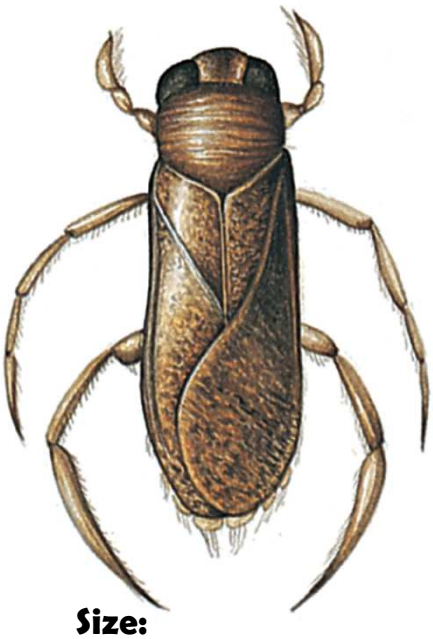
Rideau Valley Conservation Authority

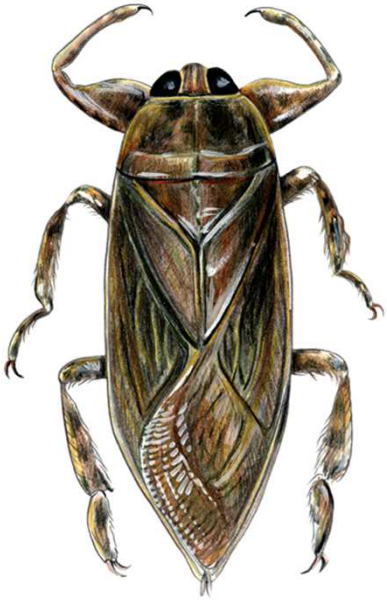
Baxter Conservation Area ID Cards

Water Boatman
(Arctocorixa interrupta)



Size:
3 to 11 mm in length

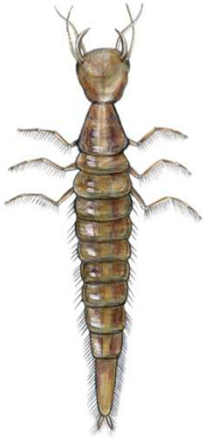
Giant Water Bug
(*Lethocerus americanus*)



Size:
25 to 100 mm in length
(~actual size of fully grown adult)

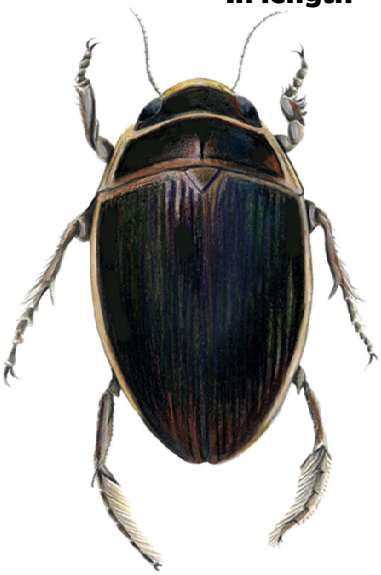
Predaceous Diving Beetle
(Dytiscus marginalis)

Size:
2 to 70 mm
In length



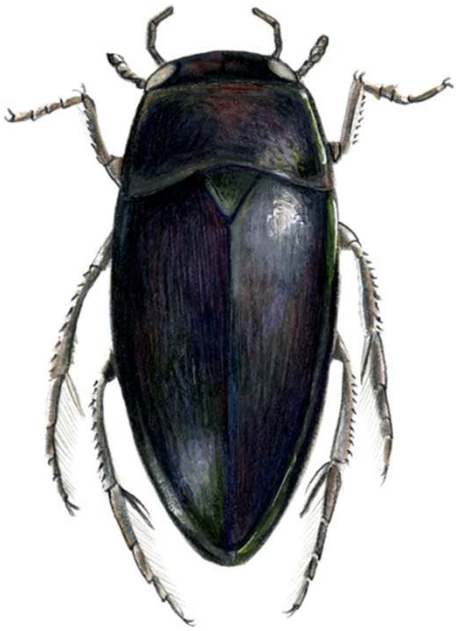
Larvae:
Water Tiger

Size:
3 to 25 mm
In length



Adult

Water Scavenger Beetle
(*Hydrophilus triangularis*)



Size:
1 to 40 mm in length

Giant Water Bug (*Lethocerus americanus*)

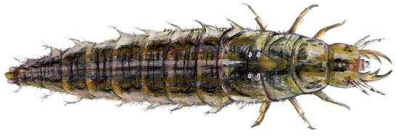
- Belong to a large group of insects called heteroptera, or "true" bugs.
- They range in size from 2-11cm in length. One of Canada's largest insect.
- They live in lakes and ponds. Are very fast swimmers.
- They prefer habitats with aquatic vegetation where they can grab hold of a plant near the surface, and stick their short breathing tube out of the water to allow them to breath while waiting for prey.
- They are good fliers. This enables them to fly from pond to pond to look for better habitats (You may have even found them in your schoolyard!)
- They hunt small fish, tadpoles, snails, insects and other invertebrates. They catch their prey with their strong front legs. They have a mouth adapted for piercing and sucking, which they use to inject a toxin into their prey to kill it. The soft internal organs of the prey are then digested by the toxin and sucked up by the giant water bug with its mouthparts.
- They are also called "toe biters" because they can deliver a nasty bit. HANDLE CAREFULLY!
- In some species the males carry the eggs on their backs until they hatch (Hatch in ~6 days)
- Giant Water Bugs are a delicacy in some Asian countries. YUM!!

