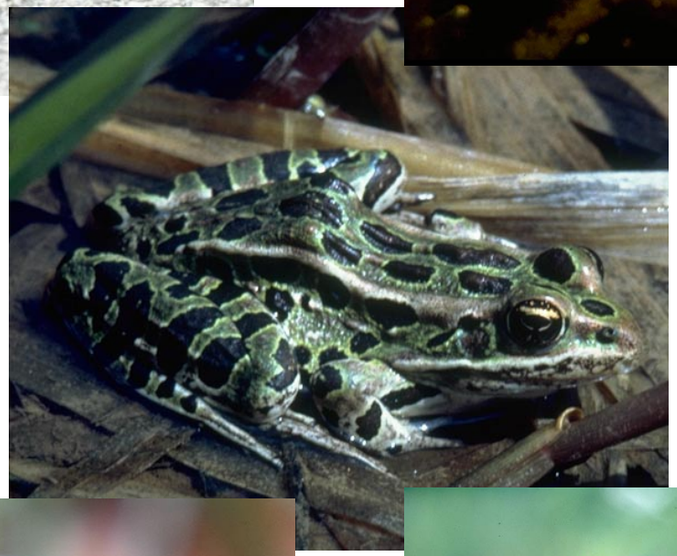


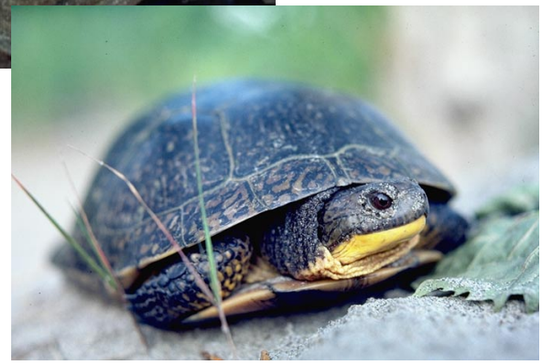





CVC
CREDIT VALLEY CONSERVATION

Reptiles and Amphibians of the Credit River Watershed

2002

ABOUT THESE LISTS

Credit Valley Conservation staff and a range of partners worked to compile information about the plants and animals found throughout the watershed as part of the Natural Heritage Project. One phase of this work was the creation of *Habitat Utilization Tables* for birds, fish, mammals and herpetofauna (reptiles and amphibians) within the Credit River watershed. The purpose of these tables was to provide information on the habitat preferences, habitat requirements, trophic feeding level and tolerance of different species.

The community types described within these documents are based on the *Ecological Land Classification (ELC) for southern Ontario (Lee et al., 1998).* Mapping of these community types has recently been completed for the entire watershed. Land use types are based on the *Credit Watershed Natural Heritage Project Detailed Methodology (April, 1998).*

The list of Reptiles and Amphibians (Version 2, February 1999) was initially compiled using *The Reptiles and Amphibians of the Hamilton Area (Lamond, 1994*). Changes to the lists were made based on recommendations by members of the Working Group, identified in the accompanying box (see left).

Research

Research on the habitat preferences, habitat requirements, trophic feeding level and tolerance, was conducted using resources at CVC, and information received from the Ministry of Natural Resources and the United States Department of Agriculture *(see reference lists for tables)*. Input from the working group during monthly meetings in the winter of 1997/98 was also incorporated into the tables. Assignment of species to community type(s) in the table reflects those that were cited by the referenced sources, or by working group members, either specifically or generally.

WORKING GROUP

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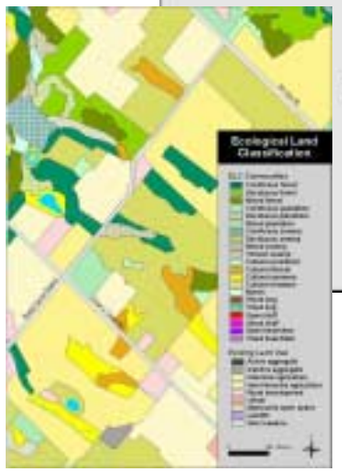
REPTILES & AMPHIBIANS



