further surveys to determine in some detail their diversity and occurrence on the landscape.

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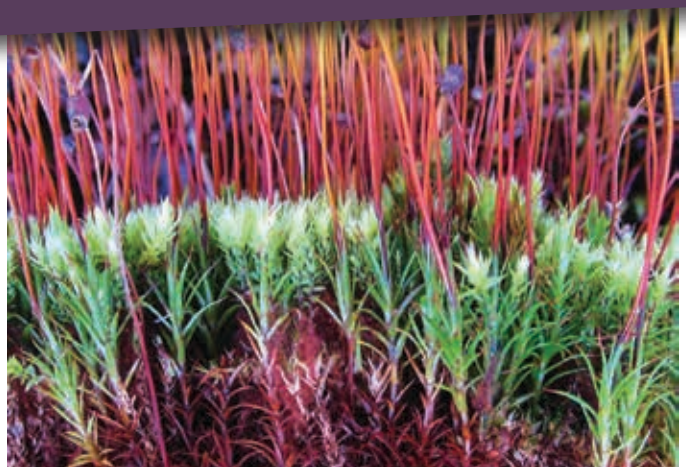
List 29. **Mosses**

There are 490 species of mosses confirmed present in the NWT. At least an additional three species are expected to be present. Four species are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows mainly Flora of North America Editorial Committee (FNA 2007-2014) and Anderson *et al*. (1990) for species not covered in FNA. Common Names are from various sources.



Common Haircap Moss Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Bryophyta – Andreaeopsida				**Mosses – Lantern mosses**
Andreaeales – Andreaeaceae				Andreaeid mosses – Granite mosses
Blytt's Granite Moss	*Andreaea blyttii*	Undetermined		
Snow Rock Moss	*Andreaea nivalis*	Presence Expected	∃[6]	
Obovate Rock Moss	*Andreaea obovata*	Secure		
Black Rock Moss	*Andreaea rupestris*	Secure		
Andreaeales – Andreaeobryaceae				Andreaeid mosses – Granite mosses
Bigspore Arctic Granite Moss	*Andreaeobryum macrosporum*	May Be At Risk		
Bryophyta – Bryopsida				**Mosses – True mosses**
Bryales – Aulacomniaceae				Bryum mosses – Groove mosses
Acute-tip Groove Moss	*Aulacomnium acuminatum*	Secure		
Ribbed Bog Moss	*Aulacomnium palustre*	Secure		
Mountain Groove Moss	*Aulacomnium turgidum*	Secure		
Bryales – Bartramiaceae				Bryum mosses – Apple mosses
Straight-leaved Apple Moss	*Bartramia ithyphylla*	Secure		
Common Apple Moss	*Bartramia pomiformis*	Sensitive		
Helmet Moss	*Conostomum tetragonum*	Secure		
Hairy Apple Moss	*Philonotis capillaris*	Undetermined		
Fountain Apple Moss	*Philonotis fontana*	Undetermined		
Oeder Apple Moss	*Plagiopus oederianus*	Secure		
Bryales -Bryaceae				Bryum mosses – Bryum mosses
Slender Silver Moss	*Anomobryum filiforme*	May Be At Risk		
Silver Bryum Moss	*Bryum argenteum*	Secure		
Tufted Bryum Moss	*Gemmabryum caespiticium*	Secure		
Golden Thread Moss	*Leptobryum pyriforme*	Secure		
Drooping Hump Moss	*Plagiobryum demissum*	May Be At Risk		
Zier's Hump Moss	*Plagiobryum zieri*	May Be At Risk		
Andalusian Nodding Moss	*Pohlia andalusica*	Undetermined		
Andrews' Nodding Moss	*Pohlia andrewsii*	Undetermined		
Pale-fruited Nodding Moss	*Pohlia annotina*	Undetermined		
Purplish Nodding Moss	*Pohlia atropurpurea*	Undetermined		
Small-nerved Nodding Moss	*Pohlia brevinervis*	Presence Expected	∃[6]	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Blunt-bud Nodding Moss	*Pohlia bulbifera*	Undetermined		
Cardot's Nodding Moss	*Pohlia cardotii*	May Be At Risk		G2G3 – 2007
Opal Nodding Moss	*Pohlia cruda*	Secure		
Pipe Nodding Moss	*Pohlia crudoides*	May Be At Risk		
Drummond's Nodding Moss	*Pohlia drummondii*	Undetermined		
Elongated Nodding Moss	*Pohlia elongata*	Undetermined		
Erect Nodding Moss	*Pohlia erecta*	Undetermined		
Slender Nodding Moss	*Pohlia filum*	Undetermined		
Pear-shaped Nodding Moss	*Pohlia lescuriana*	Undetermined		
Long-necked Nodding Moss	*Pohlia longicollia*	Sensitive		
Ludwig's Nodding Moss	*Pohlia ludwigii*	Undetermined		
Common Nodding Moss	*Pohlia nutans*	Secure		
Cottony Nodding Moss	*Pohlia proligera*	Sensitive		
Northwestern Nodding Moss	*Pohlia vexans*	May Be At Risk		
Wahlenberg's Nodding Moss	*Pohlia wahlenbergii*	Secure		
Archangel Bryum Moss	*Ptychostomum archangelicum*	Undetermined		
Arctic Bryum Moss	*Ptychostomum arcticum*	Secure		
Matted Bryum Moss	*Ptychostomum calophyllum*	Sensitive		
Tight-tufted Bryum Moss	*Ptychostomum creberrimum*	Secure		
Round-leaved Bryum Moss	*Ptychostomum cyclophyllum*	Secure		
Small-mouthed Bryum Moss	*Ptychostomum inclinatum*	Undetermined		
Knowlton's Bryum Moss	*Ptychostomum knowltonii*	Sensitive		
Polished Bryum Moss	*Ptychostomum nitidulum*	Undetermined		
Pale Bryum Moss	*Ptychostomum pallens*	Undetermined		
Tall-clustered Bryum Moss	*Ptychostomum pallescens*	Secure		
Drooping Bryum Moss	*Ptychostomum pendulum*	Secure		
Common Green Bryum Moss	*Ptychostomum pseudotriquetrum*	Secure		
Dark-red Arctic Bryum Moss	*Ptychostomum rutilans*	Undetermined		
Saltmarsh Bryum Moss	*Ptychostomum salinum*	Undetermined	Ǝ[4]	
Topshape Bryum Moss	*Ptychostomum turbinatum*	Undetermined		
Weigel's Bryum Moss	*Ptychostomum weigelii*	Secure		
Wright's Bryum Moss	*Ptychostomum wrightii*	Secure		
Capillary Bryum Moss	*Rosulabryum capillare*	Secure		
Bryales – Catoscopiaceae				Bryum mosses – Golf club mosses
Black Golf Club Moss	*Catoscopium nigritum*	Secure		
Bryales – Meesiaceae				Bryum mosses – Thread mosses
Short-toothed Hump Moss	*Amblyodon dealbatus*	Undetermined		
Long-stalked Thread Moss	*Meesia longiseta*	Undetermined		
Three-angled Thread Moss	*Meesia triquetra*	Secure		
Capillary Thread Moss	*Meesia uliginosa*	Secure		
Tufted Fen Moss	*Paludella squarrosa*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Bryales – Mniaceae				Bryum mosses – Leafy mosses
Blytt's Thyme-moss	*Blytt's Leafy Moss*	Secure		
Arctic Cupola Moss	*Cinclidium arcticum*	Secure		
Wide-leaved Cupola Moss	*Cinclidium latifolium*	Secure		
Sooty Cupola Moss	*Cinclidium stygium*	Secure		
Ovate Cupola Moss	*Cinclidium subrotundum*	Secure		
Short-pointed Lantern Moss	*Cyrtomnium hymenophylloides*	Secure		
Obtuse-pointed Lantern Moss	*Cyrtomnium hymenophyllum*	Secure		
Clubmoss Leafy Moss	*Mnium lycopodioides*	Undetermined		
Arizona Leafy Moss	*Mnium arizonicum*	Undetermined		
Bordered Leafy Moss	*Mnium marginatum*	Secure		
Spiny Leafy Moss	*Mnium spinosum*	Undetermined	∃[4]	
Red-mouthed Leafy Moss	*Mnium spinulosum*	Undetermined		
Thomson's Leafy Moss	*Mnium thomsonii*	Secure		
Toothed Leafy Moss	*Plagiomnium ciliare*	Sensitive		
Woodsy Leafy Moss	*Plagiomnium cuspidatum*	Sensitive		
Drummond's Leafy Moss	*Plagiomnium drummondii*	Sensitive		
Marsh Leafy Moss	*Plagiomnium ellipticum*	Secure		
Alpine Leafy Moss	*Plagiomnium medium*	Sensitive		
Long-beaked Leafy Moss	*Plagiomnium rostratum*	Sensitive		
River Thyme Moss	*Pseudobryum cinclidioides*	Sensitive		
Andrew Thyme Moss	*Rhizomnium andrewsianum*	Sensitive		
Slender Leafy Moss	*Rhizomnium gracile*	Secure		
Large-leaved Leafy Moss	*Rhizomnium magnifolium*	Undetermined		
Felted Leafy Moss	*Rhizomnium pseudopunctatum*	Secure		
Dotted Leafy Moss	*Rhizomnium punctatum*	Undetermined		
Bryales – Timmiaceae				Bryum mosses – Timmia mosses
Austrian Timmia Moss	*Timmia austriaca*	Secure		
Megapolitan Timmia Moss	*Timmia megapolitana*	Secure		
Norwegian Timmia Moss	*Timmia norvegica*	Secure		
Siberian Timmia Moss	*Timmia sibirica*	Undetermined		
Dicranales – Bruchiaceae				Dicranid mosses – Bruch's mosses
Short-neck Trematodon Moss	*Trematodon brevicollis*	Sensitive		
Dicranales – Dicranaceae				Dicranid mosses – Fork mosses
Sprig Moss	*Aongstroemia longipes*	May Be At Risk		
Andersson's Arctic Moss	*Arctoa anderssonii*	May Be At Risk		
Tawny Fork Moss	*Arctoa fulvella*	May Be At Risk		
Mountain Dogtooth Moss	*Cynodontium alpestre*	Undetermined		
Glaucous Dogtooth Moss	*Cynodontium glaucescens*	Sensitive		
Slender Dogtooth Moss	*Cynodontium gracilescens*	Undetermined		
Jenner's Dogtooth Moss	*Cynodontium jenneri*	Sensitive		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Many-fruited Dogtooth Moss	*Cynodontium polycarpon*	Undetermined		
Hairy Dogtooth Moss	*Cynodontium schisti*	Sensitive		
Swollen Dogtooth Moss	*Cynodontium strumiferum*	Secure		
Delicate Dogtooth Moss	*Cynodontium tenellum*	Sensitive		
Transparent Fork Moss	*Dichodontium pellucidum*	Undetermined		
Spur-necked Forklet Moss	*Dicranella cerviculata*	Undetermined		
Curl-leaved Forklet Moss	*Dicranella crispa*	Secure		
Silky Forklet Moss	*Dicranella heteromalla*	Undetermined		
Marsh Forklet Moss	*Dicranella palustris*	Undetermined		
Schreber's Forklet Moss	*Dicranella schreberiana*	Secure		
Awl-leaved Forklet Moss	*Dicranella subulata*	Undetermined		
Variable Forklet Moss	*Dicranella varia*	Undetermined		
Beaked Bow Moss	*Dicranodontium denudatum*	Undetermined		
Curly Thatch Moss	*Dicranoweisia cirrata*	Undetermined		
Mountain Thatch Moss	*Dicranoweisia crispula*	Secure		
Sharp-leaved Broom Moss	*Dicranum acutifolium*	Secure		
Bonjean's Broom Moss	*Dicranum bonjeanii*	Undetermined		
Short-leaved Broom Moss	*Dicranum brevifolium*	Sensitive		
Long-forked Broom Moss	*Dicranum elongatum*	Secure		
Whip Broom Moss	*Dicranum flagellare*	Undetermined		
Fragile-leaved Broom Moss	*Dicranum fragilifolium*	Secure		
Curly Broom Moss	*Dicranum fuscescens*	Secure		
Greenland Broom Moss	*Dicranum groenlandicum*	Secure		
Fuzzy Broom Moss	*Dicranum leioneuron*	Undetermined		
Magic Cushion Moss	*Dicranum majus*	Undetermined		
Mountain Cushion Moss	*Dicranum montanum*	Undetermined		

