Table 1. Summary of 2017 COSSARO Evaluation Results

SPECIES *(Common Name, Scientific Name)*	*CLASSIFICATION* *(UNDER ESA)*	*NEW COSSARO* *EVALUATED STATUS*
American Hart's Tongue Fern *Asplenium scolopendrium var. americanum*	*Special Concern*	*Special Concern*
Channel Darter *Percina copelandi*	*Threatened*	*Special Concern*
Evening Grosbeak *Coccothraustes vespertinus*	*N/A*	*Special Concern*
Mapleleaf *Quadrula quadrula*	*Threatened*	*Special Concern*
Prothonotary Warbler *Protonotaria citrea*	*Endangered*	*Endangered*
Pygmy Whitefish (Great Lakes - Upper St. Lawrence populations) *Prosopium coulterii*	*N/A*	*Not at Risk*
Pygmy Whitefish (Saskatchewan-Nelson Rivers populations) *Prosopium coulterii*	*N/A*	*Data Deficient*
Transverse Lady Beetle *Coccinella transversoguttata*	*N/A*	*Endangered*
Western Painted Turtle *Chrysemys picta bellii*	*N/A*	*Not at Risk*
Blanding's Turtle *Emydoidea blandingii*	*Threatened*	*Threatened*
Butternut *Juglans cinerea*	*Endangered*	*Endangered*
Eastern Banded Tigersnail *Anguispira kochi kochi*	*N/A*	*Endangered*
Golden-eye Lichen (Great Lakes population) *Teloschistes chrysophthalmus*	*N/A*	*Endangered*
Harris's Sparrow *Zonotrichia querula*	*N/A*	*Data Deficient*
Lake Sturgeon (Saskatchewan-Nelson River populations) *Acipenser fulvescens*	*Threatened*	*Threatened*
Lake Sturgeon (Southern Hudson Bay-James Bay populations) *Acipenser fulvescens*	*Special Concern*	*Special Concern*

SPECIES *(Common Name, Scientific Name)*	*CLASSIFICATION* *(UNDER ESA)*	*NEW COSSARO* *EVALUATED STATUS*
Lake Sturgeon (Great Lakes-Upper St. Lawrence populations) *Acipenser fulvescens*	*Threatened*	*Endangered*
Caribou (Eastern Migratory population) *Rangifer tarandus*	*N/A*	*Special Concern*
Rusty Blackbird *Euphagus carolinus*	*Not at Risk*	*Special Concern*
Shortnose Cisco *Coregonus reighardi*	*Endangered*	*Endangered*
Spotted Wintergreen *Chimaphila maculata*	*Endangered*	*Threatened*
Eastern Pondmussel *Ligumia nasuta*	*Endangered*	*Special Concern*
Deepwater Sculpin (Great Lakes – Upper St. Lawrence populations) *Myoxocephalus thompsonii*	*Not at Risk*	*Not at Risk*
Deepwater Sculpin (Southern Hudson Bay – James Bay populations) *Myoxocephalus thompsonii*	*Not at Risk*	*Data Deficient*
Deepwater Sculpin (Saskatchewan – Nelson River populations) *Myoxocephalus thompsonii*	*Not at Risk*	*Not at Risk*

NOTE: N/A means the species has not been formerly assigned a status.

COSSARO also adopted the following name changes:

- Hart's-tongue Fern (Asplenium scolopendrium) to American Hart's Tongue Fern (*Asplenium scolopendrium var. americanum)*
- Mapleleaf Mussel to Mapleleaf
- Lake Sturgeon (Northwestern Ontario population) to Lake Sturgeon (Saskatchewan - Nelson River populations)
- Lake Sturgeon (Great Lakes – Upper St. Lawrence River population) to Lake Sturgeon (Great Lakes – Upper St. Lawrence populations)
- Lake Sturgeon (Southern Hudson Bay – James Bay population) to Lake Sturgeon (Southern Hudson Bay – James Bay populations)
- Lilliput (*Taxolasma parvum*) to Lilliput (*Toxolasma parvum*)