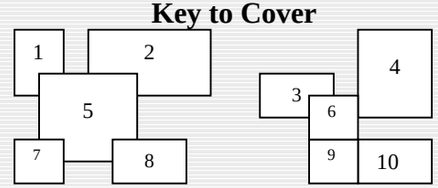
Ecological Land Classification (ELC)

The Ecological Land Classification provides tools and techniques for consistent description, identification, classification and mapping of community types. The ELC is now becoming a standard method across Ontario to meet the needs of ecosystem management and land-use planning. It helps identify changes in land use. Credit Valley Conservation's ELC work indicates that urbanization in our watershed increased from 15% in 1988 to 21% by 1996. A huge change, beyond our original forecast!

In the 1950s work began across Canada to develop a classification system for recurring ecological communities. The goal was to reduce complex natural variation to meaningful ecosystem units. In Ontario, the terminology and descriptions developed in the nation-wide effort are being built upon at regional and site-level scales. The eventual goal in Ontario is to set a standard approach for ecosystem description, inventory and interpretation to improve our ability to manage natural resources.

The ELC was first tested in the Credit River watershed by Credit Valley Conservation Authority staff. The information gathered will strengthen protection, restoration and management efforts in land-use planning and private land stewardship. The map on the left is a simplified version of the ELC for the Credit River watershed. The inset is a complex "Communities Series" level map of ELC southwest of the Village of Alton within the Credit River watershed.

Key to Cover



1. eastern garter snake
2. bullfrog
3. snapping turtle
4. northern leopard frog
5. northern leopard frog
6. spotted salamander
7. American toad
8. Blanding's turtle
9. red eft
10. painted turtle

KEY TO TABLES

The following definitions have been provided to help better understand the status of which has been assigned to a particular species, and other information contained in the tables. Not all information appears on all tables.

Rarity Codes

G-Rank
A network of natural heritage programs, scientific experts and The Nature Conservancy develops G-Rank or global ranks. The ranking is based on the range-wide status of a species, subspecies or variety.

Codes

G1	Extremely Rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2	Very Rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3	Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G4	Common; usually more than 100 occurrences; usually not susceptible to immediate threats.
G5	Very common; demonstrable secure under present conditions.
GU	Status uncertain; often because of low search efforts or cryptic nature of the species; more data needed.
G?	Unranked; or, if following a ranking, rank tentatively assigned (e.g. G3?)
G	A “G” (or “T”) followed by a blank space means that the NHIC has not yet obtained the Global Rank from the Nature Conservancy.
Q	Denotes that the taxonomic status of the species, subspecies, or variety is questionable.
T	Denotes that the rank applies to a subspecies or variety.

S-Rank

S-Rank - are provincial ranks (or Sub national ranks) that are used by the Natural Heritage Information Centre to set protection priorities for rare species and natural communities. The ranks are assigned based upon recent records.

Codes

S1	Extremely Rare; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.
S2	Very Rare; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.
S3	Rare to Uncommon; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
S4	Common; usually more than 100 occurrences; usually not susceptible to immediate threats.
S5	Very Common; demonstrably secure under present conditions.
S#B	Breeding season status
S#N	Non-breeding season status
SZ	Not of practical conservation concern in as much as there are no clearly definable occurrences; applies to long distance migrants which are too transitory and dispersed in there occurrence to be reliably mapped; most such species are non-breeders
SZN	Non-breeding migrant
S#?	Rank inexact or uncertain
SE	Exotic. Not believed to be a part of Ontario’s natural fauna.
SH	Historical; of only historical occurrence in the province (no occurrences verified in the past 20 years), but with expectation that it may still be extant.
C	Captive/Cultivated; existing in the province only in a cultivated state; introduced population may not yet be fully established.

COSEWIC

Status assigned by the Committee on the Status of Endangered Wildlife in Canada, following the 1996 COSEWIC List.

Codes

END Endangered - any indigenous species of fauna or flora threatened with imminent extinction or extirpation throughout all or a significant portion of its Canadian range.

THR Threatened -any indigenous species of fauna or flora that is likely to become endangered if the factors affecting its vulnerability do not become reversed.