Sidewalk Screw Moss Photo Credit: J Hollett

Common Dung Moss Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Muehlenbeck's Cushion Moss	*Dicranum muehlenbeckii*	Undetermined		
Ontarian Cushion Moss	*Dicranum ontariense*	Undetermined		
Many-leaved Cushion Moss	*Dicranum polysetum*	Secure		
Common Broom Moss	*Dicranum scoparium*	Secure		
Confusing Broom Moss	*Dicranum spadiceum*	Secure		
Fragile Broom Moss	*Dicranum tauricum*	Undetermined		
Wavy Broom Moss	*Dicranum undulatum*	Secure		
Blytt's Fork Moss	*Kiaeria blyttii*	Sensitive		
Sickle Fork Moss	*Kiaeria falcata*	Undetermined		
Snow Fork Moss	*Kiaeria glacialis*	Secure		
Starke's Fork Moss	*Kiaeria starkei*	Sensitive		
Green Spur Moss	*Oncophorus virens*	Secure		
Wahlenberg's Spur Moss	*Oncophorus wahlenbergii*	Secure		
Alpine Notchleaf Moss	*Paraleucobryum enerve*	Undetermined		
Long-leaved Fork Moss	*Paraleucobryum longifolium*	Undetermined		
Fine-toothed Streak Moss	*Rhabdoweisia crispata*	May Be At Risk		
Dicranales – Ditrichaceae				Dicranid mosses – Double-leaf mosses
Round-leaved Ceratodon Moss	*Ceratodon heterophyllus*	Undetermined		
Fire Moss	*Ceratodon purpureus*	Secure		
Erect-fruited Iris Moss	*Distichium capillaceum*	Secure		
Hagen's Iris Moss	*Distichium hagenii*	Undetermined		
Inclined Iris Moss	*Distichium inclinatum*	Secure		
Flexible Cow-hair Moss	*Ditrichum flexicaule*	Secure		
Slender Cow-hair Moss	*Ditrichum gracile*	Undetermined		
Blue Dew Moss	*Saelania glaucescens*	Undetermined		
Cylindric Hairy-teeth Moss	*Trichodon cylindricus*	Undetermined		
Dicranales – Fissidentaceae				Dicranid mosses – Pocket mosses
Maidenhair Pocket Moss	*Fissidens adianthoides*	Sensitive		
Arctic Pocket Moss	*Fissidens arcticus*	Undetermined		
Lesser Pocket Moss	*Fissidens bryoides*	Undetermined		
Large-leaved Pocket Moss	*Fissidens grandifrons*	Undetermined		
Purple-stalked Pocket Moss	*Fissidens osmundoides*	Secure		
Yew-leaved Pocket Moss	*Fissidens taxifolius*	Undetermined		
Dicranales – Grimmiaceae				Dicranidh mosses – Rock mosses
Yellow-green Rock Moss	*Bucklandiella heterosticha*	Undetermined	∃[4]	
Small-fruited Rock Moss	*Bucklandiella microcarpa*	Undetermined		
Narrow-leaved Rock Moss	*Bucklandiella sudetica*	May Be At Risk		
Clustered Rock Moss	*Codriophorus fascicularis*	Undetermined		
Great Bear Lake Sieve-tooth Moss	*Coscinodon arctolimnius*	Undetermined	∃[4]	
Copper Sieve-tooth Moss	*Coscinodon cribrosus*	Undetermined		
Toothless Grimmia Moss	*Grimmia anodon*	Undetermined	∃[4]	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Bow-stalked Grimmia Moss	*Grimmia crinitoleucophaea*	Undetermined		
Donn's Grimmia Moss	*Grimmia donniana*	Undetermined		
Brown Grimmia Moss	*Grimmia elongata*	Undetermined		
Long-beaked Grimmia Moss	*Grimmia longirostris*	Undetermined		
Water Grimmia Moss	*Grimmia mollis*	Presence Expected		
Curved-stalk Grimmia Moss	*Grimmia plagiopodia*	Undetermined		
Spreading-leaved Grimmia Moss	*Grimmia ramondii*	Undetermined		
Alpine Grimmia Moss	*Grimmia sessitana*	Undetermined		
Round-nerved Grimmia Moss	*Grimmia teretinervis*	Undetermined		
Twisted Grimmia Moss	*Grimmia torquata*	May Be At Risk		
Dingy Grimmia Moss	*Grimmia unicolor*	May Be At Risk		
Grey Rock Moss	*Niphotrichum canescens*	Secure		
Dense Rock Moss	*Racomitrium ericoides*	Undetermined		
Hoary Rock Moss	*Racomitrium lanuginosum*	Secure		
Agassiz's Bloom Moss	*Schistidium agassizii*	Undetermined		
Radiate Bloom Moss	*Schistidium apocarpum*	Secure		
Boreal Bloom Moss	*Schistidium boreale*	Undetermined		
Cryptic Bloom Moss	*Schistidium cryptocarpum*	Undetermined		
Dupret's Bloom Moss	*Schistidium dupretii*	Undetermined		
Arctic-alpine Bloom Moss	*Schistidium frigidum*	Undetermined		
Frisvoll's Bloom Moss	*Schistidium frisvollianum*	Undetermined		
Large-celled Bloom Moss	*Schistidium grandirete*	Undetermined		
Holmen's Bloom Moss	*Schistidium holmenianum*	Undetermined		
Papillose Bloom Moss	*Schistidium papillosum*	Undetermined		
Showy Bloom Moss	*Schistidium pulchrum*	Undetermined		
River Bloom Moss	*Schistidium rivulare*	Secure		
Robust Bloom Moss	*Schistidium robustum*	Undetermined		
Slender Bloom Moss	*Schistidium tenerum*	Sensitive		
Black Bloom Moss	*Schistidium trichodon*	May Be At Risk		
Bluish Bloom Moss	*Schistidium venetum*	Undetermined		
Dicranales – Scouleriaceae			Dicranid mosses – Scouler mosses	
Streamside Moss	*Scouleria aquatica*	Undetermined		
Dicranales – Seligeriaceae			Dicranid mosses – Limestone mosses	
Sharp-leaved Blind's Moss	*Blindia acuta*	Secure		
Chalk Bristle Moss	*Seligeria calcarea*	Sensitive		
Bent-foot Bristle Moss	*Seligeria campylopoda*	May Be At Risk		
Donn's Bristle Moss	*Seligeria donniana*	Undetermined		
Irish Bristle Moss	*Seligeria oelandica*	May Be At Risk		
Polar Limestone Moss	*Seligeria polaris*	May Be At Risk		
Small Bristle Moss	*Seligeria subimmersa*	May Be At Risk		
Three-ranked Bristle Moss	*Seligeria tristichoides*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Funariales – Disceliaceae				Funarid mosses – Flag mosses
Naked Flag Moss	*Discelium nudum*	May Be At Risk		
Funariales – Epemeraceae				Funarid mosses – Earth mosses
Serrated Earth Moss	*Ephemerum serratum*	Undetermined		
Funariales – Funariaceae				Funarid mosses – Rope mosses
Arctic Cord Moss	*Funaria arctica*	May Be At Risk		
Common Cord Moss	*Funaria hygrometrica*	Secure		
Small Cord Moss	*Funaria microstoma*	Undetermined		
Polar Cord Moss	*Funaria polaris*	May Be At Risk		
Funariales – Pseudoditrichaceae				Funarid mosses – Double-rope mosses
Great Bear Lake Double-rope Moss	*Pseudoditrichum mirabile*	Undetermined		
Funariales – Splachnaceae				Funarid mosses – Dung mosses
Carrion Moss	*Aplodon wormskjoldii*	Undetermined		
Yellow Dung Moss	*Splachnum luteum*	Sensitive		
Red Dung Moss	*Splachnum rubrum*	Undetermined		
Round-fruited Dung Moss	*Splachnum sphaericum*	Secure		
Rugged Dung Moss	*Splachnum vasculosum*	Sensitive		
Acuminate Trumpet Moss	*Tayloria acuminata*	Undetermined		
Froelich's Trumpet Moss	*Tayloria froelichiana*	Undetermined		
Tongued Taylor Moss	*Tayloria lingulata*	Undetermined		
Tooth-leaved Nitrogen Moss	*Tetraplodon angustatus*	Sensitive		
Entire-leaved Nitrogen Moss	*Tetraplodon mnioides*	Secure		
Pale Nitrogen Moss	*Tetraplodon pallidus*	Undetermined		
Paradox Nitrogen Moss	*Tetraplodon paradoxus*	Sensitive		
Urceolate Nitrogen Moss	*Tetraplodon urceolatus*	Secure		
Arctic Voit's Moss	*Voitia hyperborea*	Undetermined		
Hypnales – Amblystegiaceae				Hypnid mosses – Spear mosses
Jurkatzka's Feather Moss	*Amblystegium serpens*	Secure		
Heart-leaved Spear Moss	*Calliergon cordifolium*	Secure		
Giant Spear Moss	*Calliergon giganteum*	Secure		
Large Spear Moss	*Calliergon megalophyllum*	Undetermined		
Nunavut Spear Moss	*Calliergon orbicularecordatum*	Undetermined		
Richardson's Spear Moss	*Calliergon richardsonii*	Secure		
Common Large Wetland Moss	*Calliergonella cuspidata*	Undetermined		
Golden Creeping Moss	*Campyliadelphus chrysophyllus*	Secure		
Common Fine Wet Moss	*Campylium hispidulum*	Secure		
Yellow Starry Fen Moss	*Campylium stellatum*	Secure		
Haller's Fine Wet Moss	*Campylophyllum halleri*	Undetermined		
Coast Creeping Moss	*Conardia compacta*	Undetermined	∃[4]	
Fern-leaved Hook Moss	*Cratoneuron filicinum*	Secure		
Knieff's Hook Moss	*Drepanocladus aduncus*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Long-leaved Hook Moss	*Drepanocladus longifolius*	Undetermined		
Polygamous Hook Moss	*Drepanocladus polygamus*	Undetermined		
Dingy Hook Moss	*Drepanocladus sordidus*	Undetermined		
Lapland Hook Moss	*Hamatocaulis lapponicus*	Undetermined		
Varnished Hook Moss	*Hamatocaulis vernicosus*	Secure		
Willow Feather Moss	*Hygroamblystegium varium*	Sensitive		
Northern Brook Moss	*Hygrohypnum alpestre*	Undetermined		
Inflated Brook Moss	*Hygrohypnum eugyrium*	Undetermined		
Drab Brook Moss	*Hygrohypnum luridum*	Secure		
Claw Brook Moss	*Hygrohypnum ochraceum*	Undetermined		
Polar Brook Moss	*Hygrohypnum polare*	Sensitive		
Snow Brook Moss	*Hygrohypnum styriacum*	Undetermined		
Riparian Feather Moss	*Leptodictyum riparium*	Secure		
Sickle-leaved Loeskypnum Moss	*Loeskypnum badium*	Secure		
Curled Hook Moss	*Palustriella falcata*	Undetermined		
Short-leaved Spear Moss	*Pseudocalliergon brevifolium*	Secure		
Three-ranked Spear Moss	*Pseudocalliergon trifarium*	Secure		
Turgid Scorpion Moss	*Pseudocalliergon turgescens*	Secure		
Long-stalked Fine Wet Moss	*Pseudocampylium radicale*	Sensitive		
Snowbed Hook Moss	*Sanionia georgico-uncinata*	Undetermined		
Coastal Hook Moss	*Sanionia orthothecioides*	Undetermined		
Sickle Moss	*Sanionia uncinata*	Secure		
Ringless Spoon Moss	*Sarmentypnum exannulatum*	Secure		
Twiggy Spoon Moss	*Sarmentypnum sarmentosum*	Secure		
Pencil-like Spoon Moss	*Sarmentypnum trichophyllum*	Undetermined		
Tundra Spoon Moss	*Sarmentypnum tundrae*	Undetermined		
Cosson's Hook Moss	*Scorpidium cossonii*	Undetermined		
Rusty Hook Moss	*Scorpidium revolvens*	Secure		
Hooked Scorpion Moss	*Scorpidium scorpioides*	Secure		
Straw Moss	*Straminergon stramineum*	Secure		
Floating Hook Moss	*Warnstorfia fluitans*	Secure		
Spring Hook Moss	*Warnstorfia pseudostraminea*	Undetermined		
Hypnales – Brachytheciaceae				Hypnid mosses – Ragged mosses
Mountain Ragged Moss	*Brachytheciastrum collinum*	Secure		
Lawer's Ragged Moss	*Brachytheciastrum trachypodium*	Undetermined		
Velvet Ragged Moss	*Brachytheciastrum velutinum*	Secure		
Whitish Ragged Moss	*Brachythecium albicans*	Secure		
Field Ragged Moss	*Brachythecium campestre*	Undetermined		
Taiga Ragged Moss	*Brachythecium erythrorrhizon*	Undetermined		
Cold Ragged Moss	*Brachythecium frigidum*	Undetermined		
Greenland Ragged-moss	*Brachythecium groenlandicum*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Leigerg's Ragged-moss	*Brachythecium leibergii*	Undetermined		
Sand Ragged-moss	*Brachythecium mildeanum*	Undetermined		
Nelson's Ragged-moss	*Brachythecium nelsonii*	Undetermined		
Oedipodium Ragged-moss	*Brachythecium oedipodium*	Undetermined		
Snow Ragged Moss	*Brachythecium plumosum*	Undetermined		
River Ragged Moss	*Brachythecium rivulare*	Undetermined		
Rough-stalked Ragged Moss	*Brachythecium rutabulum*	Undetermined		
Golden Ragged Moss	*Brachythecium salebrosum*	Secure		
Thick Ragged Moss	*Brachythecium turgidum*	Secure		
Hair-pointed Moss	*Cirriphyllum cirrosum*	Secure		
Elegant Beaked Moss	*Eurhynchiastrum pulchellum*	Secure		
Dark Beaked Moss	*Rhynchostegium serrulatum*	Sensitive		
Glacier Ragged-moss	*Sciuro-hypnum glaciale*	May Be At Risk		
Reflexed Ragged Moss	*Sciuro-hypnum reflexum*	Undetermined		
Sickle-leaved Golden Moss	*Tomentypnum falcifolium*	Undetermined		
Golden Fuzzy Fen Moss	*Tomentypnum nitens*	Secure		