SPECIES (Common Name, *Scientific Name)*	**Summary of Species Assessments**
American Hart's-tongue Fern *Asplenium scolopendrium var. americanum*	American Hart's-tongue Fern (*Asplenium scolopendrium*) is a perennial, evergreen fern that grows as a cluster of strap-shaped fronds (leaves). The variety that grows in North America is *americanum,* referred to as American Hart's-tongue Fern (*Asplenium scolopendrium* var. *americanum*). The Canadian range of American Hart's-tongue Fern is limited to southern Ontario, where it typically grows on moss-covered limestone and dolostone under deciduous trees. Its distribution is primarily limited to shady and moist microclimates with relatively high humidity on the Niagara Escarpment. There is a total of ~109 subpopulations in Ontario, which collectively harbour up to ~110,000 individuals. Ontario is home to ~80% of all American Hart's-tongue Fern subpopulations and ~ 94% of individuals, and therefore has a high conservation responsibility for this species. In Ontario, habitat loss and modification through logging and quarrying provide the greatest threats to American Hart's-tongue Fern. Rescue from adjacent states in the USA is unlikely because of the very small population sizes and the considerable distance that would need to be traversed; furthermore, American Hart's-tongue Fern is threatened in the USA. Although American Hart's-tongue Fern does not meet any criterion for designation as either endangered or threatened owing to the relatively high numbers of individuals and subpopulations in Ontario, it is restricted to a small geographic area and has very specific microhabitat requirements; in addition, some subpopulations are very small. Most of the global population occurs in Ontario and on-going threats, such as logging and quarrying, may cause American Hart's-tongue Fern to become threatened if habitat destruction/modification continues. American Hart's-tongue Fern has therefore been designated Special Concern.
Channel Darter *Percina copelandi*	Channel Darter is a small bottom-feeding fish in the darter subfamily. They are found in both rivers and lakes, typically in areas with moderate water flow and coarse substrate. They feed on invertebrates. The species occurs in three regions of Ontario: the Lake St. Clair-Lake Erie drainage; rivers in the Bay of Quinte drainage; and the Ottawa River and Little Rideau Creek in eastern Ontario. Population size data is not available, but this species is known to have been extirpated from central and eastern Lake Erie and is apparently declining in western Lake Erie. This decline is attributed to the invasive Round Goby, and household and agricultural pollution. The Round Goby has also established in the Trent River, and may spread to other Channel Darter habitat in eastern Ontario.

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Evening Grosbeak *Coccothraustes vespertinus*	The Evening Grosbeak (*Coccothraustes vespertinus*) is a colourful yellow and black songbird with a heavy conical bill and is in the Fringillidae family. It nests in conifer-dominated forests across northern Ontario, as far south as southern Georgian Bay, and is a common winter bird at feeders. Its abundance varies substantially in direct response to Spruce Budworm cycles. Evening Grosbeak is a relatively recent addition to the avifauna of Ontario from western Canada in the later 1880s and early 1900s, and now meets the criteria for a native species. It is now distributed right across southern Canada as far east as Newfoundland. Potential threats include window strikes, habitat loss from forestry, climate change impacts on habitat, road salt, collisions with vehicles, and budworm control measures. Breeding Bird Survey data indicate a significant negative population decrease in Canada of -5.2% a year from 1970 - 2012, representing a 90% decline over 42 years, and a significant decline of 5% per year, or 42% cumulatively, for the 10-year period from 2004 - 2014. Breeding Bird Atlas, Christmas Bird Count and Project FeederWatch data all support the conclusion that the Ontario population has declined significantly in recent decades. Based upon indices showing a significant population decline over the past 10 years, the Evening Grosbeak meets quantitative criteria for Threatened designation under Criterion A1; however, it is classified as Special Concern in Ontario due to potential for rescue and the species' close relationship between population levels and Spruce Budworm cycles which must be taken into account when evaluating population trends.
Mapleleaf *Quadrula quadrula*	The Mapleleaf is a distinctive freshwater mussel that occurs only in southwestern Ontario. The majority of the Mapleleaf population in Ontario is found in the Sydenham, Thames, and Grand River drainages, and it is also found in other creeks and rivers as well as in embayments of Lakes Erie and Ontario. It is probably extirpated from Lake St. Clair and the Detroit and Niagara Rivers. The Mapleleaf has broad habitat preferences and is found in many different substrates including gravel, sand, and mud. Its known glochidial host, the Channel Catfish, is common within its range, and other common fish hosts are suspected. Substantial survey effort over the past two decades has resulted in a population estimate of over 6 million mature individuals distributed in approximately 15 drainages. Although there are indications that this population is stable, there are several threats to this species that are predicted to cause future declines. These include agricultural and industrial pollution, habitat modification, direct competition by invasive species especially dreissenid (zebra) mussels, and dredging.