Water Boatman *(Arctocorixa interrupta)*

- Belong to a large group of insects called heteroptera, or "true" bugs.
- Somewhat flattened and elongate d in shape.
- Hind legs are oar-shaped which allows them to swim.
- Small insect: Adults range in length from 3mm - 1.5cm
- Are usually dull colored and often mottled.
- Often confused with backswimmers because they have the same general shape. The best way to tell them apart is by watching them swim: Backswimmers swim upside down in the water.
- Lack gills and breath air when at the surface of the water or they carry an air bubble with them and breath oxygen from the bubble while swimming.
- Feed on algae and decaying plant matter. but will eat small aquatic organisms.

Water Scavenger Beetle (*Hydrophilus triangularis*)

- Habitat: Ponds & slow moving streams.
- Can be 1 to 4 cm in length.
- They have an elongated-oval shape. Black to dark brown in colour. Triangle groove on back where wings connect.
- They obtain air by raising the head slightly above the surface and collecting a film of air over the under side of their body.
- Mainly feed on decaying animal and plant matter. Sometimes feeding on live plants and insects.
- Larvae are carnivorous, feeding on other small animals.



Size:
2-60 mm in length

Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America.* Virginia: The MacDonald & Woodward Publishing Company.

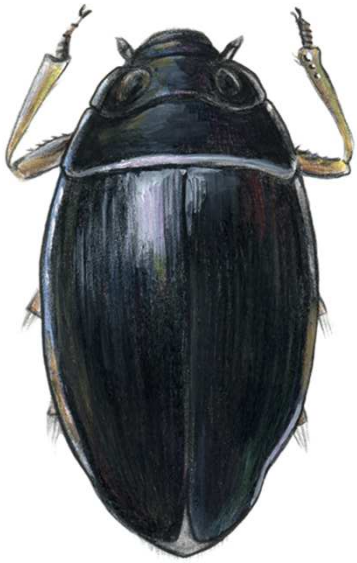
Predaceous Diving Beetle (*Dytiscus marginalis*)

- Habitat: Lakes & ponds.
- Adults brownish-black colour with yellowish band around edge of wings. Larvae brown-yellow in colour. Have a long and oval shape.
- 3mm to 2.5cm in length.
- Can be confused with Water Scavenger Beetles (lack bands on wings).
- Adults and larvae are carnivorous, feeding on other insects and small animals.
- Lack gills and trap air bubbles under their wings to breath while swimming.
- Good fliers and often attracted to lights.
- Larvae called Water Tigers: Aggressive carnivores; inject chemical into prey that digests organs of the prey into a liquid. To feed, water tigers then suck up the digested liquid through tubes; kind of the same way humans would drink a milkshake! Yum!
- Larvae can bite. HANDLE CAREFULLY!

Illustrations courtesy of Gina Mikel:
www.scientificillustrator.com

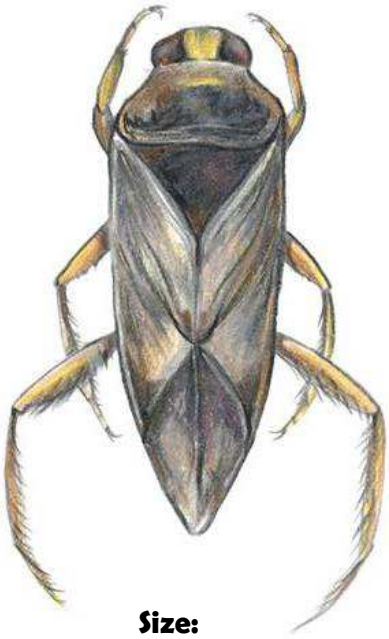
Rideau Valley Conservation Authority

Whirligig Beetle
(Dineutes americanus)



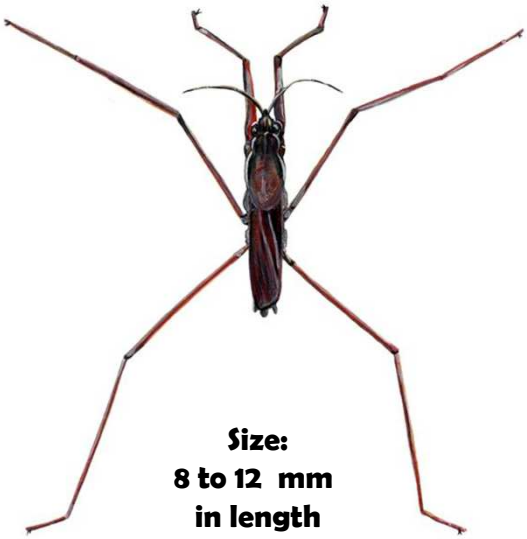
Size:
3 to 16 mm in length

Backswimmer
(Notonecta undulata)