Small Red Sphagnum Moss
Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Hypnales – Entodontaceae				Hypnid mosses – Entodon mosses
Flat-stemmed Entodon Moss	*Entodon cladorrhizans*	Sensitive		
Lime Entodon Moss	*Entodon concinnus*	May Be At Risk		
Schleicher's Entodon Moss	*Entodon schleicheri*	May Be At Risk		
Hypnales – Fontinalaceae				Hypnid mosses – Water mosses
Lance-leaved Claw Moss	*Dichelyma falcatum*	May Be At Risk		
Slender Water Moss	*Fontinalis dalecarlica*	Undetermined		
River Moss	*Fontinalis hypnoides*	Undetermined		
Hypnales – Helodiaceae				Hypnid mosses – Bog mosses
Blandow's Wetland Plume Moss	*Helodium blandowii*	Undetermined		
Hypnales – Hylocomiaceae				Hypnid mosses – Stair-step mosses
Oake's Wood Moss	*Hylocomiastrum pyrenaicum*	Undetermined		
Stair-step Moss	*Hylocomium splendens*	Secure		
Red-stemmed Feather Moss	*Pleurozium schreberi*	Secure		
Square Shaggy Moss	*Rhytidiadelphus squarrosus*	Undetermined		
Subpinnate Gooseneck Moss	*Rhytidiadelphus subpinnatus*	Undetermined		
Electrified Cat's-tail Moss	*Rhytidiadelphus triquetrus*	Undetermined		
Hypnales – Hypnaceae				Hypnid mosses – Plait mosses
Chalk Comb Moss	*Ctenidium molluscum*	Undetermined		
Flat Stump Moss	*Herzogiella turfacea*	Sensitive		
Bamberger's Golden Plait Moss	*Hypnum bambergeri*	Secure		
Downy Plait Moss	*Hypnum callichroum*	Sensitive		
Cypress-leaved Plait Moss	*Hypnum cupressiforme*	Secure		
Hook-leaved Plait Moss	*Hypnum hamulosum*	Secure		
Holmen's Plait Moss	*Hypnum holmenii*	Secure		
Pellucid Plait Moss	*Hypnum imponens*	Undetermined		
Lindberg's Plait Moss	*Hypnum lindbergii*	Secure		
Stump Plait Moss	*Hypnum pallescens*	Sensitive		
Northern Plait Moss	*Hypnum plicatulum*	Secure		
Meadow Plait Moss	*Hypnum pratense*	Secure		
Tundra Plait Moss	*Hypnum procerrimum*	Secure		
Recurved Plait Moss	*Hypnum recurvatum*	Undetermined		
Revolute Plait Moss	*Hypnum revolutum*	Secure		
Curly Plait Moss	*Hypnum subimponens*	Sensitive		
Vaucher's Plait Moss	*Hypnum vaucheri*	Secure		
Mueller's Silk Moss	*Isopterygiopsis muelleriana*	May Be At Risk		
Neat Silk Moss	*Isopterygiopsis pulchella*	Secure		
Acuminate Erect-capsule Moss	*Orthothecium acuminatum*	Undetermined		
Golden Erect-capsule Moss	*Orthothecium chryseum*	Secure		
Fine-leaved Erect-capsule Moss	*Orthothecium intricatum*	Sensitive		
Reddish Erect-capsule Moss	*Orthothecium rufescens*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Shiny Erect-capsule Moss	*Orthothecium strictum*	Sensitive		
False Willow Moss	*Platydictya jungermannioides*	Secure		
Flat-brocade Moss	*Platygyrium repens*	May Be At Risk		
Knight's Plume Moss	*Ptilium crista-castrensis*	Secure		
Many-flowered Pylaisia Moss	*Pylaisia polyantha*	Secure		
Selwyn's Pylaisia Moss	*Pylaisiella selwynii*	Undetermined		
Hypnales – Myriniaceae				Hypnid mosses – Myrinia mosses
Flood Moss	*Myrinia pulvinata*	Sensitive		
Hypnales – Neckeraceae				Hypnid mosses – Neckera mosses
Feathery Neckera Moss	*Neckera pennata*	Sensitive		
Hypnales – Plagiotheciaceae				Hypnid mosses – Silk mosses
Berggren's Silk Moss	*Plagiothecium berggrenianum*	Undetermined		
Round Silk Moss	*Plagiothecium cavifolium*	Undetermined		
Dented Silk Moss	*Plagiothecium denticulatum*	Undetermined		
Bright Silk Moss	*Plagiothecium laetum*	Secure		
Hair Silk Moss	*Plagiothecium piliferum*	Undetermined		
Hypnales – Rhytidiaceae				Hypnid mosses – Glade mosses
Wrinkle-leaved Moss	*Rhytidium rugosum*	Secure		
Hypnales – Thuidiaceae				Hypnid mosses – Fern mosses
Wiry Fern Moss	*Abietinella abietina*	Secure		
Delicate Fern Moss	*Thuidium delicatulum*	Undetermined		
Hook-leaved Fern Moss	*Thuidium recognitum*	Undetermined		
Isobryales – Climaciaceae				Isobrid mosses – Tree mosses
Northern Tree Moss	*Climacium dendroides*	Secure		
Isobryales – Hedwigiaceae				Isobrid mosses – Hoar mosses
Fringed Hoar Moss	*Hedwigia ciliata*	Undetermined		
Isobryales – Leskeaceae				Isobrid mosses – Leskea mosses
Nerved Leske's Moss	*Leskeella nervosa*	Secure		
Brown Mountain Leske's Moss	*Pseudoleskea incurvata*	Undetermined		
Patent Leske's Moss	*Pseudoleskea patens*	Undetermined		
Dense-rooted Leske's Moss	*Pseudoleskea radicosa*	Undetermined		
Narrow-leaved Leske's Moss	*Pseudoleskea stenophylla*	May Be At Risk		
Rooftop Leske's Moss	*Pseudoleskeella tectorum*	Secure		
Isobryales – Pterigynandraceae				Isobrid mosses – Wing mosses
Small Mousetail Moss	*Myurella julacea*	Secure		
Siberian Mousetail Moss	*Myurella sibirica*	Undetermined		
Dwarf Mousetail Moss	*Myurella tenerrima*	Secure		
Capillary Wing Moss	*Pterigynandrum filiforme*	Undetermined		
Orthotrichales – Orthotrichaceae				Orthotrichid mosses – Bristle mosses
Lapland Yoke Moss	*Amphidium lapponicum*	Secure		
Mougeot's Yoke Moss	*Amphidium mougeotii*	Undetermined		

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Sharp-leaved Bristle Moss	*Orthotrichum alpestre*	Sensitive		
Anomalous Bristle Moss	*Orthotrichum anomalum*	Undetermined		
Hooded Bristle Moss	*Orthotrichum cupulatum*	Sensitive		
Smooth Bristle Moss	*Orthotrichum laevigatum*	Sensitive		
Blunt-leaved Bristle Moss	*Orthotrichum obtusifolium*	Sensitive		
Pale Bristle Moss	*Orthotrichum pallens*	Sensitive		
Glaucous Bristle Moss	*Orthotrichum pellucidum*	Sensitive		
Pylaie's Bristle Moss	*Orthotrichum pylaisii*	Sensitive		
Rock Bristle Moss	*Orthotrichum rupestre*	Undetermined		
Dark-green Bristle Moss	*Orthotrichum sordidum*	Undetermined		
Showy Bristle Moss	*Orthotrichum speciosum*	Secure		
Curve-leaved Pincushion Moss	*Ulota curvifolia*	Undetermined	∃[4]	
Pottiales – Encalyptaceae				Pottid mosses – Extinguisher mosses
Britton's Moss	*Bryobrittonia longipes*	Sensitive		
Cylindrical Extinguisher Moss	*Encalypta affinis*	Sensitive		
Alpine Extinguisher Moss	*Encalypta alpina*	Secure		
White-mouthed Extinguisher Moss	*Encalypta brevicollis*	Sensitive		
Fringed Extinguisher Moss	*Encalypta ciliata*	Sensitive		
Long-necked Candlesnuffer	*Encalypta longicollis*	Sensitive	ⓘ[2]	G3 – 2001
Blunt Extinguisher Moss	*Encalypta mutica*	May Be At Risk		G3 – 2001
Spiral Extinguisher Moss	*Encalypta procera*	Secure		
Ribbed Extinguisher Moss	*Encalypta rhaptocarpa*	Secure		
Vitt's Extinguisher Moss	*Encalypta vittiana*	May Be At Risk		
Common Extinguisher Moss	*Encalypta vulgaris*	Undetermined		
Pottiales – Pottiaceae				Pottid mosses – Pottia mosses
Short-beaked Screw Moss	*Aloina brevirostris*	Sensitive		
Rigid Screw Moss	*Aloina rigida*	Sensitive		
Clasping-leaved Beard Moss	*Barbula amplexifolia*	Undetermined		
Curly Beard Moss	*Barbula convoluta*	Undetermined		
Twisted-teeth Beard Moss	*Barbula indica*	Undetermined		
Prickly Beard Moss	*Barbula unguiculata*	Undetermined		
Rufous Beard Moss	*Bryoerythrophyllum ferruginascens*	Undetermined		
Red Beard Moss	*Bryoerythrophyllum recurvirostre*	Secure		
Rough-leaved Beard Moss	*Didymodon asperifolius*	Secure		
False Beard Moss	*Didymodon fallax*	Undetermined		
Rusty Beard Moss	*Didymodon ferrugineus*	Undetermined		
Gigantic Beard Moss	*Didymodon giganteus*	Undetermined		
Johansen's Beard Moss	*Didymodon johansenii*	Undetermined		
Leskea-like Beard Moss	*Didymodon leskeoides*	Undetermined		
Michigan Beard Moss	*Didymodon maschalogena*	Undetermined		
Big Beard Moss	*Didymodon maximus*	Undetermined		

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Black Beard Moss	*Didymodon nigrescens*	Undetermined		
Obtuse Beard Moss	*Didymodon perobtusus*	Undetermined		
Pointed Beard Moss	*Didymodon rigidulus*	Undetermined	∃[4]	
Spoon-shaped Beard Moss	*Didymodon subandreaeoides*	Sensitive		
Olive Beard Moss	*Didymodon tophaceus*	Undetermined		
Soft Beard Moss	*Didymodon vinealis*	Undetermined		
Whorled Tufa Moss	*Eucladium verticillatum*	Undetermined		
Tufted Rock Beardless Moss	*Gymnostomum aeruginosum*	Undetermined		
Slender Stubble Moss	*Gyroweisia tenuis*	May Be At Risk		
Heim's Chain-teeth Moss	*Hennediella heimii*	Secure		
Velenovsky's Moss	*Hilpertia velenovskyi*	May Be At Risk		
Curved-beaked Beardless Moss	*Hymenostylium recurvirostrum*	Secure		
Sendtner's Moss	*Molendoa sendtneriana*	Undetermined		
Spiral Wing-nerved Moss	*Pterygoneurum lamellatum*	Undetermined		
Oval-leaved Wing-nerved Moss	*Pterygoneurum ovatum*	Undetermined		
Broad-leaved Stegonia Moss	*Stegonia latifolia*	Sensitive		
Steppe Screw Moss	*Syntrichia caninervis*	Undetermined		
Norway Screw Moss	*Syntrichia norvegica*	Sensitive		
Sidewalk Screw Moss	*Syntrichia ruralis*	Secure		
Alpine Twisted Moss	*Tortella alpicola*	Undetermined		
Brittle Crisp-moss	*Tortella fragilis*	Secure		
Inclined Twisted Moss	*Tortella inclinata*	Undetermined		
Frizzled Twisted Moss	*Tortella tortuosa*	Secure		
Clasping-leaved Screw Moss	*Tortula amplexa*	Undetermined		
Narrow-leaved Screw Moss	*Tortula cernua*	Undetermined	∃[4]	
Hoppe's Screw Moss	*Tortula hoppeana*	Secure		
Laurer's Screw Moss	*Tortula laureri*	Undetermined		
Alpine Screw Moss	*Tortula leucostoma*	Secure		
Mucronate Screw Moss	*Tortula mucronifolia*	Secure		
Blunt-leaved Screw Moss	*Tortula obtusifolia*	Undetermined		
Systylous Screw Moss	*Tortula systylia*	Sensitive		
Arctic Crisp Moss	*Trichostomum arcticum*	Sensitive		
Curly Crisp Moss	*Trichostomum crispulum*	Undetermined		
Narrow-fruited Crisp Moss	*Trichostomum tenuirostre*	Undetermined		
Green-tufted Stubble Moss	*Weissia controversa*	Undetermined	∃[4]	
Bryophyta – Polytrichopsida				**Mosses – Hair mosses**
Polytrichales – Buxaumiaceae				Polytrichid mosses – Elfcap mosses
Brown Shield Moss	*Buxbaumia aphylla*	May Be At Risk		
Polytrichales – Polytrichaceae				Polytrichid mosses – Haircap mosses
Selwyn's Smoothcap Moss	*Atrichum selwynii*	Undetermined		
Slender Smoothcap Moss	*Atrichum tenellum*	Undetermined		