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	The Mapleleaf is assessed as Special Concern in Ontario. The change in status is a result of increased sampling effort that has led to newly discovered populations and larger population estimates, rather than a genuine increase in population size. Research has also indicated that gene flow is high among populations, and that there is a reasonable likelihood of rescue from large and stable populations in western Lake Erie.
Prothonotary Warbler *Protonotaria citrea*	The Prothonotary Warbler is a distinctive warbler which builds its nests in pre-existing tree cavities at a few sites along the shores of Lake Erie. They tend to occupy mature and semi-mature deciduous swamp forest and riparian floodplains (OMNR 2012). The species is at the most northern edge of its range in southwestern Ontario. Both sexes have yellow heads and breasts, olive-green backs, and azure blue wings and tails, but the males are more brightly coloured. There are estimated to be a very small population of about 28 mature individuals in Ontario. Its habitat quality is expected to continue to decline due to invasive plants and insects. This species is assessed as Endangered based on the current population size in Ontario, which is estimated to be less than 30 individuals.
Pygmy Whitefish *Prosopium coulterii*	Pygmy Whitefish is distributed across northern North America; however, they have a remarkable disjunct distribution, with isolated ranges likely colonized from three, separate glacial refugia. In Canada, the Pygmy Whitefish are divided into seven designatable units (DUs) by COSEWIC. Relatively little of the species range is in Ontario where only two of seven DUs are found (DU5: Great Lakes - Upper St. Lawrence populations and DU7: Saskatchewan-Nelson Rivers populations). The Pygmy Whitefish inhabits cold, deep, oligotrophic lakes usually at depths greater than 30 m, although they have been caught in shallower waters. Pygmy Whitefish are relatively short lived for whitefish (expected lifespan 3-10 years) and mature from 1-4 years of age. The preferred habitat of Pygmy Whitefish makes it difficult to catch in standard fish surveys, hence little is known about their demography or life history variation among lakes or DUs. Little information exists on specific threats for this species in Ontario, partly due to the isolated nature of parts of its range, especially in northern Ontario, and partly due to limited information on the species. No specific threats have been identified for this species in Ontario. Saskatchewan-Nelson Rivers populations (Northern Ontario - DU7) has not been systematically sampled (10% of 752 lakes with suitable habitat has been sampled by MNRF) thus it likely includes unsampled healthy populations based on the availability and quality of the habitat. Great Lakes – Upper St.

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	Lawrence populations (DU5) has been systematically sampled as part of Lake Superior fish assessment efforts, and there is no evidence for a significant decline in this DU. This report includes both designatable units (DUs). The Great Lakes-Upper St. Lawrence populations (DU5) are assessed as Not at Risk due to the lack of demonstrated population decline. Within Ontario, the Saskatchewan-Nelson Rivers populations (DU7) are assessed as Data Deficient due to their wide distribution and lack of data on other likely populations and possible threats.
Transverse Lady Beetle *Coccinella transversoguttata richardsoni*	The Transverse Lady Beetle (*Coccinella transversoguttata*) is a native species of lady beetle that is relatively easy to recognize by the distinct colouration and markings on the elytra (each elytron has a basal transverse spot, which extends medially to the elytral suture, along with an apical and medial spot). Once widespread and commonly encountered in Ontario, this species appears to have disappeared from the Ontario fauna, with no verified records since 1990. This decline is associated with the introduction of several invasive lady beetle species and a number of pathogenetic organisms that are thought to have contributed to the Transverse Lady Beetle's precipitous population decline. Recent records in Manitoba and Quebec suggest that small, but remote populations may still be present in Ontario. The Transverse Lady Beetle is assessed as Endangered by COSSARO based on the decrease in abundance during the late 1980s due to several possible factors including invasive species and pesticide exposure. The species is classified as Endangered by COSSARO in Ontario but as it is still relatively commonly encountered in western parts of Canada it is classified as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
Western Painted Turtle *Chrysemys picta bellii*	Western Painted Turtles are a subspecies of Painted Turtle distinguished by their alternating vertebral and pleural seams, poorly developed or absent mid-dorsal stripe, and large, dark, branching markings on the plastron. In Ontario, they range from the Manitoba border as far north as Musclow Lake in Woodland Caribou Provincial Park, eastwards along the north shore of Lake Superior, to the eastern-most record in the White River area. Population size specifically for Ontario is unknown, but widespread distribution suggests it is likely in the tens of thousands range for the portion of the subspecies' range from Alberta eastwards. Most of the threats for