VUL Vulnerable - any indigenous species of fauna or flora that is particularly at risk because of low or declining numbers, occurrence at the fringe of its range or in restricted areas or for some other reason, but is not a threatened species.

NAR Not At Risk - the status has been reviewed and the species is not threatened.

MNR

Status assigned to native Ontario species by the Ontario Ministry of Natural Resources based upon recommendations of a Ministry technical committee called the Committee on the Status of Species at Risk in Ontario (COSSARO). This list is integrated with the work of COSEWIC, although designations do vary in a small number of cases. List dated December 1996.

Codes

END Endangered - any native species that, on the basis of the best available scientific evidence, is at risk of extinction or extirpation throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.

THR Threatened - any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a significant portion of its Ontario range if the limiting factors are not reversed.

VUL Vulnerable - any native species that, on the basis of the best available scientific evidence, is a species of special concern in Ontario, but is not a threatened or endangered species.

IND Indeterminate - any native species for which there is insufficient information on which to base a status recommendation.

NIA Not In Any COSSARO category - any native species evaluated by COSSARO, which does not currently meet the criteria for assignment to a provincial risk category.

Utilization Codes

Preferred (P): Indicates the preferred habitat(s) of that species. In the case of aquatic habitats, "preferred" refers to bodies of water used as more than a food source, e.g. breeding, denning, and transportation. Terrestrial habitats classified as "preferred" are most often selected by the species for breeding, denning, and wintering.

Utilized (U): Indicates the habitats utilized by a species that are not preferred habitats. In the case of aquatic habitats, "Utilized" bodies of water are used as a food source, but not for breeding, denning or transportation. Terrestrial habitats classified as “utilized” include those habitats that are infrequently selected by that species for breeding, denning and wintering, and those habitats that are solely used to provide food.

Not utilized (X): Indicates habitats that are not utilized by a species.

Blank ( ): Indicates unknown use by a species.

Habitats

The following community types and codes are described in the order and form in which they appear in the following tables.

FORESTED HABITATS

Upland Forested Habitats:

Deciduous Forest (FOD):
A natural community with greater than 60% canopy cover and greater than 75% deciduous composition.

Coniferous Forest (FOC):
A natural community with greater than 60% canopy cover and greater than 75% coniferous composition.

Mixed Forest (FOM):
A natural community with greater than 60% canopy cover, where neither the deciduous nor the coniferous composition of the community is less than 25%.

Lowland Forested Habitats:

Deciduous Swamp (SWD):
A Wetland community where tree cover is greater than 25%, and the deciduous content is greater than 25% coverage.

Coniferous Swamp (SWC):
A wetland community where tree cover is greater than 25%, and the coniferous content is greater than 75% coverage.

Mixed Swamp (SWM):
Wetland communities where tree cover is greater than 25%, and where both deciduous and coniferous composition of the community is greater than 25%

Cultural Forested Habitats:

Deciduous Plantation (PLD):
A cultivated community with greater than 75% deciduous tree composition.

Coniferous Plantation (PLC):
A cultivated community with greater than 75% coniferous tree composition.

Mixed Plantation (PLM):
A cultivated community where deciduous and coniferous composition of the community is greater than 25%.

NON-FORESTED HABITATS

Cultural Habitats:
(Communities resulting from or maintained by human activities)

Cultural Meadow (CUM):
A community where tree and shrub cover is less than or equal to 25% as a result of human disturbance. Grasses and herbs dominate the area.

Cultural Savannah (CS):
A community where tree cover is between 25% and 35%. Vegetation is stratified with scattered or patches of open grown trees, groundcover dominated by grasses and herbs.

Cultural Woodland (CW):
Communities where tree cover is between 35% and 60%. Vegetation is stratified with scattered or patches of open grown trees, groundcover dominated by grasses and herbs.

Non-Intensive Agriculture (NAG):
Field dominated with herbaceous vegetation and grasses with an understory of similar material in a state of decay. Includes pasture and grazing areas. Weedy hay and/or pasture cover more than 50% of the area. Associated with extensive or unconfined grazing of livestock. There is minimal evidence of recent cultivation.