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Lyall's Haircap Moss	*Meiotrichum lyallii*	Undetermined		
Sickle-leaved Hair Moss	*Oligotrichum falcatum*	May Be At Risk		
Mountain Hair Moss	*Pogonatum dentatum*	Undetermined		
Urn Hair Moss	*Pogonatum urnigerum*	Undetermined		
Alpine Haircap Moss	*Polytrichastrum alpinum*	Secure		
Bank Haircap Moss	*Polytrichastrum formosum*	Undetermined		
Long-stalked Haircap Moss	*Polytrichastrum longisetum*	Undetermined		
Northern Haircap Moss	*Polytrichastrum sexangulare*	May Be At Risk		
Common Haircap Moss	*Polytrichum commune*	Secure		
Hyperboreal Haircap Moss	*Polytrichum hyperboreum*	Sensitive		
Jensen's Haircap Moss	*Polytrichum jensenii*	Undetermined		
Juniper Haircap Moss	*Polytrichum juniperinum*	Secure		
Bristly Haircap Moss	*Polytrichum piliferum*	Secure		
Bog Haircap Moss	*Polytrichum strictum*	Secure		
Swartz's Haircap Moss	*Polytrichum swartzii*	Undetermined		
Little Wolverine Moss	*Psilopilum cavifolium*	Secure		
Large Wolverine Moss	*Psilopilum laevigatum*	May Be At Risk		
Polytrichales – Tetraphidaceae			Polytrichid mosses – Four-toothed mosses	
Common Four-toothed Moss	*Tetraphis pellucida*	Undetermined		
Bryophyta – Sphagnopsida				**Mosses – Peat mosses**
Sphagnales – Sphagnaceae			Sphagnid mosses – Sphagnum mosses	
Large Sphagnum Moss	*Sphagnum angustifolium*	Secure		
Ringed Sphagnum Moss	*Sphagnum annulatum*	Undetermined		
Aongstroem's Peat Moss	*Sphagnum aongstroemii*	Secure		
Baltic Sphagnum Moss	*Sphagnum balticum*	Secure		
Small Red Sphagnum Moss	*Sphagnum capillifolium*	Secure		
Central Shagnum Moss	*Sphagnum centrale*	Undetermined		
Compact Sphagnum Moss	*Sphagnum compactum*	Secure		
Twisted Sphagnum Moss	*Sphagnum contortum*	Undetermined		
Feathery Sphagnum Moss	*Sphagnum cuspidatum*	Undetermined		
Fat-top Sphagnum Moss	*Sphagnum fallax*	Undetermined		
Fringed Sphagnum Moss	*Sphagnum fimbriatum*	Secure		
Brown Sphagnum Moss	*Sphagnum fuscum*	Secure		
Girgensohn's Sphagnum Moss	*Sphagnum girgensohnii*	Secure		
Jensen's Sphagnum Moss	*Sphagnum jensenii*	Undetermined		
Lena River Sphagnum Moss	*Sphagnum lenense*	Secure		
Lindberg's Sphagnum Moss	*Sphagnum lindbergii*	Secure		
Magellan Sphagnum Moss	*Sphagnum magellanicum*	Secure		
Greater Sphagnum Moss	*Sphagnum majus*	Undetermined		
Mendocino Sphagmun Moss	*Sphagnum mendocinum*	Undetermined		
Blunt Sphagnum Moss	*Sphagnum obtusum*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Oriental Sphagnum Moss	*Sphagnum orientale*	Undetermined		
Glossy Sphagnum Moss	*Sphagnum perfoliatum*	Undetermined		
Flat-leaved Sphagnum Moss	*Sphagnum platyphyllum*	Undetermined		
Beautiful Sphagnum Moss	*Sphagnum pulchrum*	Undetermined		
Recurved Sphagnum Moss	*Sphagnum recurvum*	Secure		
Streamside Sphagnum Moss	*Sphagnum riparium*	Secure		
Red Sphagnum Moss	*Sphagnum rubellum*	Secure		
Russow's Sphagnum Moss	*Sphagnum russowii*	Secure		
Shaggy Sphagnum Moss	*Sphagnum squarrosum*	Secure		
Steere's Sphagnum Moss	*Sphagnum steerei*	Undetermined		
Lustrous Sphagnum Moss	*Sphagnum subnitens*	Undetermined		
Orange Sphagnum Moss	*Sphagnum subsecundum*	Secure		
Rigid Sphagnum Moss	*Sphagnum teres*	Secure		
Warnstorf's Sphagnum Moss	*Sphagnum warnstorfii*	Secure		
Wilf's Sphagnum Moss	*Sphagnum wilfii*	Undetermined		G2G3 – 2011
Wulf Peat Moss	*Sphagnum wulfianum*	Sensitive		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected

Ribbed Bog Moss Photo Credit: J Hollett

Donn's Grimmia Moss Photo Credit: J Hollett

Common Haircap Moss
Photo Credit: J Hollett

6.30 Macro-lichens

Pebbled Pixie-cup Lichen
Photo J Hollett

Lichens are unique organisms. They live in a symbiotic relationship in which each species helps the other – a fungus protects an alga while the alga obtains food through photosynthesis for the fungus. It was discovered in 2016 that yeast is involved as a third partner in lichen symbiosis[12]. Shape, colour and reproduction are determined by the fungus. Also the scientific name of the lichen classifies it as a fungus.

Macrolichens are the larger more colourful lichens that grow on trees, rocks and the ground, especially in the northern regions. Microlichens form crusts that adhere to or grow within their substrate, usually rocks or trees, but sometimes on soil. With crust lichens, occasionally only the fruiting body of the fungus is visible. All macro-lichens found so far in the NWT are listed below; the micro-lichens, of which we have about 300 species, will be ranked in future reports.

Lichens are identified by growth form, colour, asexual reproduction forms, as well as the characters of the fungal spore sac tip and the fungal spores. Keys of the lichen characters are used to systematically obtain a name for the lichen. Photos help as well!

I was lucky to observe one of my favourite lichens while collecting in the NWT. The 40 years I have only seen *Glypholecia scabra* (desert rockscab lichen) four times, all on limestone or boulders subjected to lime dust. The first time was in New Mexico, twice in Alberta, and the fourth time in 2013 on a rock outcrop at Carcajou Lake, NWT. Finding rare lichen like this is always exciting!

Janet Marsh
Lichenology Consultant
Okotoks, AB

Lichens are very difficult to identify and few people truly understand them. I sometimes get asked why I'm intrigued by lichens. For me, these reasons stand out. Lichens are incredibly beautiful and diverse. Lichens can appear nondescript, close inspection will reveal a world of spectacular beauty and diversity.

Lichens are biologically fascinating. That unrelated life forms – fungi, algae, yeast – can come together to form composite organisms is nothing short of amazing. The benefits of this symbiotic relationship are so profound that approximately 20,000 lichen species flourish in virtually every corner of the planet, often in places where few other life forms can survive.

Lichens are accessible. They live everywhere, can be examined year round, and best of all, they don't run away when approached. With lichens, every safari is a success.

We know that lichens are essential to one of our most iconic species, caribou. However, lichens are still under-researched in the NWT. Even basic work to record the traditional knowledge on lichens and to inventory lichen species has been limited. This means that much lichen discovery awaits, and we can all play a role.

For example, *Letharia vulpina*, or wolf lichen, is a bright yellow tree-dwelling species that was found at one location approximately 20 km from Yellowknife. While strikingly beautiful, wolf lichen is poisonous. At least one aboriginal group in North America used it to make poison arrowheads, and in northern Europe, it was once used to poison wolves and other predators – hence the name. In North America, Wolf Lichen is common in the Pacific Northwest. The specimen found near Yellowknife appears to be a first record for the NWT.

If interested in learning about lichens, you can find a wealth of information both on-line and in print. A number of lichen appreciation groups have been established on social media websites in recent years, and these too are excellent sources of information. These groups allow you to connect with both amateur and professional lichenologists, and are great places to get help with species identification.

Get involved! Learning about lichens will enrich your life, and with a little bit of effort, you can be an important contributor to NWT lichen science. If you do make an interesting find such as a potentially new species record for the NWT, a specimen should be provided to a reputed herbarium in Canada or abroad.

Jeff Hollett
NWT Lichen Enthusiast
Yellowknife, NT

[12] https://www.purdue.edu/newsroom/releases/2016/Q3/yeast-emerges-as-hidden-third-partner-in-lichen-symbiosis.html

List 30. **Macro-lichens**

There are 331 species of macro-lichens confirmed present in the NWT. An additional 26 species are expected to be present. Two species are of global conservation concern. About another 300 species of micro-lichens are expected to be in the NWT. These will be ranked in future reports. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Esslinger (2015).