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	the subspecies were assessed to have low impact in Ontario although combined, they amount to an overall medium threat level. There is currently no evidence of decline and the habitat trend is considered to be stable for Ontario. It has been assessed Not at Risk.
Blanding's Turtle *Emydoidea blandingii*	Blanding's Turtle is a medium sized turtle that is easily recognized by its high domed shell and bright yellow throat. It has the ability to close the front half of the plastron. Blanding's Turtle is a long-lived species with a late age of maturity compared to other turtles, of about 20 years. It occurs in a wide variety of wetland types and ranges across most of southern Ontario north to Sudbury and Sault Ste. Marie. Blanding's Turtles are more mobile than other turtles, often moving between several wetlands over the course of the active season. Females nest in open upland areas but wander many hundreds of metres from their resident wetlands. The Blanding's Turtle is subjected to a number of threats which have contributed to its decline including: 1) habitat loss, 2) road and railway mortality, 3) degradation of habitat by invasive plant species, 4) collection of animals for pet or medicine trade, and 5) nest predation by elevated populations of predators due to human activities. Wetland conversion has been substantial in the southern half of the species range in Ontario with a documented loss of 60%. In southwestern Ontario, it is inferred that the Blanding's Turtle population has declined by a similar degree. Recent population declines have been documented in southwestern Ontario, likely exacerbated by the continued spread of the invasive European Common Reed. Habitat loss has been considerably lower in the northern portion of the species range on the Canadian Shield and the overall population decline has been lower there. Blanding's Turtle was assessed as Threatened by COSSARO due to the inferred rate of population decline over three generations. Federally, COSEWIC recently reclassified the Blanding's Turtle as Endangered, based on the inferred population decline of 60% in line with the wetland loss. However due to the lower rates of wetland loss and threats in the northern portion of its range, the amount of overall wetland loss in the province is more likely in the range of 30 to 50%. Blanding's Turtle populations in other provinces (Quebec, Nova Scotia) are much smaller and at a higher risk of extinction than in Ontario.
Butternut *Juglans cinerea*	Butternut is one of two native walnuts in Ontario. It is a short-lived, fast-growing, shade-intolerant tree associated with riparian and upland forests. It is distributed across southern Ontario, mainly south of the Canadian Shield. Under normal circumstances, Butternut forms small clusters of

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	trees in scattered forest gaps. The size of the remaining population in Ontario is unknown, but estimated to be at least 10,000, and possibly more than 100,000. However, Butternut Canker (*Ophiognomonia clavigignenti-juglandacearum*), an apparently exotic fungal disease has caused a massive, range-wide decline in Butternut numbers. Current trends suggest Butternut may be extirpated in Ontario within 90 years, with little hope of rescue from adjacent jurisdictions where the situation is equally dire. COSSARO has determined Butternut be listed as Endangered, based on an observed and projected population decline due to a pathogen. This is the same status assigned to this species by COSSARO in 2003, and the most recent COSEWIC evaluation in 2017.
Eastern Banded Tigersnail *Anguispira kochi kochi*	Eastern Banded Tigersnail is a relatively large (2.0 cm to 2.5 cm), pulmonate (air-breathing) terrestrial snail that occurs in calcareous and sandy deciduous woodland and forest habitat on islands in Lake Erie. Despite reasonable search effort in 2013-2015, it has not been found in 3 locations where it had previously been reported. Localized threats include climate change (drought, severe storms, and flooding), habitat modification from hyperabundant Double-crested Cormorant colonies, invasive plants and earthworms, and recreational trail use. With a restricted range, documented losses of subpopulations and predicted on-going losses, this subspecies has been classified as Endangered in Ontario.
Golden-eye Lichen **(Great Lakes population)** *Teloschistes chrysophthalmus*	Golden-eye Lichen is a distinctive bright orange to greenish-grey lichen. The abundant orange fruiting bodies with ciliate margins distinguish this species. There are two populations of Golden-eye Lichen in Ontario: Prairie/Boreal and Great Lakes. The Prairie/Boreal population occurs in localized areas from the Manitoba border to Rainy Lake. The Great Lakes population was once more widespread in southern Ontario but is now restricted to Sandbanks Provincial Park on Lake Ontario. Golden-eye Lichen requires well-lit, humid habitats and is often found along shorelines. In northwestern Ontario, it generally grows at very low density in relatively open, conifer-dominated woods and rocky barrens on White Spruce, Trembling Aspen, Jack Pine, Balsam Fir and Bur Oak. It has also been found along the edges of forests, rocky barrens and in a cemetery. In the southern Great Lakes region of Ontario, the only extant site grows on the bark of Red Oak in a remnant old-growth coastal deciduous forest of Sugar Maple, Eastern Hop-hornbeam and Red Oak.

