List of Species Considered by COSSARO in November 2009

Species Group	Common Name	Scientific Name	COSSARO Classification	Current SARO List
Lichens	Pale-bellied Frost Lichen	*Physconia subpallida*	Endangered	N/A
Vascular Plants	Pink Milkwort	*Polygala incarnata*	Endangered	Endangered
Vascular Plants	Virginia Goat's-rue	*Tephrosia virginiana*	Endangered	Endangered
Vascular Plants	Virginia Mallow	*Sida hermaphrodita*	Endangered	N/A
Insects	Northern Barrens Tiger Beetle	*Cicindela patruela*	Endangered	N/A
Insects	Monarch	*Danaus plexippus*	Special Concern	Special Concern
Fishes	Banded Killifish (Great Lakes Upper St. Lawrence population	*Fundulus diaphanus*	Not at Risk	N/A
Fishes	Banded Killifish (Arctic, Saskatchewan, Nelson population)	*Fundulus diaphanus*	Data Deficient	N/A
Fishes	Eastern Sand Darter	*Ammocrypta pellucida*	Endangered	Threatened
Birds	Yellow Rail	*Coturnicops noveboracensis*	Special Concern	Special Concern

Rationales for species assessed at November 3-4, 2009 COSSARO Meeting

Lichen

Pale-bellied Frost Lichen (*Physconia subpallida*)
Endangered
The Pale-bellied Frost Lichen is restricted to eastern North America, and grows on the bark of deciduous trees, or occasionally on rocks, where there is a relatively ample supply of calcium in the substrate. It is known from 27 populations globally, of which only four appear to be extant. Of the extant populations, two occur in Ontario. Habitat loss (through forest clearing for agriculture or settlement, logging and associated tree damage) and sulfur dioxide deposition are threats that appear to have led to the loss of most North American populations, and they continue to be threats at the extant sites in Ontario. Given the extreme rarity, small area of occupancy, history of declines, and ongoing threats, this species is classified as Endangered.

Plants

Pink Milkwort (*Polygala incarnata*)
Endangered
Pink Milkwort is a slender annual plant found only in tallgrass prairie habitats. It is known to be extant at one population at Ojibway Prairie Nature Reserve and at three populations at Walpole Island First Nation (WIFN). It is probably extirpated at one of the WIFN populations due to habitat change (mowing and trampling) and another population also is probably extirpated as it has not been recorded since 1996. Direct threats to the species include loss of habitat and habitat degradation as a result of encroachment by woody species (due to lack of fire) and invasion by exotic species. This species is classified as Endangered because of there persistent and ongoing threats combined with its limited distribution in Ontario.

Virginia Goat's-rue (*Tephrosia virginiana*)
Endangered
Virginia Goat's-rue is a perennial herb that occurs in Ontario only in provincially rare tallgrass prairie and savannah habitats on the acidic sand of the Norfolk Sand Plain. There are two extant populations in Ontario and one that has been extirpated since 1991. One extant site is small with about 100 individuals. Direct threats to the species include loss of habitat and habitat degradation as a result of erosion, encroachment by woody species, trampling from ATVs and invasion by exotic species. It has been listed as Endangered in Canada since 2000 and COSSARO continues to classify it this way.

Virginia Mallow (*Sida hermaphrodita*)
Endangered
Virginia Mallow is a globally rare tall perennial herb endemic to eastern North America. It occurs in disturbed floodplains and is known from two Ontario sites. Although the species has declined in some parts of its range, there are no documented declines in the Ontario population. One of the two Ontario sites is in a highly disturbed site and is further threatened by quarry expansion and gas pipeline maintenance. The other population is potentially threatened by mowing and an invasive exotic species (*Phragmites australis*). There is no evidence of population declines, with the first

population having remained stable at about 210 stems and the second increasing from 83 stems in a 2001 estimate to about 2,300 stems in 2008, perhaps due to increased search effort. Virginia Mallow is occasionally cultivated and has escaped from cultivation elsewhere in its range. There are no known cultivated plants in the vicinity of either Ontario population and one has persisted for more than 50 years. Assessed as Endangered due to its global and northeastern North American rarity and small number and threatened nature of Ontario populations.

Arthropods

Monarch (*Danaus plexippus*)
Special Concern
The Monarch is a familiar species in Ontario, undergoing several generations per year and usually building up significant and conspicuous populations throughout much of the province. The species is extremely well-known because of its migration to overwintering sites in Mexico. The overwintering sites in Mexico occur in limited areas (< 0.2 km^2) subject to significant pressures, especially from legal and illegal logging, and forest degradation from encroaching agricultural development. Experts suggest that these pressures could potentially push the eastern North American populations of the Monarch to the brink of extinction. Widespread application of herbicides and pesticides and widespread planting of BT transgenic corn are potential threats in the North American breeding range, but data on these threats have been contradictory. Other potential threats needing investigation are wind turbines especially near roosts or migration routes and invasive plants such as Dog-strangling Vine (*Vincetoxicum rossicum*). Monarchs are listed as Special Concern because of ongoing threats to their survival.