Elegant Sunburst Lichen — Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Ascomycota – Lecanoromycetes				**Ascomycete fungi – Lichenized fungi**
Acarosporales – Acarosporaceae				Acarosporid lichens – Rockscab lichens
Desert Rockscab Lichen	*Glypholecia scabra*	May Be At Risk		G3 – 2002
Agaricales – Hygrophoraceae				Agaricid lichens – Mushroom-like lichens
Hudson Mushroom Lichen	*Lichenomphalia hudsoniana*	Sensitive		
Greenpea Mushroom Lichen	*Lichenomphalia umbellifera*	Secure		
Candelariales – Candelariaceae				Candelarid lichens – Candleflame lichens
Elfin Candleflame Lichen	*Candelaria concolor*	Undetermined		
Lecanorales – Cladoniaceae				Lecanorid lichens – Pixie lichens
Scantily Clad Pixie Lichen	*Cladonia acuminata*	Secure	ⓘ[5]	
Alaska Pixie Lichen	*Cladonia alaskana*	Secure	ⓘ[3]	
Quill Pixie Lichen	*Cladonia amaurocraea*	Secure		
Combed Reindeer Lichen	*Cladonia arbuscula*	Secure		
Yellowhorn Pixie Lichen	*Cladonia bacilliformis*	Undetermined		
Toy Soldiers Lichen	*Cladonia bellidiflora*	Undetermined		
Boreal Pixie-cup Lichen	*Cladonia borealis*	Secure		
Stump Soldiers Lichen	*Cladonia botrytes*	Secure		
Lesser Ribbed Pixie Lichen	*Cladonia cariosa*	Secure		
Crowned Pixie-cup Lichen	*Cladonia carneola*	Undetermined		
Singing Pixie Lichen	*Cladonia cenotea*	Secure		
Browned Pixie-cup Lichen	*Cladonia cervicornis*	Undetermined		
Granulating Pixie-cup Lichen	*Cladonia chlorophaea*	Secure		
Madame Pixie Lichen	*Cladonia coccifera*	Secure	ⓘ[5]	
Mama Littlehorn Pixie Lichen	*Cladonia coniocraea*	Secure		
Humble Pixie-cup Lichen	*Cladonia conista*	Undetermined		
Bighorn Pixie Lichen	*Cladonia cornuta*	Secure		
Organ-pipe Lichen	*Cladonia crispata*	Secure		
British Soldiers Lichen	*Cladonia cristatella*	Secure	∃[3]	
Ambiguous Pixie-cup Lichen	*Cladonia cryptochlorophaea*	Undetermined		
Blue-footed Pixie Lichen	*Cladonia cyanipes*	Secure		
Strip-tease Pixie Lichen	*Cladonia decorticata*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Lesser Sulphur-cup Lichen	*Cladonia deformis*	Secure		
Finger Pixie-cup Lichen	*Cladonia digitata*	Sensitive		
Orange-footed Pixie Lichen	*Cladonia ecmocyna*	Secure	ⓘ[5]	
Trumpeting Pixie Lichen	*Cladonia fimbriata*	Secure		
Smooth Pixie Lichen	*Cladonia gracilis*	Secure	∃[5]	
Grainy Cladonia	*Cladonia granulans*	May Be At Risk	∃[6]	
Gray's Pixie-cup Lichen	*Cladonia grayi*	Sensitive		
Kanewski's Cladonia	*Cladonia kanewskii*	Presence Expected		
Brown-pebbled Pixie-cup	*Cladonia libifera*	Undetermined	∃[6]	
Lipstick Pixie Lichen	*Cladonia macilenta*	Undetermined		
Bullet-proof Pixie Lichen	*Cladonia macroceras*	Undetermined		
Fig-Leaf Pixie Lichen	*Cladonia macrophylla*	Secure		
Large-leaved Pixie Lichen	*Cladonia macrophyllodes*	Secure		
Towering Pixie Lichen	*Cladonia maxima*	Undetermined		
Gritty Pixie-cup Lichen	*Cladonia merochlorophaea*	Undetermined		
Shape-shifting Pixie Lichen	*Cladonia multiformis*	Secure		
Lapland Cladonia	*Cladonia nipponica*	Presence Expected		
Greater Pied Pixie Lichen	*Cladonia phyllophora*	Secure		
Moderate Sulphur-cup Lichen	*Cladonia pleurota*	Secure		
Rosetted Pixie-cup Lichen	*Cladonia pocillum*	Secure		
Pebbled Pixie-cup Lichen	*Cladonia pyxidata*	Secure		
Gray Reindeer Lichen	*Cladonia rangiferina*	Secure		
Wand Lichen	*Cladonia rei*	Undetermined		
Winged Pixie Lichen	*Cladonia scabriuscula*	Sensitive		
Scotter's Cladonia	*Cladonia scotteri*	Undetermined		
Dragon Pixie Lichen	*Cladonia squamosa*	Secure		
Star-nosed Reindeer Lichen	*Cladonia stellaris*	Secure		
Reptilian Pixie-cup Lichen	*Cladonia straminea*	Secure		
Lesser Pied Pixie Lichen	*Cladonia stricta*	Undetermined		
Black-footed Reindeer Lichen	*Cladonia stygia*	Secure		
Subcariosa-club Lichen	*Cladonia subcariosa*	Undetermined		
Rosegarden Pixie Lichen	*Cladonia subfurcata*	Secure		
Antlered Pixie Lichen	*Cladonia subulata*	Secure		
Greater Sulphur-cup Lichen	*Cladonia sulphurina*	Secure		
Greater Ribbed Pixie Lichen	*Cladonia symphycarpa*	Secure		
Blue Pork Pixie Lichen	*Cladonia thomsonii*	Sensitive		
Arctic Pied Pixie Lichen	*Cladonia trassii*	Undetermined		
Crazy-scale Pixie Lichen	*Cladonia turgida*	Undetermined	∃[3]	
Thorn Pixie Lichen	*Cladonia uncialis*	Secure		
Wainio's Reindeer Pixie Lichen	*Cladonia wainioi*	Undetermined		
Robust Matchstick Lichen	*Pilophorus robustus*	May Be At Risk		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Lecanorales – Coccocarpiaceae				Lecanorid lichens – Hairball lichens
Rock Hairball Lichen	*Spilonema revertens*	Sensitive		
Lecanorales – Gypsoplacaceae				Lecanorid lichens – Earthscale lichens
Gypsum Earthscale Lichen	*Gypsoplaca macrophylla*	Undetermined	∃[2]	
Lecanorales – Lecanoraceae				Lecanorid lichens – Rockbright lichens
Pink-eyed Rock-posy Lichen	*Rhizoplaca chrysoleuca*	Undetermined		
Green-eyed Rock-posy Lichen	*Rhizoplaca melanophthalma*	Undetermined	∃[3]	
Scattered Rock-posy Lichen	*Rhizoplaca subdiscrepans*	Undetermined	∃[3]	
Lecanorales – Massalongiaceae				Lecanorid lichens – Liver lichens
Moss Liver Lichen	*Massalongia carnosa*	Secure		
Eyed Mossthorns Lichen	*Polychidium muscicola*	Sensitive		
Lecanorales – Parmeliaceae				Lecanorid lichens – Crottle lichens
Mountain Candlewax Lichen	*Ahtiana sphaerosporella*	Sensitive		
Green Witch's Hair	*Alectoria ochroleuca*	Secure		
Familiar Witch's Hair Lichen	*Alectoria sarmentosa*	Presence Expected		
Lesser Rock Grub Lichen	*Allantoparmelia almquistii*	Undetermined	∃[3]	
Greater Rock Grub Lichen	*Allantoparmelia alpicola*	Secure		
Siberian Rock Grub Lichen	*Allantoparmelia sibirica*	Presence Expected		
V-fingers Lichen	*Allocetraria madreporiformis*	Secure		
Thin-man's Icelandmoss Lichen	*Arctocetraria andrejevii*	Secure		
Tentacled Icelandmoss Lichen	*Arctocetraria nigricascens*	Undetermined		
Ripple Ring Lichen	*Arctoparmelia centrifuga*	Secure		
Finger Ring Lichen	*Arctoparmelia incurva*	Secure		
Arctic Ring Lichen	*Arctoparmelia separata*	Secure		
Abrading Ring Lichen	*Arctoparmelia subcentrifuga*	Undetermined	∃[3]	
Golden Hankie Lichen	*Asahinea chrysantha*	Secure		
Silver Hankie Lichen	*Asahinea scholanderi*	Secure		
Mountain Diamondback Lichen	*Brodoa oroarctica*	Secure		
Arctic Pretzel Lichen	*Bryocaulon divergens*	Secure		
Mottled Horsehair Lichen	*Bryoria cervinula*	Presence Expected	ⓘ[6]	
Burrhed Horsehair Lichen	*Bryoria furcellata*	Undetermined	∃[4]	
Pale-footed Horsehair Lichen	*Bryoria fuscescens*	Secure		
Wire Horsehair Lichen	*Bryoria glabra*	Undetermined	∃[4]	
Boreal Horsehair Lichen	*Bryoria implexa*	Presence Expected	∃[4]	
Blonde Horsehair Lichen	*Bryoria nadvornikiana*	Secure		
Tundra Horsehair Lichen	*Bryoria nitidula*	Secure		
Pike's Horsehair Lichen	*Bryoria pikei*	Undetermined	∃[4]	
Mountain Horsehair Lichen	*Bryoria pseudofuscescens*	Undetermined	∃[4]	
Spangled Horsehair Lichen	*Bryoria simplicior*	Secure		
Pied Horsehair Lichen	*Bryoria tenuis*	Presence Expected		
Elegant Horsehair Lichen	*Bryoria trichodes*	Undetermined	∃[4]	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Spiny Heath Lichen	*Cetraria aculeata*	Secure		
Heath Icelandmoss Lichen	*Cetraria ericetorum*	Secure		
True Icelandic Lichen	*Cetraria islandica*	Secure		
Kamchatka Icelandmoss Lichen	*Cetraria kamczatica*	Sensitive		
Striped Icelandic Lichen	*Cetraria laevigata*	Secure		
Dubious Heath Lichen	*Cetraria muricata*	Undetermined		
Ciliated Icelandmoss Lichen	*Cetraria nigricans*	Secure		
Small-toothed Icelandmoss Lichen	*Cetraria odontella*	Undetermined	∃[3]	
Intermingled Icelandmoss Lichen	*Cetrariella commixta*	Secure		
Snow-bed Icelandmoss Lichen	*Cetrariella delisei*	Secure		
Greater Ruffled Icelandmoss Lichen	*Cetrariella fastigiata*	Undetermined		
Arctic Butterfingers Lichen	*Dactylina arctica*	Secure		
Pacific Butterfingers Lichen	*Dactylina beringica*	Secure		
Frost Fingers Lichen	*Dactylina ramulosa*	Secure		
Mountain Oakmoss Lichen	*Evernia divaricata*	Undetermined		
Boreal Oakmoss Lichen	*Evernia mesomorpha*	Secure		
Arctic Oakmoss Lichen	*Evernia perfragilis*	Secure		
Curled Snow Lichen	*Flavocetraria cucullata*	Secure		
Crinkled Snow Lichen	*Flavocetraria nivalis*	Secure		
Black Witch's Beard Lichen	*Gowardia arctica*	May Be At Risk	ⓘ[3]	
Gray Witch's Beard Lichen	*Gowardia nigricans*	Secure		
Varnished Tube Lichen	*Hypogymnia austerodes*	Secure		
Powdered Tube Lichen	*Hypogymnia bitteri*	Secure		
Monks-hood Lichen	*Hypogymnia physodes*	Secure		
Viviparous Tube Lichen	*Hypogymnia subobscura*	Secure		
Umber Monk's Hood Lichen	*Hypogymnia vittata*	Undetermined	∃[3]	
Salted Starburst Lichen	*Imshaugia aleurites*	Secure		
Wolf Lichen	*Letharia vulpina*	Undetermined	#	
Thornless Tumbleweed Lichen	*Masonhalea inermis*	Sensitive	ⓘ[5]	
Arctic Tumbleweed Lichen	*Masonhalea richardsonii*	Secure		
Rimmed Camouflage Lichen	*Melanelia hepatizon*	Secure		
Alpine Camouflage Lichen	*Melanelia stygia*	Secure		
Polished Camouflage Lichen	*Melanelixia glabratula*	Undetermined	∃[3]	
Abraded Camouflage Lichen	*Melanelixia subaurifera*	Secure		
Elegant Camouflage Lichen	*Melanohalea elegantula*	Secure		
Lustrous Camouflage Lichen	*Melanohalea exasperatula*	Secure		
Townhall Camouflage Lichen	*Melanohalea infumata*	Secure		
Spotted Camouflage Lichen	*Melanohalea olivacea*	Secure		
Olive Camouflage Lichen	*Melanohalea olivaceoides*	Presence Expected		
Northern Camouflage Lichen	*Melanohalea septentrionalis*	Secure		
Mealy Camouflage Lichen	*Montanelia disjuncta*	Secure		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Shingled Camouflage Lichen	*Montanelia panniformis*	Secure		
Powedered Camouflage Lichen	*Montanelia sorediata*	Secure		
Dimpled Camouflage Lichen	*Montanelia tominii*	Secure		
Fraudans Shield Lichen	*Parmelia fraudans*	Secure		
Smoky Crottle Lichen	*Parmelia omphalodes*	Secure		
Salted Shield Lichen	*Parmelia saxatilis*	Secure		
Silver-rimmed Crottle Lichen	*Parmelia skultii*	Undetermined	∃[3]	
Hammered Shield Lichen	*Parmelia sulcata*	Secure		
Green Starburst Lichen	*Parmeliopsis ambigua*	Secure		
Gray Starburst Lichen	*Parmeliopsis hyperopta*	Secure		
Varied Rag Lichen	*Platismatia glauca*	Sensitive		
Coarse Rockwool	*Pseudephebe minuscula*	Secure		
Fine Rockwool	*Pseudephebe pubescens*	Secure		
Fringed Wrinkle-lichen	*Tuckermannopsis americana*	Secure		
Powdered Wrinkle-lichen	*Tuckermannopsis chlorophylla*	Sensitive		
Broad Wrinkle-lichen	*Tuckermannopsis platyphylla*	Undetermined		
Chestnut Wrinkle-lichen	*Tuckermannopsis sepincola*	Secure		
Huckleberry Icelandmoss Lichen	*Tuckermannopsis subalpina*	Presence Expected		