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	The Great Lakes population has probably always been small, and only one of the four or five sites where it has been documented remain. Golden-eye Lichen (Great Lakes population) is classified as Endangered in Ontario because there is only one remaining location that could be lost, making it vulnerable to extirpation from the province. <u>Note:</u> Two designatable units of Golden-eye Lichen have been identified in Ontario. Prairie and Boreal populations have been grouped into a single designatable unit (DU1), and the Great Lake population is a separate designatable unit (DU2). Both Ontario DUs were originally assessed by COSSARO in May 2017. However, after this assessment, new observations for the Prairie/Boreal population were presented to the Committee. As a result, the Committee has deferred assessment of the Prairie/ Boreal population to the May 2018 meeting to include this new information in the assessment. As a result, this assessment is only considering the Great Lakes population of Golden-eye Lichen.
Harris's Sparrow *Zonotrichia querula*	Harris's Sparrow is the largest North American sparrow and the only songbird that breeds exclusively in Canada. In breeding plumage, both males and females sport a distinctive black hood and bib, while the rest of the body is mottled brown with black streaks. They have thin white wing bars. The birds lose the black hood in the non-breeding season having a drabber plumage which is unusual for a sparrow. Harris's Sparrow breeds in the shrubby subarctic taiga mainly from northern Manitoba and northern Saskatchewan west to southern portions of Nunavut and the NWT. It winters in the Great Plains of the US. It has been designated as Special Concern in Canada by COSEWIC primarily due to long term demonstrated declines on their wintering grounds. There is only a single confirmed breeding record of Harris's Sparrow from Ontario in 1983. In addition, a handful of other possible breeding occurrences have been recorded near Hudson Bay in the far north of the province. This area is very remote and coverage by birders or ornithologists has been limited. There is an extensive area of potentially suitable breeding habitat, but with very few records. It is uncertain if a regular breeding population occurs in the province or if the birds only represent occasional wanderers and sporadic breeders from their main range to the west. With current information, it is not possible to determine whether the

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	species is declining in the province. Consequently, Harris's Sparrow has been designated as Data Deficient in Ontario.
Lake Sturgeon *Acipenser fulvescens*	The Lake Sturgeon is a long-lived, late-maturing, bottom-dwelling fish and it is one of the largest freshwater fish species in Canada. It can be recognized by the large bony plates that cover its body and the broadly rounded snout. It is widely distributed in large lakes and rivers from the Saskatchewan River drainage in Alberta to the Hudson Bay and St. Lawrence River drainages in Quebec, and south to the lower portion of the Mississippi River. It has a broad distribution in Ontario, occurring in all major watersheds across the province. It also has special significance to Indigenous peoples. Ontario has recognized three Designatable Units (DUs) based upon genetic differentiation (COSEWIC in press), watersheds and physical separation: Saskatchewan-Nelson River, Southern Hudson Bay – James Bay, and Great Lakes/Upper St. Lawrence. Two of Ontario's DUs (the Saskatchewan-Nelson River populations and Great Lakes-Upper St. Lawrence populations) experienced declines of over 90% over 100 years ago largely due to commercial fishing and water pollution, along with barriers to their migration through the development of hydroelectric dams, and threats from water management and flow regulation, which can have an impact on food availability. Due to improving water quality and reductions to harvest, some populations are now showing signs of recovery; many others persist at low levels, compared to historical estimates, or are declining in numbers. Each provincial population and its current status is discussed below separately. Saskatchewan-Nelson River populations: This northwestern Ontario DU is assessed as Threatened based on declines in mature individuals over the past three generations where the cause of decline is reversible, understood and ceased. Previously this DU was the most at risk DU in the province due to the historical exploitation and water pollution, along with habitat disruption and fragmentation from hydroelectric power development, but Ontario fisheries for this DU are now closed, and some populations are recovering. There has also been effort to support sturgeon recovery through stocking efforts by both Indigenous and governmental communities; while the majority of these efforts have occurred in Manitoba and the USA, they benefit the overall DU and have some impact on Ontario populations through migration. Habitat quality has also improved since the implementation of legislation to protect water quality. The major concerns are the species' sensitivity to exploitation and habitat disruption, combined with past declines, and