Northern Barrens Tiger Beetle (*Cicindela patruela*)
Endangered
Northern Barrens Tiger Beetle is an attractive metallic green beetle inhabiting sandy open forests. This is a relatively elusive species, easily overlooked because of its similarity to the very common Six-spotted Tiger Beetle. Its range includes northeastern and north-central North America, reaching its northern limit in southern Ontario. In Ontario, it occurs in Pinery Provincial Park where it was first discovered in 1991. It formerly occurred at Constance Bay on the Ottawa River (discovered in the 1950s), but this population is believed to be extirpated, probably due to forest succession and DDT spraying. The species is rare and declining throughout its range. Significant threats include habitat loss associated with natural succession, as well as trampling and increased predation along pedestrian trials. Northern Barrens Tiger Beetle is classified as Endangered due to its small population size, restricted range, and apparent decline in Ontario and globally.

Fish

Banded Killifish (*Fundulus diaphanous*)
Great Lakes Upper St. Lawrence population - Not At Risk
Arctic, Saskatchewan, Nelson population - Data Deficient
Banded Killifish is a small fish inhabiting shallow, clear, marshy waters of lakes and streams along the Atlantic coast from South Carolina to Newfoundland and inland

through the Great Lakes, except Lake Superior. West of the Great Lakes, it is found in the upper Mississippi and lower Nelson watersheds. In Ontario, its range includes much of southern Ontario, north to Georgian Bay, and also the Lake of the Woods area in north-western Ontario. The Lake of the Woods populations were first discovered in 1979 and the species apparently spread to new locations through the mid-1990s. Although not definitive, this dispersal pattern suggests that it may have been recently introduced to Lake of the Woods as a baitfish. Two subspecies occur in Ontario: *F. d. diaphanus* in the east (which has hybridized extensively with the western subspecies in the St. Lawrence River, Lake Ontario, and Lake Erie) and *F. d. menona* in the west. Two Designatable Units (DUs) are recognized in Ontario, coinciding with the Great Lakes – upper St. Lawrence watershed and the Saskatchewan - Nelson River watershed. Populations in the Great Lakes – upper St. Lawrence watershed have shown no sign of change, but the Lake of the Woods population apparently has declined sharply since the mid 1990s. Potential threats include loss of wetland habitat, invasive species, and eutrophication. The Great Lakes – upper St. Lawrence DU is classified as Not at Risk**.** The Saskatchewan - Nelson River DU, is Data Deficient, given the uncertainty of its origin.

Eastern Sand Darter (*Ammocrypta pellucida*)
Endangered
The Eastern Sand Darter is a small fish inhabiting sandy streams and sandy shoals in lakes. It is distinguished from other Canadian darters by its translucent colouration and slender, elongate shape. Its range includes the Ohio River basin, the lower Great Lakes drainage and the St. Lawrence River and Lac Champlain drainages. In Ontario, it occurs at seven locations (Sydenham River, Thames River, Lake St. Clair, Big Creek, Grand River, Long Point Bay, and Rondeau Bay) but appears to have been extirpated at four others (Pelee Island, Ausable River, Catfish Creek, and Big Otter Creek). Population trends are not known with certainty, but some information suggests that populations have declined in Lake Erie, Lake St. Clair, and Big Creek. Threats include siltation of stream habitats, channel alterations, and water pollution. Predation and competition from a recent invasive species, Round Goby, may be a significant impending threat. Eastern Sand Darter is classified as Endangered due to its global decline, extirpation from several Ontario streams, and vulnerability to habitat changes and invasive species.

Bird

Yellow Rail (*Coturnicops noveboracensis*)
Special Concern
The Yellow Rail is a small, secretive yellowish brown water bird that is quail-like in its appearance. Ninety percent of its breeding range is in Canada; in Ontario, its population stronghold is in the Hudson and James Bay coastal marshes, but it is also found farther south in Ontario in widely scattered sedge- dominated wetlands. Because Yellow Rails reside primarily in remote marshes and are active mostly at night, information on population trends is elusive due to detection challenges. Only Breeding Bird Atlas programs and targeted surveys offer reliable data on this species and vast areas of potential habitat in remote Hudson Bay Lowlands inland from the coasts have never been surveyed for this bird. Yellow Rails nest in short, grass-like vegetation in wet

marshy areas, and require both specific water levels and an overlying dry mat of dead vegetation which they use for roofing their nests or protecting themselves against predators. The principal threats to the species are continual wetland loss and degradation, with accidental deaths arising from mowing and harvesting, collisions with tall structures, and nest trampling. The species has most likely experienced declines in southern Ontario along with the extensive wetland conversion for agriculture and urban development that occurred in the past and continues to some extent today. The James Bay coasts (and presumably the Hudson Bay coast as well), by contrast, appear to house a significant portion of the global Yellow Rail population. While this region is currently remote and ecologically intact, concerns about future development pressures along these coastlines, including roads and wind power infrastructure will threaten the status of this sensitive species resulting in it being listed as Special Concern.