Silver-edged Freckle Pelt Lichen
Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Pitted Beard Lichen	*Usnea cavernosa*	Undetermined		
Fishbone Beard Lichen	*Usnea dasopoga*	Undetermined		
Lustrous Beard Lichen	*Usnea glabrata*	Undetermined		
Spotted Beard Lichen	*Usnea glabrescens*	Undetermined		
Bristly Beard Lichen	*Usnea hirta*	Undetermined		
Powder-ringed Beard Lichen	*Usnea lapponica*	Undetermined		
Straw Beard Lichen	*Usnea scabrata*	Secure		
Zebra Beard Lichen	*Usnea sphacelata*	May Be At Risk		
Nit Beard Lichen	*Usnea subfloridana*	Undetermined		
Embossed Beard Lichen	*Usnea substerilis*	Undetermined		
Powdered Sunshine Lichen	*Vulpicida pinastri*	Secure		
Limestone Sunshine Lichen	*Vulpicida tilesii*	Secure		
Greater Leaping Rockfrog Lichen	*Xanthoparmelia chlorochroa*	Undetermined	∃[3]	
Colorado Rockfrog Lichen	*Xanthoparmelia coloradoensis*	Undetermined		
Palomino Rockfrog Lichen	*Xanthoparmelia stenophylla*	Undetermined		
Barely Hopping Rockfrog Lichen	*Xanthoparmelia wyomingica*	Sensitive	ⓘ[2]	
Lecanorales – Physciaceae				Lecanorid lichens – Rosette lichens
Hairy Fringe Lichen	*Anaptychia crinalis*	Sensitive	∃[4]	
Powdered Fringe Lichen	*Heterodermia speciosa*	May Be At Risk		
Upstanding Shadow Lichen	*Phaeophyscia constipata*	Sensitive		
Smiling Shadow Lichen	*Phaeophyscia endococcinodes*	Undetermined		
Dark Shadow Lichen	*Phaeophyscia sciastra*	Secure		
Hooded Rosette Lichen	*Physcia adscendens*	Secure		
Hoary Rosette Lichen	*Physcia aipolia*	Secure		
Outward-looking Rosette Lichen	*Physcia alnophila*	Undetermined		
Blue-gray Rosette Lichen	*Physcia caesia*	Secure		
Powder-tipped Rosette Lichen	*Physcia dubia*	Secure		
Black-eyed Rosette Lichen	*Physcia phaea*	Sensitive		
Immaculate Rosette Lichen	*Physcia stellaris*	Undetermined		
Beaded Rosette Lichen	*Physcia tribacia*	Undetermined	∃[3]	
Petaled Frost Lichen	*Physconia americana*	Undetermined		
Bottlebrush Frost Lichen	*Physconia detersa*	Undetermined		
Ground Frost Lichen	*Physconia muscigena*	Secure		
Crescent Frost Lichen	*Physconia perisidiosa*	Secure		
Arboreal Bottle-collection Lichen	*Tholurna dissimilis*	May Be At Risk		
Lecanorales – Psoraceae				Lecanorid lichens – Scale lichens
Blushing Scale Lichen	*Psora decipiens*	Secure		
Mountain Scale Lichen	*Psora himalayana*	Secure		
Pea-green Scale Lichen	*Psora rubiformis*	Undetermined	∃[6]	
High Arctic Scale Lichen	*Psora tenuifolia*	Undetermined		G1G3 – 2002
Blue-edged Scale Lichen	*Psorula rufonigra*	Presence Expected		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Lecanorales – Ramalinaceae				Lecanorid lichens – Ribbon lichens
Arctic Ribbon Lichen	*Ramalina almquistii*	Undetermined		
Punctured Ribbon Lichen	*Ramalina dilacerata*	Sensitive	∃[5]	
Rock Ribbon Lichen	*Ramalina intermedia*	Undetermined	∃[3]	
Hooded Ribbon Lichen	*Ramalina obtusata*	Undetermined		
Chalky Ribbon Lichen	*Ramalina pollinaria*	Undetermined		
Frayed Ribbon Lichen	*Ramalina roesleri*	Undetermined		
Broom Ribbon Lichen	*Ramalina scoparia*	Presence Expected		
Fan Ribbon Lichen	*Ramalina sinensis*	Undetermined	∃[3]	
Angel's Hair Lichen	*Ramalina thrausta*	Presence Expected		
Lecanorales – Sphaerophoraceae				Lecanorid lichens – Coral lichens
Cushion Coral Lichen	*Sphaerophorus fragilis*	Sensitive		
Northern Coral Lichen	*Sphaerophorus globosus*	Secure		
Lecanorales – Stereocaulaceae				Lecanorid lichens – Foam lichens
Alpine Foam Lichen	*Stereocaulon alpinum*	Secure		
Sandy Foam Lichen	*Stereocaulon arenarium*	May Be At Risk		
Cauliflower Foam Lichen	*Stereocaulon botryosum*	Sensitive		
Granular Soil Foam Lichen	*Stereocaulon condensatum*	Sensitive		
Finger-scale Foam Lichen	*Stereocaulon dactylophyllum*	Undetermined		
Alpine Soil Foam Lichen	*Stereocaulon glareosum*	Secure		
Grand Foam Lichen	*Stereocaulon grande*	Secure		
Groendland Foam Lichen	*Stereocaulon groenlandicum*	Presence Expected		
Encrusted Coral Lichen	*Stereocaulon incrustatum*	Undetermined		
Pacific Brain Foam Lichen	*Stereocaulon intermedium*	Presence Expected		
High Arctic Foam Lichen	*Stereocaulon leprocephalum*	Undetermined		
Cottontail Foam Lichen	*Stereocaulon paschale*	Secure		
Snow Foam Lichen	*Stereocaulon rivulorum*	Secure		
Woolly Foam Lichen	*Stereocaulon savickii*	Presence Expected		
Rock Foam Lichen	*Stereocaulon saxatile*	Undetermined		
Two-toned Foam Lichen	*Stereocaulon symphycheilum*	Undetermined		
Eyed Foam Lichen	*Stereocaulon tomentosum*	Secure		
Variegated Foam Lichen	*Stereocaulon vesuvianum*	Sensitive		
Lecanorales – Teloschistaceae				Lecanorid lichens – Orange lichens
Shrubby Sunburst Lichen	*Polycauliona candelaria*	Secure		
Pin-cushion Sunburst Lichen	*Polycauliona polycarpa*	Sensitive		
Elegant Sunburst Lichen	*Rusavskia elegans*	Secure		
Sugared Sunburst Lichen	*Rusavskia sorediata*	Secure		
Orangebush Lichen	*Seirophora aurantiaca*	May Be At Risk		
Crannied Orangebush Lichen	*Seirophora contortuplicata*	Undetermined	∃[2]	
Arctic Sunburst Lichen	*Xanthomendoza borealis*	Undetermined	∃[3]	
Hooded Sunburst Lichen	*Xanthomendoza fallax*	Undetermined		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Bare-bottomed Sunburst Lichen	*Xanthomendoza fulva*	Undetermined		
Powdery Sunburst Lichen	*Xanthomendoza ulophyllodes*	Undetermined		
Lichinales – Lichinaceae				Lichinid lichens – Rockshag lichens
Dryside Rockshag Lichen	*Ephebe hispidula*	Undetermined		
Waterside Rockshag Lichen	*Ephebe lanata*	Undetermined		
Mourning Phlegm Lichen	*Lempholemma polyanthes*	Undetermined		
Frosted Rockserpent Lichen	*Zahlbrucknerella calcarea*	Sensitive	∃[2]	
Ostropales – Arctomiaceae				Ostropid lichens – Arctic rosette lichens
Delicate Arctomia Lichen	*Arctomia delicatula*	Undetermined	∃[3]	
Rust-brown Tiny Rosette Lichen	*Arctomia interfixa*	Sensitive		
Ostropales – Baeomycetaceae				Ostropid lichens – Beret lichens
Fleshy Beret Lichen	*Baeomyces carneus*	Undetermined		
Carpet Beret Lichen	*Baeomyces placophyllus*	Secure		
Brown Beret Lichen	*Baeomyces rufus*	Secure		
Pink Earth Lichen	*Dibaeis baeomyces*	Sensitive		
Peltigerales – Collemataceae				Peltigerid lichens – Tarpaper lichens
Ten-cent Tarpaper Lichen	*Blennothallia crispa*	Undetermined	∃[3]	
Protracted Tarpaper Lichen	*Callome multipartita*	Undetermined	∃[3]	
Flaking Tarpaper Lichen	*Collema flaccidum*	Presence Expected		
Effervescent Tarpaper Lichen	*Collema furfuraceum*	Sensitive		
Waterside Tarpaper Lichen	*Collema glebulentum*	Undetermined	∃[2]	
Petalled Tarpaper	*Collema subparvum*	Undetermined	∃[2]	
Caesar's Tarpaper Lichen	*Enchylium bachmanianum*	Sensitive		
Lime-loving Tarpaper Lichen	*Enchylium limosum*	Undetermined	∃[3]	
Gilled Tarpaper Lichen	*Enchylium polycarpon*	Sensitive		
Soil Tarpaper Lichen	*Enchylium tenax*	Secure	ⓘ[5]	
Cellulitic Tarpaper Lichen	*Lathagrium fuscovirens*	Undetermined	∃[3]	
Jelly Flakes Lichen	*Lathagrium undulatum*	Sensitive		
Moonlit Vinyl Lichen	*Leptogium burnetiae*	Undetermined	∃[3]	
Concentric Vinyl Lichen	*Leptogium pseudofurfuraceum*	Undetermined		
Midnight Vinyl Lichen	*Leptogium saturninum*	Secure		
Pincushion Tarpaper Lichen	*Rostania ceranisca*	Sensitive		
Rose-petaled Vinyl Lichen	*Scytinium gelatinosum*	Undetermined		
Forty-five Vinyl Lichen	*Scytinium intermedium*	Undetermined	∃[6]	
Tattered Vinyl Lichen	*Scytinium lichenoides*	Secure		
Appressed Vinyl Lichen	*Scytinium subtile*	Undetermined		
Birdnest Vinyl Lichen	*Scytinium tenuissimum*	Sensitive		
Peltigerales – Lobariaceae				Peltigerid lichens – Lung lichens
Gray Lungwort Lichen	*Lobaria hallii*	Presence Expected		
Kurokawae Lungwort Lichen	*Lobaria kurokawae*	Presence Expected		
Cabbage Lung Lichen	*Lobaria linita*	Sensitive		

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Beringian Lungwort Lichen	*Lobaria pseudopulmonaria*	Undetermined		
Smoker's Lung Lichen	*Lobaria retigera*	Undetermined	∃[2]	
Textured Lungwort Lichen	*Lobaria scrobiculata*	Undetermined		
Arctic Moon Lichen	*Sticta arctica*	Sensitive	∃[2]	
Peltigerales – Nephromataceae				Peltigerid lichens – Kidney lichens
Arctic Greenlight Lichen	*Nephroma arcticum*	Secure		
Cat Paw Lichen	*Nephroma bellum*	Undetermined	∃[3]	
Purple Paw Lichen	*Nephroma expallidum*	Secure		
Fringed Kidney Lichen	*Nephroma helveticum*	Sensitive		
Peppered Kidney Lichen	*Nephroma isidiosum*	Presence Expected		
Powdery Kidney Lichen	*Nephroma parile*	Secure		
Pimpled Kidney Lichen	*Nephroma resupinatum*	Undetermined	∃[6]	
Peltigerales – Pannariaceae				Peltigerid lichens – Shingle lichens
Moss Shingle Lichen	*Fuscopannaria praetermissa*	Secure		
Mealy-rimmed Shingle Lichen	*Pannaria conoplea*	Sensitive		
High Arctic Shingle Lichen	*Pannaria hookeri*	Presence Expected	∃[6]	
Coral Shingle Lichen	*Parmeliella corallinoides*	Undetermined		
Black-bordered Shingle Lichen	*Parmeliella triptophylla*	Undetermined		
Brown-gray Moss-shingle Lichen	*Protopannaria pezizoides*	Secure		
Moss Tarts Lichen	*Psoroma hypnorum*	Secure		
Arctic Shingle Lichen	*Santessoniella arctophila*	Presence Expected	∃[6]	
Peltigerales – Peltigeraceae				Peltigerid lichens – Pelt lichens
Silver-edged Freckle Pelt Lichen	*Peltigera aphthosa*	Secure		
Felt Pelt Lichen	*Peltigera canina*	Secure		
Chestnut Pelt Lichen	*Peltigera castanea*	Undetermined		
Tree Pelt Lichen	*Peltigera collina*	May Be At Risk	∃[6]	
Temporary Pelt Lichen	*Peltigera didactyla*	Sensitive		
Concentric Pelt Lichen	*Peltigera elisabethae*	Undetermined		
Peppered Pelt	*Peltigera evansiana*	Presence Expected		
Sheepish Pelt Lichen	*Peltigera extenuata*	Presence Expected		
Fripp's Pelt Lichen	*Peltigera frippii*	Undetermined	∃[6]	
Flat-fruited Pelt Lichen	*Peltigera horizontalis*	Undetermined	∃[6]	
Mothwing Pelt Lichen	*Peltigera lepidophora*	Secure		
Ruffled Freckle Pelt Lichen	*Peltigera leucophlebia*	Secure		
Apple Pelt Lichen	*Peltigera malacea*	Secure		
Diamond Pelt Lichen	*Peltigera membranacea*	Undetermined	∃[3]	
Black-saddle Pelt Lichen	*Peltigera neckeri*	Sensitive		
Undulating Pelt Lichen	*Peltigera neopolydactyla*	Undetermined		
Pioneer Pelt Lichen	*Peltigera polydactylon*	Undetermined		
Pale-bellied Pelt Lichen	*Peltigera ponojensis*	Undetermined		
Born-again Pelt Lichen	*Peltigera praetextata*	Sensitive	ⓘ[9]	

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Sponge Pelt Lichen	*Peltigera retifoveata*	Sensitive		
Black-bellied Pelt Lichen	*Peltigera rufescens*	Secure		
Greater Toad Pelt Lichen	*Peltigera scabrosa*	Secure		
Fan Pelt Lichen	*Peltigera venosa*	Secure		
Lesser Tundra Owl Lichen	*Solorina bispora*	Secure		
Orange Chocolate Chip Lichen	*Solorina crocea*	Secure		
Greater Tundra Owl Lichen	*Solorina octospora*	Undetermined	∃[6]	
Woodland Owl Lichen	*Solorina saccata*	Secure		
Blinking Owl Lichen	*Solorina spongiosa*	Sensitive		
Peltigerales – Placynthiaceae				Peltigerid lichens – Ink lichens
Lilliput Ink Lichen	*Placynthium asperellum*	Sensitive		
Common Ink Lichen	*Placynthium nigrum*	Undetermined		
Peppered Brunette Lichen	*Vestergrenopsis isidiata*	May Be At Risk		
Pertusariales – Icmadophilaceae				Pertusarid lichens – Finger lichens
Water Fingers	*Siphula ceratites*	Undetermined	ⓘ[2]	
Tundra Whiteworm Lichen	*Thamnolia subuliformis*	Secure	∃[6]	
Universal Whiteworm Lichen	*Thamnolia vermicularis*	Secure		
Umbilicariales – Umbilicariaceae				Umbilicarid lichens – Rocktripe lichens
Origami Rocktripe Lichen	*Lasallia caroliniana*	May Be At Risk		
Brown-bellied Toadskin Lichen	*Lasallia papulosa*	Sensitive		
Black-bellied Toadskin Lichen	*Lasallia pensylvanica*	Secure		
Frosted Rocktripe Lichen	*Umbilicaria americana*	Undetermined		
Starred Rocktripe Lichen	*Umbilicaria angulata*	Sensitive	∃[5]	
Arctic Rocktripe Lichen	*Umbilicaria arctica*	Sensitive		
Questionable Rocktripe Lichen	*Umbilicaria cinereorufescens*	Undetermined		

Gray Reindeer Lichen and Madame Pixie Lichen Photo Credit: J Hollett

Hammered Shield Lichen Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Fringed Rocktripe Lichen	*Umbilicaria cylindrica*	Secure		
Netted Rocktripe Lichen	*Umbilicaria decussata*	Sensitive		
Peppered Rocktripe Lichen	*Umbilicaria deusta*	Secure		
Havaas's Rocktripe Lichen	*Umbilicaria havaasii*	Sensitive		
Granulating Rocktripe Lichen	*Umbilicaria hirsuta*	May Be At Risk		
Blistered Rocktripe Lichen	*Umbilicaria hyperborea*	Secure		
Textured Rocktripe Lichen	*Umbilicaria leiocarpa*	Presence Expected		
Puckered Rocktripe Lichen	*Umbilicaria lyngei*	Undetermined	∃[3]	
Monumental Rocktripe Lichen	*Umbilicaria mammulata*	Undetermined		
Plated Rocktripe Lichen	*Umbilicaria mühlenbergii*	Secure		
Emery Rocktripe Lichen	*Umbilicaria phaea*	Sensitive		
Polar Rocktripe Lichen	*Umbilicaria polaris*	Undetermined	∃[3]	
Petaled Rocktripe Lichen	*Umbilicaria polyphylla*	Sensitive		
Ballpoint Rocktripe Lichen	*Umbilicaria polyrhiza*	Undetermined		
Greater Salted Rocktripe Lichen	*Umbilicaria proboscidea*	Secure		
Sandpaper Rocktripe Lichen	*Umbilicaria rigida*	Secure		
Perforated Rocktripe Lichen	*Umbilicaria torrefacta*	Secure		
Grizzled Rocktripe Lichen	*Umbilicaria vellea*	Secure		
Blushing Rocktripe Lichen	*Umbilicaria virginis*	Sensitive		