Intensive Agriculture (IAG):
Cultivated fields producing crops in varying degrees (e.g. corn and wheat). This includes specialty agriculture that consists of orchards, market gardens, Christmas tree plantations, and nurseries.

Wet Meadow (WM):
Lands that are periodically "soaked" or "wet", and are currently being used for agricultural purposes (i.e. grazing). These lands, by definition under the Ontario Wetland Evaluation System, are not considered to be wetlands.

Natural Lowland Habitats:

Marsh (MA):
Wetland areas where water depth is less than 2 metres and tree and shrub cover is less than 25%. These areas are characterized by emergent vegetation such as cattails, bull rushes and arrowheads.

Bog/Fen (BO/FE):
Peatlands where the water is at or near the surface. Surface layers consist of poorly decomposed peat. A mat of Sphagnum moss and low shrubs including leatherleaf and Labrador tea characterize bogs. Bogs are often raised, nutrient poor and acidic. Sedges, mosses, shrubs and sometimes trees characterize fens. Fens have low oxygen saturation and nutrient rich.

Thicket Swamp (SWT):
Wetland communities where tree cover is less than 25%, and the shrub species cover is greater than 25%, including dogwoods, alders and willows.

Aquatic Habitats

Lacustrine Shoreline:
Lacustrine: aquatic environment associated with the waters of a lake or pond. Shoreline: the area marking the points of contact between land and the body of water, such as a lake.

Lake/Pond:
Lake (L): an extensive body of water lying in a depression that is 2 ha. in size or greater. A lake can be completely enclosed by land or can have either or both an in-flowing and out-flowing stream. Interrupting the flow of a watercourse with a dam can also create a lake. Pond (P): an area of still water between 0.5 and 2 ha. in size lying in a natural or man-made depression. Can be completely enclosed by land or can have either or both an in-flowing or out-flowing stream. Interrupting the normal flow of a watercourse with a dam can also create a pond. Includes beaver ponds.

Riparian:
Riparian: areas immediately adjacent to permanent watercourses and the surrounding ecotonal vegetation on the banks of rivers and streams. Characterized by periodic flooding and/or high groundwater.

River /Stream:
River (R): a large, permanent watercourse with at least some permanent tributary streams.

Vernal Pool:
Seasonally flooded areas created by surface runoff/meltwater, occurring in the spring. They play an important part in amphibian reproduction.

Photos courtesy of D. Bradley, J.L Riley and H. Lee in Lee et al. 1998.

Urban/Rural (U/R)

Urban Urban areas are heavily impacted, consisting of gravel, pavement, manicured open space, with buildings and structures that are developed or under construction and may be industrial, residential, commercial or institutional.

Rural Generally, areas of land use that are greater than 0.5 ha. Includes agriculture, rural development, aggregate extraction, manicured open space and landfill.

Trophic Feeding Level

The trophic feeding level is related to the step that the species occupies as a consumer in the food chain.

The predominant food (>60%) is always listed ahead of any significant secondary food (30%-40%) sources.

H	**Herbivore**	diet consists of plant material
I	**Insectivore-Invertivore**	diet consists of terrestrial and/or aquatic insects and other small animal matter
P	**Piscivore**	a carnivore with a diet consisting of fish
C	**Carnivore**	diet consists of fleshy animals either birds, rodents and/or small or large mammals
O	**Omnivore**	diet consists of plant material and fleshy animals either birds, rodents, mammals and/or fish

Habitat Requirements

G	**Generalist**	utilize several habitat types and exhibit no special habitat requirements
S	**Specialist**	utilize only one habitat type or have very specific habitat requirements
O	**Opportunist**	very adaptable, often invading previously unused habitats and locations whenever access to these areas is not restricted by either natural or man-made barriers, or community structure often observed breeding in highly disturbed environments such as urban and/or agricultural areas

Tolerance (to Human Disturbance)

T	**Tolerant**	a species which is not sensitive to human activities or disturbances
S	**Sensitive**	a species which is sensitive to human activities or disturbances
M	**Moderately Sensitive**	a species which is intermediate in its response to human activities or disturbances

Comments

The comments section contains information that clarifies data within the table, as well as other relevant information. Introduced species, specific food requirements, and specific habitat requirements, including specific habitat types that may have been assigned to one of the community types on the table, are noted in this section. For instance, a preference for pine forest by a species would be reported in this section, and included in the Coniferous Forest community type column. Where known, information regarding species distribution within Ontario was also included.