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	development of hydroelectric power. This designatable unit meets the thresholds for Endangered, but the observed increase in abundance in Ontario populations, and cessation/reduction of the threats that lead to its historic decline (overharvest), and the issues of comparing historical catch weights with modern population estimates, it is considered here to meet the spirit of the criteria for Threatened. Southern Hudson Bay-James Bay populations: This northern designatable unit is assessed as Special Concern. In Ontario, the Southern Hudson Bay-James Bay populations appear to be the most robust and least at risk of the provincial populations, in part due to its distance from industrial development and active commercial fisheries. There are relatively large number of extant healthy populations, but the threat of habitat and population disruption from new or expanded hydroelectric power development on many of the northern rivers in Ontario remains. Given the significant global conservation responsibility and identified but unmitigated risks, Special Concern is appropriate and consistent with COSSARO's previous assessment. Great Lakes-Upper St. Lawrence populations: This DU is assessed as Endangered based on declines in mature individuals over the past 3 generations where the cause of decline has not ceased. In Ontario, this DU was greatly affected in the past by hydroelectric development and commercial exploitation. There are some relatively large healthy populations, but most populations are still at low levels compared to historic times and ongoing threats, including industrial effluent and agricultural impacts on water quality, are not declining across the majority of these populations' range. Some populations continue to show a decline in the number of mature individuals. This DU was previously assessed by COSSARO as Threatened; this change in status is non-genuine (i.e., does not represent a true deterioration in species' status since the last assessment), and is in part, a result of new COSSARO assessment criteria since the last assessment.
Caribou **(Eastern Migratory population)** (*Rangifer tarandus*)	Several Caribou (*Rangifer tarandus*) ecotypes occur across Canada, two of which occur in Ontario - the Boreal Population (forest-dwelling) and the Eastern Migratory (EM) Population (forest-tundra). There is some geographical overlap between the Boreal and Migratory Caribou populations in Ontario, particularly in winter, although the ecotype distinctions appear biologically and ecologically valid. Ontario's Eastern Migratory Caribou form part of the Southern

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	Hudson Bay subpopulation, which is also shared with northern Manitoba, and is one of four subpopulations in the EM Designatable Unit (DU). The Ontario portion of the subpopulation represents approximately 68% of the subpopulation's extent of occurrence, and 14.1% for the entire EM DU. Eastern Migratory Caribou occur across the Hudson Bay Lowlands from the Manitoba border east to the James Bay coast, extending from the Hudson Bay coast as far south as mid-way down James Bay. Eastern Migratory Caribou move to coastal habitat in spring and summer, returning to more forested and more southerly habitat in fall and winter. The location of wintering areas (January-March) has changed little over the past half-century, although summer distribution has shifted markedly eastward. Summer Caribou numbers in the Penn Island/Fort Severn area have decreased dramatically in recent decades, and numbers have correspondingly increased markedly further eastward near Cape Henrietta Maria. Major threats to this DU that are also applicable to this subpopulation include disturbance from industrial disturbance and development, particularly mining and associated road networks. ATV use in the western and central portions of the Hudson Bay Lowlands, at least in part for hunting, has increased substantially. Aboriginal harvest is ongoing and appeared to be gradually increasing at least until 2011. Climate change appears to be a long-term threat that may cause changes to tundra vegetation that reduces lichen availability. Threats have not ceased in the Ontario portion of the subpopulation. Trend data for the Southern Hudson Bay subpopulation in Ontario are difficult to obtain, due to insufficient recent monitoring and variable monitoring measures, although there are indications of decline. However, there is no evidence to suggest that the population decline is as severe as that for subpopulations to the east in Québec. The Southern Hudson Bay subpopulation of Eastern Migratory Caribou is designated as Special Concern in Ontario because of apparent but unquantified declines, ongoing and increasing threats, and dramatic declines elsewhere in eastern Canada. This contrasts with COSEWIC's designation of the Eastern Migratory Caribou population as Endangered based upon an 80% overall decline in number over three generations (18-21 years), which was predicted to continue because of overharvest and a decrease in habitat quality associated with climate change and development. However, two declining subpopulations of the Eastern Migratory DU in Québec which comprised the vast majority of the population exhibited a much more dramatic decline and heavily influenced the final COSEWIC status determination. The Southern Hudson Bay