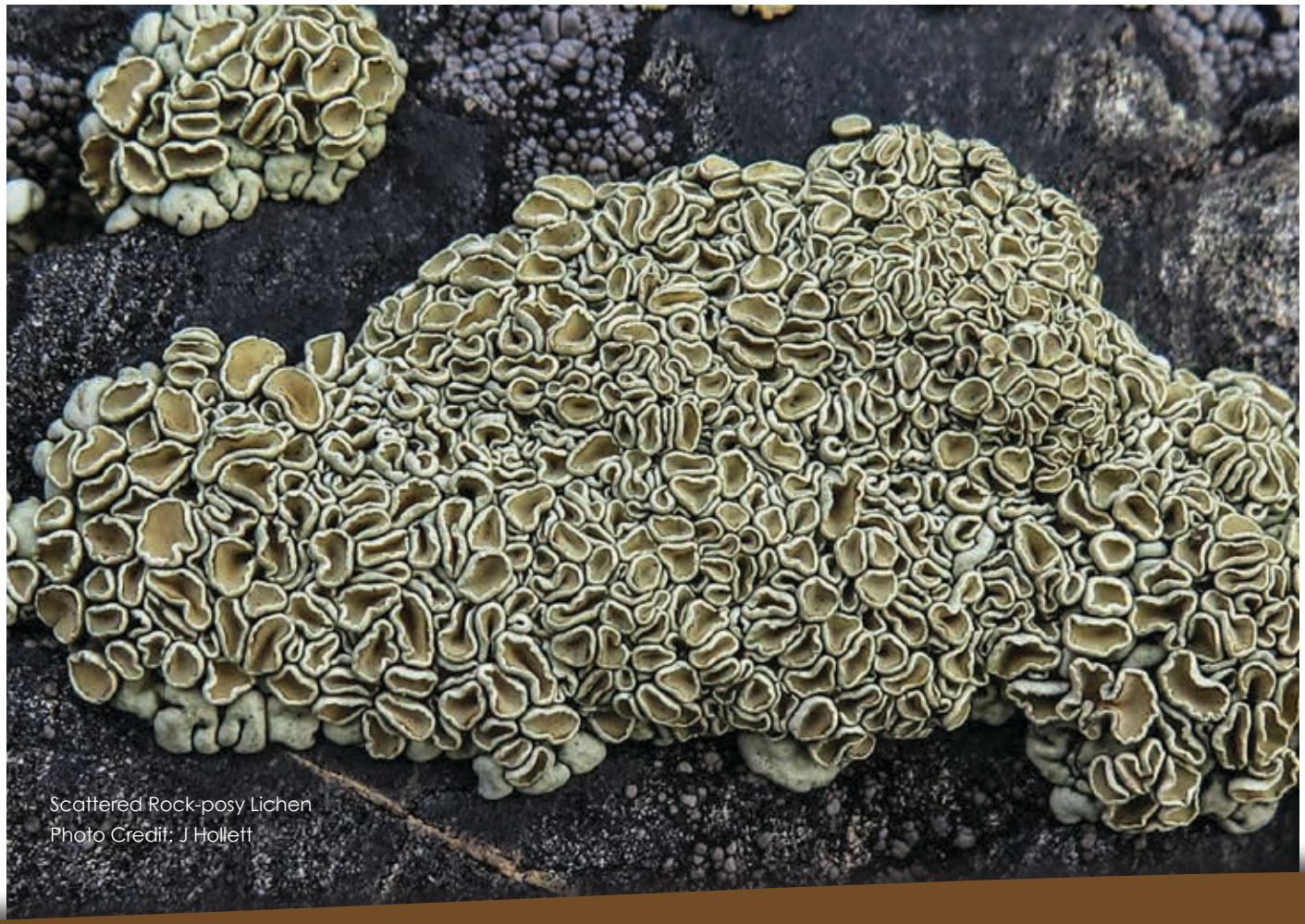
Colorado Rockfrog Lichen
Photo Credit: J Hollett

Common Name	Scientific Species Name	Rank	Reason for Change[a]	Global Conservation Concern[b]
Verrucariales – Verrucariaceae				Verrucarid lichens – Tar lichens
Quilted Stippleback Lichen	*Dermatocarpon intestiniforme*	Sensitive		
Brookside Stippleback Lichen	*Dermatocarpon luridum*	Undetermined		
Grounded Stippleback Lichen	*Dermatocarpon miniatum*	Undetermined		
Cold-Water Stippleback Lichen	*Dermatocarpon rivulorum*	Presence Expected		
Soil Stipplescale Lichen	*Endocarpon pusillum*	Presence Expected		

[a] Describes reasons for a change in status rank between 2011 and 2016. ↗: Increasing Risk, ↘: Decreasing Risk, ∃: Error correction, #: Species new to the NWT, T: Taxonomic change, ⓘ: Information added, A: Changed due to detailed assessment by COSEWIC since 2011. See Data Sources and Methods for more details.

[b] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

[1] Changed from At Risk
[2] Changed from May Be at Risk
[3] Changed from Sensitive
[4] Changed from Secure
[5] Changed from Undetermined
[6] Changed from Not Assessed
[7] Changed from Alien
[8] Changed from Extirpated
[9] Changed from Vagrant
[10] Changed from Presence Expected



Scattered Rock-posy Lichen
Photo Credit: J Hollett

6.31 Selected Mushrooms

Fly Amanita
Photo Credit: J Hollett

Basidiomycete fungi (fungi bearing spores on basidia) are extremely important ecologically and economically. They are not a plant, but like plants they form cell walls. These walls are composed of chitin rather than cellulose as in plants.

To better understand the role of basidiomycete fungi in our ecosystems, it helps to understand how fungi in general obtain their carbohydrates and other nutrients. They can form pathogenic associations with live organisms causing harm to their hosts, or as saprophytes they decompose dead organic matter, or they can develop mutually beneficial associations with live organisms.

Basidiomycete fungi spend a large portion of their life cycle in the vegetative state and only when conditions are appropriate do they form reproductive fruiting bodies. The term "mushroom" is used principally for these fleshy fruiting bodies where spores are produced on gills. The mushroom is the visible and usually above-ground part of the fungi. It is the most noticeable portion of the extensive vegetative underground mycelium.

Basidiomycete fungi can form a mutually beneficial relationship with plant roots. In this mycorrhizal association the mycelium colonizes the roots of trees, shrubs and other plants, explores the soil in search of nutrients and water and then transports them to the roots where they are exchanged for sugars and carbohydrates that the plant has synthesized in photosynthesis.

Fruiting bodies (mushrooms) begin when two sexually compatible mycelia fuse and form a dikaryon that is a mycelium containing two nuclei, one from each of the mycelium. They continue to develop until they form a hymenium (fertile region) where spores are formed. Fruiting bodies can be colourful or drab, large or small, ephemeral or persistent, slimy or dry, fragrant or foul smelling, velvety or smooth and come in a variety of shapes and forms. They are found in diverse habitats.

As the fruiting body matures, the hymenium is formed and the basidia develop producing spores. When the spores are mature they are released from the fruiting body through various mechanisms and are transported to new habitats. Spore dissemination is as varied as there are fruiting bodies.

With the appropriate moisture, temperature and suitable substrate, spores germinate and form filaments called hyphae (singular is hyphum). The hyphae continue to multiply and branch forming the mycelia (plurial for mycelium). The fungus exists in this vegetative state sometimes for many years.

Amanita mushrooms

The genus Amanita is a gilled mushroom (order Agaricales) member of the family Amanitaceae. Most amanitas form mycorrhizal associations with deciduous or conifer trees or shrubs. Fruiting bodies are typical mushrooms that are fleshy, have dry often colourful caps, pale gills on which the hymenium and white spores form a cup-like structure (volva) or rings at the base of the stem (stipe). Often they also have a ring towards the apex of the stipe. Frequently the caps are dotted with distinctive pale warts or patches. They can be solitary or gregarious with many fruiting bodies grouped together.

Amanitas begin their sexual stage by forming egg-like structures that when cut longitudinally expose miniature mushrooms. The flesh of some Amanitas change colour when bruised, and some may have distinctive odours. Many deadly mushrooms belong to this genus, so while some are edible and delicious, novice mushroom pickers should consult someone with more expertise, especially someone with extensive mushroom identification training, before eating them.

Fly amanita (*Amanita muscaria*) is one of the most striking mushrooms in our forests. The distribution of this iconic species is still unclear in the NWT, and may be present further north than expected. This amanita is large white-gilled, white-spotted, usually red, but many sub-species exist showing different shades from brown, cream to yellow. The species forms a mycorrhizal association mostly with birch and pine.

The birds nest fungi

As their name implies, the bird's nest fungi form fruiting bodies that resemble tiny bird's nests filled with eggs. They belong in the family Nidulariaceae that contains five genera, only two so far are known in the NWT. The bird's nest fungi are saprophytes, global in distribution and found in moist shaded locations growing on dead wood, twigs, soil and dung.

They are gregarious, found in groups where some "nests" or peridia (singular is peridium) are immature and are capped with a thin membrane. Some peridia are more mature and are filled with lentil shaped "eggs" or peridioles. When fully mature the peridia are empty indicating that their peridioles have already been disseminated. Empty "nests" persist in the environment because they are tough and leathery, decaying slowly, so they are frequently found throughout the year.

Once fruiting bodies begin to develop, the peridioles are formed in which the hymenium (fertile region) develops and matures its basidia, where the spores are enclosed. Once the spores are mature, they are released from the basidia and remain loose resting among hyphae inside the "eggs" or peridioles.

The periodioles, with their mature spores, rest inside the "nest" or peridium until large raindrops eject them. Some peridioles have an attached thin strand that remains uncoiled when ejected, but when it encounters an obstacle like a twig or branch the cord is rapidly uncoiled, wraps itself and the peridiole around the obstacle, and swings back and forth and eventually becomes entangled in the substrate. Some peridioles are eaten by foraging animals and are again carried off to different habitats. Eventually the peridioles decompose, releasing the spores, and if conditions are suitable, they germinate and resume the cycle.

Birds Nest Mushroom Photo Credit: K Latour

Future work

Biodiversity studies and the occurrence of macrofungi in an ecosystem are directly correlated to the effort one puts into searching, collecting and documenting species.

Mushroom specimens should be documented, dried and deposited into designated herbaria. A list of *Amanita* and Nidulariaceae in the NWT was completed by examining online databases. But many herbaria have no online tools and may have significant specimens from the NWT. These herbaria can be visited and their records should be examined. Then these species should be added to the official list. With new genetic tools, the taxonomy of the macrofungi is changing. Herbarium specimens from the NWT should be examined genetically to confirm what species occur in the NWT.

Common taxa and those with broad habitat ranges can be photographed and published in a future field guide on our macrofungi.

Sharmin Gamiet
Mushroom Specialist
Abbotsford, BC

It is difficult to state with any conviction what the status of any of these fungi actually is with such limited records. The two groups included below were selected across Canada because they are better known than other groups of basidiomycete fungi. However, nobody has seriously done a systematic survey in the NWT so that the list is most probably incomplete.

Dr. Scott A. Redhead
National Mycological Herbarium
Agriculture and Agri-Food Canada
Ottawa, ON

List 31. **Selected Mushrooms**

There are six species of Amanita mushrooms and two species of bird's nest mushrooms confirmed present in the NWT. None are of global conservation concern. Species are listed alphabetically according to the scientific *Order* they belong to, then by *Family*, then by scientific species name. Taxonomy follows Kirk and Cooper (2015).