Reptiles and Amphibians
of the Credit River Watershed

Species Common Name	Scientific Name	G-Rank	S-Rank	COSEWIC	MNR	Forested Habitats						Non-Forested Habitats							Aquatic Habitats		Vernal Pools	U/R	Trophic Level	Habitat Requirements	Tolerance	Comments
						Upland			Lowland			Upland			Lowland												
						FOD	FOC	FOM	SWD	SWC	SWM	CUM	NAG	IAG	MA	BO/FE	WM	SWT	L	R						
Reptiles																										
Common Snapping Turtle	Chelydra serpentina	G5	S5			U[8]		U[8]	U	U	U	U	U	U	U[2]	U	U	U[8]	P	U[2]	N[1]		O	G	T	Needs aquatic habitat[1]. Highly migratory[2]. Needs sand and gravel for egg laying[2]. Do not usually bask out of the water[6].
Midland Painted Turtle	Cherysemys picta marginata	G5T5	S3									U	U	U	U	U	U[8]	U	P[2]	P	N[1]	N[1]	O	G	T	Needs aquatic habitat[1]. Will use farm ponds[2]. Needs sand and gravel for egg laying[2]. Most widely ranging turtle in Ontario[3]. Prefers quiet, slow moving permanent water with soft bottom[5].
Red Eared Slider	Trachemys scripta elegans	G5	SE1									U	P		P				P	P	N[1]		O	O	T[2]	Needs quite waters with muddy bottom & abundant vegetation/protruding logs, etc. for basking[1]. Exotic species[2].
Blanding's Turtle	Emydoidea blandingi	G4	S4									U	U		U	U	U	U	P[2]	U	N[1]		O	G/S[2]	M/S	Needs shallow water with soft muddy bottom with abundant vegetation[1]. Will use farm ponds[2]. Needs sand and gravel for egg laying[2]. Quite cold tolerant[6]. Prefers secluded bays, lakes and large open marshes with little human intrusion[7]. Probably a threatened species in the watershed[9].
Common Map Turtle	Graptemys geographica	G5	S4									U	U						P	P	N[1]		O	S	M/S	Mollusks are primary food source, therefore prefers muddy/soft bottom[1]. Also needs sand and gravel for egg laying[2]. Almost never found in small ponds and dugouts[3]. Highly aquatic[6]. Possible occurs in the lower Credit River and Rattray Marsh, unlikely to be found elsewhere in the drainage[9].
Eastern Garter Snake	Thamnophis sirtalis sirtalis	G5T?	S5			U	U	U	U	U	U	U	U	U[2]	U	U	U	U	U[8]	U	N[1]	U	C	O	T	Need areas for hibernculum[2]. Hibernates in large numbers[5]. Found in a variety of habitats; opportunistic feeder; move to hibernate in the first two weeks of October[7].
Northern Redbelly Snake	Storeria occipitomaculata	G5	S5			P	U	P	U	U	U	U	U			U	U				N[1]	U	I	G[2]	M/S	Prefers woolands with woodpiles[2]. Habitat simmilar to Brown Snake[3]. Feeds on earthworms, slugs and insect grubs[7].
Northern Brown Snake	Storeria dekayi dekayi	G5	S5			P		P	U	U	U	U	U	U							N[1]	P	I	O	M/S	Habitat similar to redbelly[2]. Frequents sites too disturbed for Redbelly snake[3]. Feeds on slugs and earthworms[7].
Northern Ringneck Snake	Diadophis punctatus edwardsi	G5	S4			U	U	U					U				U				N[1]	M	I/C[2]	G[2]	S	Prefers mesic areas with abundant cover (rocks)[1]. Does not lay eggs in really wet areas[2]. Very secretive[3]. Preys on salamanders[7].
Eastern Milk Snake	Lampropeltis triangulum triangulum	G5	S4			U		U	U		U	P[2]	P[2]	U		U				U	N[1]	P	C	G	M/S	Needs loose soil or suitable cover for laying eggs, and a large supply of rodents[2]. Found near farm outbuildings[8].
Northern Water Snake	Nerodia sipedon sipedon	G5T5	S5												U			U	P[2]	P[2]	N[1]		C/P[2]	S	M/S	Needs boulders or branches overhanging water[3]. Aggressive[2]. Will live near most permanent bodies of water[6]. Feeds on frogs, fish and tadpoles[7]. Common in areas of low human impact[9].