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	subpopulation clearly shares a number of the same threats as the rest of the Eastern Migratory Caribou population.
Rusty Blackbird *Euphagus carolinus*	Rusty Blackbird is a medium-sized blackbird with a slender bill. Breeding males are dark glossy black. In winter, both males and females have rusty-coloured feathers. It breeds across Canada in every province and territory. In the U.S. it is a common breeding bird in Alaska, with occasional nesting in some northern states. The breeding range of Rusty Blackbird in Ontario is concentrated in the Hudson Bay Lowlands and northern Boreal Shield ecozones. Scattered records of nesting also occur along the southern edge of the Boreal Shield ecozone including Algonquin Park and St. Joseph Island. It breeds in wet forests, including areas with fens, bogs, muskeg, and beaver ponds. Ontario has a high conservation responsibility for this species. The estimated population size of the Rusty Blackbird in Ontario during breeding season represents approximately 23% of the global population. Rusty Blackbird is a short-distance migrate often travelling in mixed flocks with Red-winged Blackbirds and Common Grackles. Its winter range includes most of the central and eastern United States. The Rusty Blackbird winters in swamps, wet woodlands, and pond edges, and often forages on agricultural lands. Rusty Blackbird has been listed as Vulnerable on the IUCN Red List of Threatened Species since 2007 because of a declining population. The North American population has undergone a long-term decline of approximately 90% since 1970. Short-term results show a 3.5% annual decline, equating to an overall decline of 70% from 2002-2012. It is assessed as Special Concern in Canada. These declines may be a result of habitat loss and extermination programs in its wintering habitat where it forms large aggregations. Rusty Blackbird is assessed as Special Concern in Ontario because of historic declines that may not have ceased. Although still relatively common in Ontario, the global of this bird has undergone a steep decline. Ontario has a high conservation responsibility for this species with approximately 23% of the breeding population.
Shortnose Cisco *Coregonus reighardi*	The Shortnose Cisco (*Coregonus reighardi*) is a North American coregonid, one of 10 cisco species found in Canada. The Shortnose Cisco was historically found in Lake Huron, Lake Michigan and Lake Ontario, and is a deep water species (22 to 110 meters; Eshenroder et al. 2016); however, very little is known about their life history or habitat requirements. The

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	Shortnose Cisco's historic decline is thought to be due to overfishing, and more recently due to competition and predation by non-native fish species (COSEWIC 2017). The status of the Shortnose Cisco is further complicated by the possibility of hybridization among Cisco species in the Great Lakes, where some Shortnose Cisco traits may still be evident in fish that are not assignable to any one of the cisco species (Eshenroder et al. 2016). Despite intensive and targeted sampling, the last capture of a positively identified Shortnose Cisco was in 1985 (Georgian Bay, Lake Huron; COSEWIC 2017). The Shortnose Cisco is likely extinct; however, only 32 years have passed since it's last capture, excluding it from being categorized as "extinct". Shortnose Cisco is classified as Endangered in Ontario due to its small population size (< 250 individuals).
Spotted Wintergreen *Chimaphila maculata*	Spotted Wintergreen is a low-growing, evergreen perennial in the Heath (Ericaceae) family. Its toothed leaves have a distinctive white stripe along the mid-rib. Small white or pinkish flowers appear on a flowering stalk in late July and August. Spotted Wintergreen occurs across eastern North America and ranges into Mexico and Central America. All 13 documented native Canadian subpopulations are found in Ontario. These are mainly found in southwestern Ontario, although outlying occurrences have been found in central Ontario (Wasaga Beach and Muskoka district). Throughout its range, Spotted Wintergreen is a woodland understory species, associated mainly with oak and oak-pine forests and woodlands on well-drained soils. Plants may form clonal patches or can reproduce sexually via tiny seeds that are spread on the wind. This species is dependent on soil mycorrhizal associations for its growth and development. Six subpopulations in Canada are extant, five are extirpated, and two are considered historical. The total population is about 3600 stems, although the number of genetic individuals is unknown. Patches in the St. Williams and Turkey Point subpopulations are stable to increasing due to habitat management and search effort. Three of the extant subpopulations have been discovered in the last decade, probably due to increased search effort and reporting.