Fly Amanita Photo Credit: G Hachey

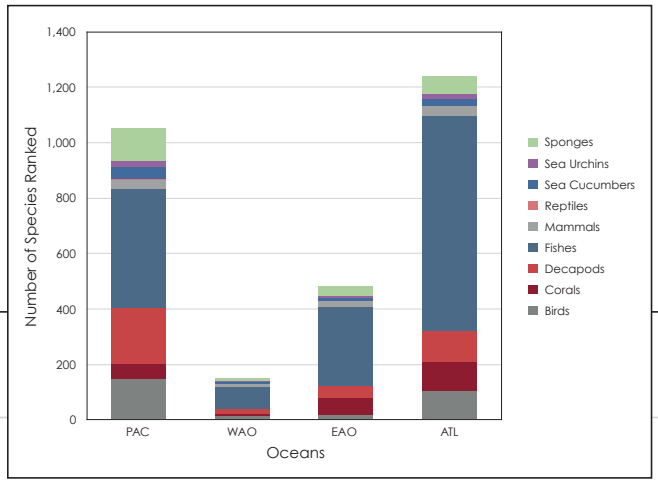
Common Name	Scientific Species Name	Rank	Global Conservation Concern[a]
Basidiomycota – Agaricomycetes			**Basidiomycete fungi – Mushrooms**
Agaricales – Amanitaceae			Gilled mushrooms – Amanita mushrooms
Orange-brown Ringless Amanita	*Amanita fulva*	Undetermined	
Greenland Ringless Amanita	*Amanita groenlandica*	Undetermined	
Fly Amanita	*Amanita muscaria*	Undetermined	
Snow Ringless Amanita	*Amanita nivalis*	Undetermined	
Panther Amanita	*Amanita pantherina*	Undetermined	
Grey Amanita	*Amanita spreta*	Undetermined	
Agaricales – Nidulariaceae			Gilled mushrooms – Bird's nest mushrooms
White-egg Bird's Nest	*Crucibulum laeve*	Undetermined	
Fluted Bird's Nest	*Cyathus striatus*	Undetermined	

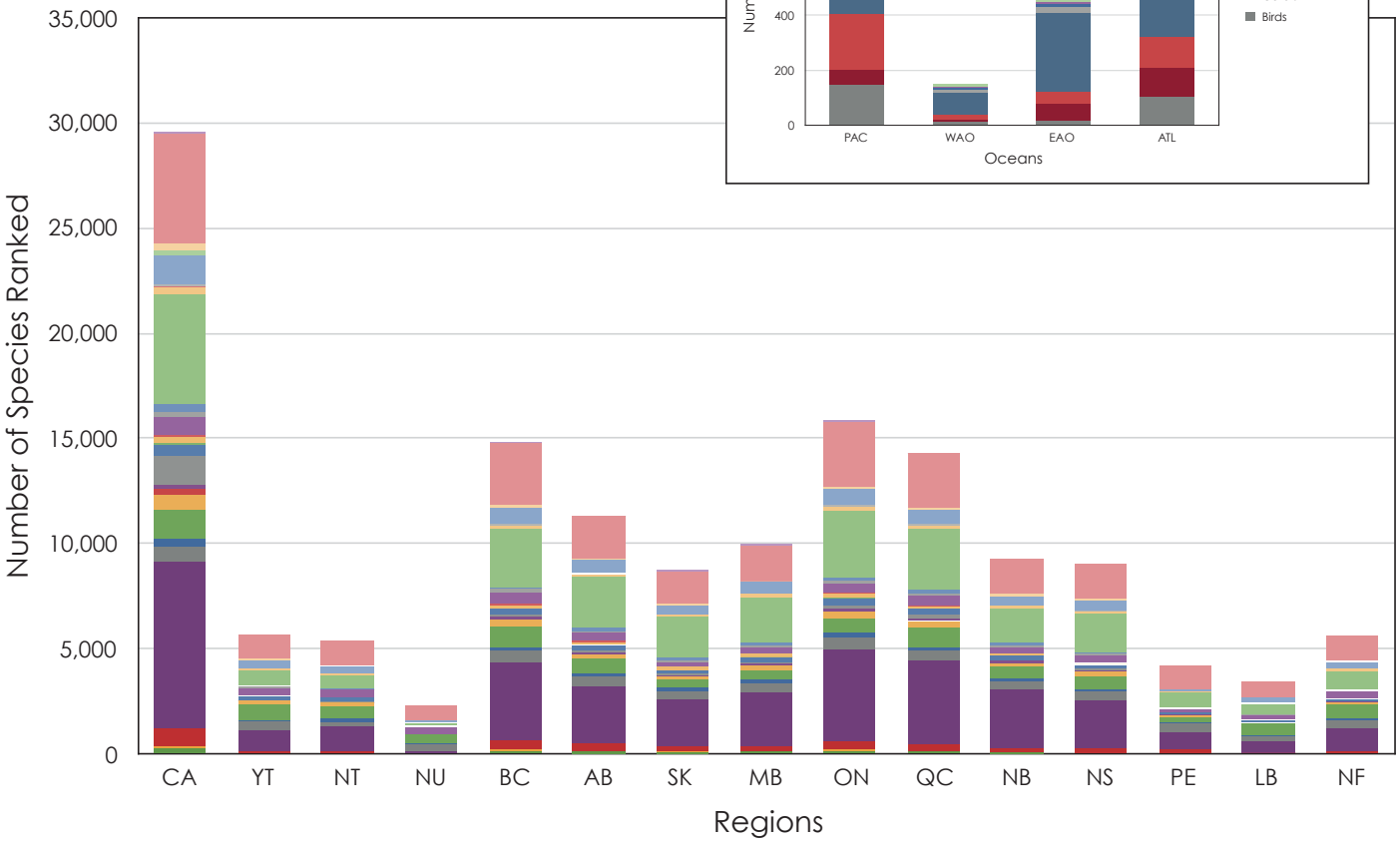
[a] For your convenience, the status derived from other processes than the one presented in this report is described in these columns. Rank of a species in the world as designed by NatureServe. GH: Possibly Extinct, G1: Critically Imperilled, G2: Imperilled, G3: Vulnerable. Definitions and more information can be found at www.natureserve.org.

Panther Amanita
Photo Credit: S Trudell

7 Challenges and Opportunities – What are the next steps?

As of 2016, the general status of about 17% of all species expected to be present in the NWT have been ranked. With this report, we continue to rank the general status of more groups of lesser-known species: the insects. Also more marine species have been ranked than ever before.





- Yellowjacket wasps
- Vascular plants
- Stoneflies
- Sponges
- Spiders
- Selected mushrooms
- Scorpionflies
- Reptiles
- Non-marine molluscs
- Moths and butterflies
- Mayflies
- Mammals
- Macrolichens
- Lacewings
- Grasshoppers
- Freshwater bivalves
- Flower flies
- Fishes
- Dragonflies
- Decapods
- Caddisflies
- Bryophytes
- Biting Flies
- Birds
- Beetles
- Bees
- Bee flies
- Ants
- Amphibians

The number of species ranked in Canada for the Wild Species 2015 report.

CA, Canada; YT, Yukon; NT: Northwest Territories; NU: Nunavut; BC, British Columbia, AB, Alberta, SK, Saskatchewan, MB, Manitoba; ON, Ontario; QC, Québec; NB, New Brunswick, NS, Nova Scotia; PE, Prince Edwards Island; LB: Labrador; NF: Newfoundland; PAC, Pacific Ocean, WAO, Western Arctic Ocean; EAO, Eastern Arctic Ocean; ATL, Atlantic. (CESCC 2016)

Cooperating

The General Status Ranking program works in cooperation with all other jurisdictions in Canada. Each NWT rank developed for 2016, along with the ranks from other provinces and territories were assembled to draft Canada-wide ranks for a total of 29,859 species in Canada. To find more information, ranks for other jurisdictions and Canada-wide ranks link to www.wildspecies.ca.

Coordinating the ranking of the General Status for species across Canada while updating the process to follow the more robust NatureServe protocol was a daunting and time consuming task, but it resulted in an extraordinary database that can be used as baseline for future tracking of changes in biodiversity in the NWT and across Canada.

The National General Status Working Group, of which the NWT is a member, coordinates the work following a schedule of priorities for ranking that is based on the availability of information and expertise across Canada and the world. We are already collecting more data on species and will be working to rank more insect species and more marine species in the next report:

All the species ranked in the present report will be reviewed and their rank may be modified in 2020 for the *NWT Species 2021-2025* report.

Data and information retrieving

We continue to bring back copies of the data and information on NWT specimens stored in institutions in Canada or outside the country. Results from past studies and surveys are essential to compare with our current knowledge to enable us to track changes in northern ecosystems. All databases will be stored in the Wildlife Management Information System (WMIS).

Sharing resources and data with development agencies and industry helps to complement current monitoring programs and enhance opportunities.

We will continue to enhance our efforts to facilitate the input and sharing of traditional and local knowledge of the land, while respecting the need to preserve that knowledge for future generations. **Future opportunities for both visiting experts and northerners exist; both can learn by working together and by sharing experiences on the land to gain insights on all NWT species**.

Evaluating

The evaluation system described in this report must remain consistent between years, but improvements should be possible. In 2011, we adopted a more robust protocol to rank species thanks to the help of all staff at NatureServe Canada and other Conservation Data Centres across Canada and the United States.

Your help

All residents are responsible for conserving and preserving all NWT species for future generations. The NWT is rich in biodiversity. Large numbers of species thrive here, and northerners have a great depth of knowledge of the land and enthusiasm for all species.

Your opinion on the ranks published in these pages will be greatly appreciated. We invite you to share your observations and your knowledge by participating in any of the monitoring programs available in the NWT.

Greenland Ringless Amanita Photo Credit: S Trudell

Raven Photo Credit: D Johnson

8 Further Your Knowledge – How to learn more?

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Harris Sparrow Photo Credit: J McKay

Peary Caribou Photo Credit: J Nagy

9 Acknowledgments – Who participated in this program?

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Participating agencies

All species ranks were reviewed by the Working Group on General Status of NWT Species composed of all agencies with wildlife management responsibilities in the NWT:

Coordination:
Department of Environment and Natural Resources, Government of the Northwest Territories

In Cooperation with:

- Environment Canada and Climate Change, Government of Canada
- Fisheries and Oceans Canada, Government of Canada,
- Fisheries Joint Management Committee
- Gwich'in Renewable Resources Board
- Sahtú Renewable Resources Board
- Wek'èezhìi Renewable Resource Board
- Wildlife Management Advisory Council (NWT)

Participating individuals

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NWT Species Monitoring Infobase – Data and Information Updates (2011-2016): Suzanne Carrière.

Muskox
Photo Credit: R Decker

Monitoring Information – How to get involved?

Contact your wildlife management board

Wildlife Management Advisory Council (NWT)
jointsecretariat.ca/co-management-system/wildlife-management-advisory-council-northwest-territories

Gwich'in Renewable Resources Board
www.grrb.ca

ʔehdzo Got'ı̨nę Gots'ę́ Nákedı
Sahtú Renewable Resources Board
www.srrb.nt.ca

Wek'èezhii Renewable Resources Board
www.wrrb.ca

Fisheries Joint Management Committee
www.fjmc.ca

Participate in a monitoring program

To record locations and details on any species
iNaturalist.ca

To contact and join us on Facebook
NWT SPECIES Group

To report a spill of oil, chemicals or other hazardous materials
NWT 24-hour Spill Report Line
(867) 920-8130 (Collect calls accepted)

Follow us on FaceBook **NWT Species Group**

To obtain a copy of the **NWT Species Monitoring Infobase** or to obtain more information about the General Status Ranking Program

Visit:
www.nwtspeciesatrisk.ca/generalstatusprogram

Contact:
wildlifeobs@gov.nt.ca

Terrestrial mammals

To report mammal observations go to your nearest Environment and Natural Resources Office or contact us at wildlifeobs@gov.nt.ca

To report a poacher
(866) POA CHER

Birds

To record your bird observations
NWT Bird Checklist Survey
NWTChecklist@ec.gc.ca
(867) 669-4734
www.ec.gc.ca/reom-mbs/
ebird.org

To report a banded bird
BBO_CWS@ec.gc.ca
(800) 327 BAND (2263)

Fishes, marine mammals, marine invertabrates

To get information on studies
Department of Fisheries & Oceans
Yellowknife (867) 669 4900
Inuvik (867) 777 7500
Hay River (867) 874 5570
www.dfo-mpo.gc.ca

To report a fishing violation

(800) 222 TIPS (8477)

Amphibians and reptile

To report observations on amphibians and snakes
Frogwatch
WildlifeOBS@gov.nt.ca
www.naturewatch.ca/frogwatch/
Pamphlets available at ENR Offices

Molluscs

To help identify snails and such
www.mollus.ca/
To learn about mussels
nature.ca/en/research-collections/research-projects/freshwater-mussels-marine-mussels-canada-studies-taxonomy-dis

Insects and spiders

To report insect observations or contact an entomologist
NWTBUGS@gov.nt.ca

NWT keys available for Butterflies of the Northwest Territories
www.enr.gov.nt.ca/sites/default/files/documents/butterfly_book_2013.pdf

Grasshoppers of the Nothwest Territories
www.enr.gov.nt.ca/programs/biodiversity/grasshoppers-nwt

Tiger beetles of the Nothwest Territories
www.enr.gov.nt.ca/sites/default/files/reports/atlas_key_to_tiger_beetles.pdf

Dragonflies of the Nothwest Territories
www.enr.gov.nt.ca/sites/default/files/reports/atlas_dragonflies.pdf

To report butterfly observations anywhere in Canada
eButterfly
www.e-butterfly.org

To help with the identification of insects and spiders using good quality photographs
bugguide.net

To learn more about some insect groups
Lacewing Digital Library
lacewing.tamu.edu
Flower Fly resources
www.canacoll.org/Diptera/Staff/Skevington/Syrphidae/Syrphidae_home.htm
Mayfly Central
www.entm.purdue.edu/mayfly/na-species-list.php
Permanent Committee of the International Conferences on Ephemeroptera
www.ephemeroptera-galactica.com
Plecoptera Species File
plecoptera.speciesfile.org/HomePage/Plecoptera/HomePage.aspx
Butterflies and Moths of North America
www.butterfliesandmoths.org
North American Moth Photographers
mothphotographersgroup.msstate.edu

Vascular plants

To identify vascular plants in the NWT
Consult Porsild and Cody. 1980. Vascular plants of continental Northwest Territories. National Museum of Natural Sciences. Online.
www.biodiversitylibrary.org/item/139562#page/9/mode/1up
Consult Aiken et al. 2011 Flora of the Canadian Arctic Archipelago Online
nature.ca/aaflora/data/aaintro/caaintr2.htm

To report a forest fire
(877) NWT FIRE

Mosses, liverworts, lichens, mushrooms

Western Canada Bryophyte and lichen Interest Group
www.wcblig.com/herbaria.html
Lichens of western North America
www.waysofenlichenment.net/

Red Fox
Photo Credit: S Fochuk

Prepared by the Working Group on General Status of NWT Species.