Smooth Green Snake	Opheodrys vernalis	G5	S4			U		U	U		U	P	P		U	U[8]	U	U		U	N[1]		I	G[2]	S/M[2]	Needs upland-grassy openings[1]. Also uses ledge and cliff habitats[1]. Feeds on caterpillars, spiders and grasshoppers[7].
Northern Ribbon Snake	Thamnophis sauritus septentrionalis	G5	S4			U		U[2]	U[2]		U[2]				P[2]	U	U	U	U	U	N[1]		I/C	G[2]	S	Needs shallow, permanent water in grassy habitat[1]. Eats frogs and snakes[2].
Amphibians																										
Mudpuppy	Necturus maculosus maculosus	G5	S4			N[1]	N[1]	N[1]	N[1]	N[1]	N[1]	N[1]	N[1]	N[1]	U	N[1]	N[1]	U	P	P	N[1]	N[1]	I/P	S	M/S	Needs permanent bodies of water which is well oxygenated[1]. Not found in Lake Ontario[2]. Nocturnal species[9].
Red-spotted Newt (Eastern)	Notophthalmus viridescens viridescens	G5T5	S5			U	U	U	U	U	U[2]				P	U[2]	U	U	P	U	N[5]		I	S	M/S	Adults newt requires water with aquatic vegetation[3]. Juvenile Red EFT phase is terrestrial[2].
Jefferson Salamander	Ambystoma jeffersonianum	G2	S2			P[2]		U[2]	P						U		U	U	P	P	P[2]		I	S	S/M	Requires temporary pools for breeding[3]. Usually lays eggs in pools in rich forests[5]. Prefers undisturbed habitats[6].
"Silvery Salamander"	A. laterale-(2)jeffersonianum	N/A	N/A			P[2]		U[2]	P						U[2]		U[2]	U[2]	P[2]	P[2]	P[2]		I	S	S/M	Jefferson Salamander complex.
"Tremblay's Salamander"	A.(2) laterale-jeffersonianum	N/A	N/A			P[2]		U[2]	P						U[2]			U[2]	P[2]	P[2]	P[2]		I	S	S/M	Needs marshes/vernal pools for breeding[2]. Jefferson Salamander complex.
Blue-spotted Salamander	Ambystoma laterale	G5	S4			U	U[5]	P[2]	U	U[4]	U[5]	P[2]	U[2]		U[5]	U	U	U	P	U	U[5]		I	S	M/S	Needs ponds/semi-permanent water for breeding[1]. Will breed in ditches; requires presence of water into mid-summer[5]. Relatively cold tolerant[6].
Northern Redback Salamander	Plethodon cinereus	G5	S5			P[2]	U	P[3]	U	U	U					U		U[2]			N[1]	U	I	S	M/S	Need logs, stumps and rocks for cover/egg laying[3]. Not found in flooded areas[2]. Rotting logs in mid-aged to mature woodlands[4]. Avoids areas twhich are frequently flooded or have sandy soils[6].
Four-toed Salamander	Hemidactylium scutatum	G5	S4			U	U	U	P	U	U				U	P	U	U[8]	U	U	P[2]		I	S	S	Needs acid/wet woodlands[3]. Larvae need water[2]. Nests in moss overhanging water[8].
Spotted Salamander	Ambystoma maculatum	G5	S4			U	U	U	P	U	U				U		U	U	P	U	P[2]		I	S	M/S	Needs mesic woods with semi-permanent water for breeding[1]. Will breed in lakes with fish[1]. Utilizes caves[1]. Temporary/semi-permanent water is a critical habitat element[6].
Eastern American Toad	Bufo americanis americanis	G5	S5			U	U	U	U	U	U	U	U	U	U	U[2]	U	U	U	U	P[2]	U	I	O	T	Needs shallow water for breeding-hibernates in underground burrows[1]. Utilizes more types of habitat for breeding than any other amphibian[3].
Northern Spring Peeper	Pseudacris crucifer crucifer	G5	S5			U	U	U[2]	U	U[4]	U				P	U[8]	U	U	P	U	P[2]		I	G	M/S	Will breed in permanent water/ditches[2]. Needs temperate water bodies[4]. Breeds mostly in pools in secondary growth forests/swamps[5].
Tetraploid Grey Treefrog	Hyla versicolor	G5	S5			U		P[2]	U		U				U	U		U[3]	P	U	U[5]	U[3]	I	G	M/S	Needs aquatic sites for breeding (not vernal pools)[3]. Prefers mixed forests[2]. Will breed in farm ponds[2].