SPECIES (Common Name, *Scientific Name)*	**Summary of Species Assessments**
	The main threat to Spotted Wintergreen is probably recreational use in its habitat. Privately owned sites may be subject to development pressure. Other possible threats include fire suppression and habitat degradation. Spotted Wintergreen is classified as Threatened in Ontario due to its small and declining range in the province.
Deepwater Sculpin (*Myoxocephalus thompsonii*)	Deepwater Sculpin are bottom-dwelling fish found in deep, cold, well-oxygenated lakes and are an important prey item for a variety of other fishes (some important sport and commercial species). Deepwater Sculpin feeds mainly on the tiny crustaceans *Diporeia* and *Mysis*, although they also feed on chironomid (midges) larvae. Deepwater Sculpin form six Designatable Units in Canada, three of which are in Ontario (Great Lakes – Upper St. Lawrence DU; Southern Hudson Bay – James Bay DU; Saskatchewan – Nelson River DU). Deepwater Sculpin have a disjunct distribution with many populations found in isolated, coldwater lakes, and thus they are unlikely to disperse naturally. However, larval drift has been proposed as the mechanism for the re-establishment of the Lake Ontario population. Deepwater Sculpin are sensitive to invasive species impacts, eutrophication (pollution), water temperature changes, and food web shifts. The specific threats vary among the Designatable Units; however, in general, Ontario's Deepwater Sculpin populations are mostly stable, increasing (likely due to changes in search methods) or unknown. The Lake Ontario population was thought to be extirpated yet has recovered to high numbers. The Lake Huron population has declined, but this observation may be a result of utilizing deeper habitat in response to dreissenid mussel invasion. The Great Lakes – Upper St. Lawrence populations of Deepwater Sculpin are classified as Not at Risk in Ontario based on not meeting any criteria for listing. The Southern Hudson Bay – James Bay populations of Deepwater Sculpin are classified as Data Deficient based on a lack of information on numbers of location, EOO, IAO and possible threats in these remote areas. The Saskatchewan – Nelson River populations of Deepwater Sculpin are classified as Not at Risk based on large EOO, IAO and number of locations, coupled with limited identified threats in this area.

SPECIES (Common Name, *Scientific Name)*	**Summary of Species Assessments**
Eastern Pondmussel *Ligumia nasuta*	Eastern Pondmussel is a medium-sized (average length of 74 mm) freshwater unionid mussel with a compressed, elongate shell in colours that range from yellowish- to greenish-black in juveniles to dark brown or black in adults. The interior lining of shell is usually silvery-white or bluish-white in Ontario mussels. Males and females are difficult to differentiate on the basis of their shell morphology. Reproduction occurs in late summer, and females brood the larvae over the winter. By the spring, the larvae reach a specialized stage known as glochidia, which are released onto the gills of host fish. In order to survive, glochidia must spend a period of time attached to a host fish; they obtain nutrients from this host and develop into juveniles. Hosts in Canada are thought to include Brook Stickleback, Largemouth Bass, Pumpkinseed and Yellow Perch. After a period of development, the juvenile mussels drop off their hosts, and bury into the substrate where they feed on bacteria, algae and other organic particles obtained directly from the substrate or interstitial water. Adult mussels feed on similar types of food that they filter from the water column. Preferred habitat is found in sheltered areas of lakes and slow-flowing sections of rivers with substrates of fine sand and mud. Eastern Pondmussel occurs only in eastern North America, with a distribution that runs from the lower Great Lakes east through New York to New Hampshire, and south to South Carolina. In Canada, it has been found only in the Great Lakes region of southern Ontario, where it has typically been recorded at low abundance in many isolated wetland patches in the lower Great Lakes and a few inland lakes. A recent increase in search effort has led to new findings of Eastern Pondmussel in some of the coastal wetlands of Lake Erie and Lake Ontario, and also in several eastern Ontario inland lakes. These new findings substantially increase the previous estimates of area of occupancy and number of locations. In addition, an increase in abundance has been recorded for the St. Clair River delta subpopulation. The impacts of invasive dreissenid mussels on populations have lessened, although they remain a threat. Other threats include pollution from wastewater discharge, and agricultural and industrial effluents. Although previously assessed as endangered, the discovery of several additional sites and the increase in abundance in at least one subpopulation has allowed the Eastern Pondmussel to be down listed to Special Concern.