Reptiles and Amphibians
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Species Common Name	Scientific Name	G-Rank	S-Rank	COSEWIC	MNR	Forested Habitats						Non-Forested Habitats							Aquatic Habitats		Vernal Pools	U/R	Trophic Level	Habitat Requirements	Tolerance	Comments
						Upland			Lowland			Upland			Lowland												
						FOD	FOC	FOM	SWD	SWC	SWM	CUM	NAG	IAG	MA	BO/FE	WM	SWT	L	R						
Striped Chorus Frog (Western)	Pseudacris triseriata triseriata	G5	S5			U[3]	U[3]	U[3]	U[3]	U[3]	U[3]	P[3]	U[3]	U[3]	P[3]	U[8]	P[2]	U[2]	U[2]	U[8]	P[2]	U	I	G	M/S	Burrows in winter, emerges later and begins hibernation earlier in summer, more sensitive than Spring Peeper-only live for approx. 1 year[2]. Requires areas with floating/aquatic emergent vegetation[5].
Wood Frog	Rana sylvatica	G5	S5			P[2]	U	U	U	U	U			U	U	U	U	U	U	U	P[2]		I	S	M/S	Needs temperate woodland pools or backwaters of slow-moving streams for breeding[2]. Rarely found in water when not breeding[6].
Northern Leopard Frog	Rana pipiens	G5	S5						U			P[2]	U		P	U	P	U[8]	U	U	U[8]		I	G	M/S	Needs wet meadows[3]. Migrates from wetlands to wet meadows in summer after breeding[5].
Pickerel Frog	Rana palustris	G5	S4				U	U		P[2]	U				U[8]	P			P	P[8]			I	S	S	Needs shallow/cool pools of bogs and ponds for breeding, also uses caves[1]. Persistant close to cold water springs[3]. Similar to Northern Leopard frog[5]. Less inclined to wander than Northern Leopard Frog[6].
Green Frog	Rana calmitans melanota	G5	S5							U	U[8]				U		U	U	U	P	N[5]	U	I/C	O	T	Needs riparian areas[3]. Will breed in man-made ponds, slow-moving and stagnant water[3]. Needs deep ponds with high oxygen content[2]. Young take 1 year to emerge and must overwinter in water[3]. More tolerant than Bullfrog[6].
Mink Frog	Rana septentrionalis	G5	S5						U	U[4]	U[8]				U/P[6]	U[8]			P	P	N[5]		I/C	S	M/S	Breeds & hibernates in permanent water only, prefers lily pads in open water for basking and feeding[1]. Prefers cool, permanent water with ample emergent vegetation[6].
Bullfrog	Rana catesbeiana	G5	S4			N[2]	N[2]	N[2]	U	N[2]	U	N[2]	N[2]	N[2]	U		N[2]		P	U	N[2]		I/C/P	S	M/S	Totally aquatic[2]. Needs deep, permanent water with emergent vegetation, tadpoles must overwinter in water[3].

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9. **Other:** Many Naturalist clubs were consulted during the compilation of this list including: Upper Credit Field Naturalists, Halton North-Peel Naturalists and South Peel Field Naturalists.