Size:
4 to 17 mm
in length

Water Strider
(*Gerris marginatus*)

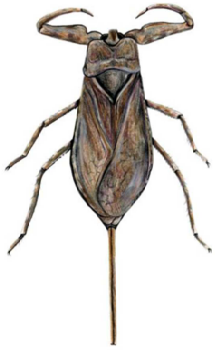


Size:
8 to 12 mm
in length

Baxter Conservation Area ID Cards

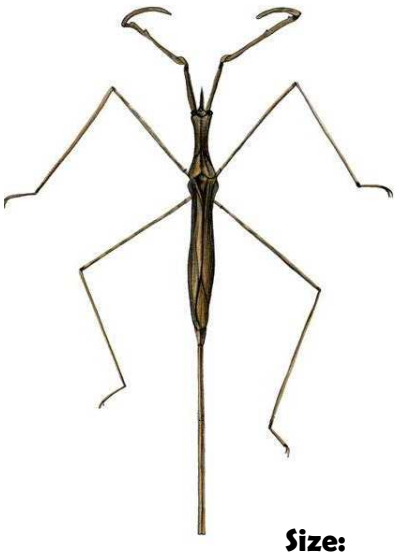
Water Scorpions

Nepa cinerea



Size:
20 to 30 mm
in length

Ranatra fusca

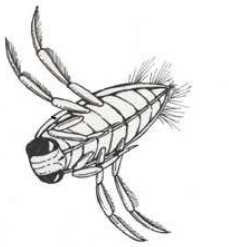


Size:
14 to 45mm
in length

Rideau Valley Conservation Authority

Backswimmer *(Notonecta undulata)*

- Backswimmers spend most of their time swimming on their backs. Look like they are swimming backwards too.
- 4 to 17 mm in length
- Lakes and ponds with lots of vegetation are preferred habitats.
- Carnivores: Feed on other insects, snails, small fish and tadpoles.
- A "true bug": Have a mouthpart for sucking liquid. Suck body fluids out of prey to eat.
- Breathe by taking a air bubble underwater with them.
- Strong fliers.
- Somewhat resemble water boatman.
- Can inflict a painful bite. HANDLE CAREFULLY!



Whirligig Beetle *(Dineutes americanus)*

- 3 to 16 mm in length
- Black, oval and flattened shape.
- Found in streams, river, ponds and lakes near the waters edge.
- Swim in dense groups on surface of the water. Get their name from their habit of swimming in circles. Very fast swimmers.
- Have two pairs of eyes: One pair for looking up and one pair for looking down.
- Adults carry a bubble of oxygen with them when they swim so they can breathe. You can often spot the air bubble.
- Carnivores: Feed on small insects, worms and larvae.
- Larvae rarely seen (Have gills for breathing).

Water Scorpions

- Water scorpions are not really scorpions, but insects. Their name comes from their front legs which look similar to the 'pinchers' of scorpions.
- They also have a tube which looks like the stinging tail of a real scorpion. It is not a stinging tale. It is used to obtain air from the water surface, much like a snorkel.
- There are two different species found here at Baxter.
- A "true bug": Have a mouthpart for sucking liquid.
- Prefer ponds, wetlands and shallow streams.
- Attach to plants where they lie in wait and stalk their prey.
- Carnivore: Feed on small insects, crustaceans, fish and tadpoles.

Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America.* Virginia: The MacDonald & Woodward Publishing Company.

Water Strider (*Gerris marginatus*)

- 3 to 18 mm in length
- Have a long and slender body with long thin legs.
- Dark gray, black or brownish in colour.
- Found moving on the surface of the water of streams, lakes, ponds, marshes and ditches during spring and summer.
- They have special hairs on the end of their legs that allow them to stay on the surface of the water as if they were 'skating' on a frozen pond.
- Occasionally dive, but spend most of their time on the surface of the water.
- Feed on smaller insects, both dead and alive.
- Overwinter as adults.

Illustrations courtesy of Gina Mikel: www.scientificillustrator.com

Snails (Various Species)

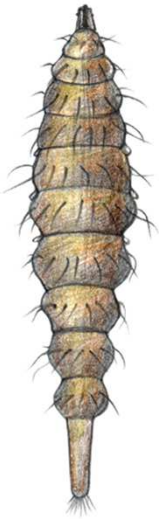
Size: 10 to 60mm

Fishing Spider (*Dolomedes triton*)

Size: 9 to 13mm

Soldier Fly Larvae (*Odontomyia sp.*)

Size:
5 to 35mm



Water Mite

Size: 1 to 7 mm
In length

Baxter Conservation Area
ID Cards

Rideau Valley Conservation Authority

Fishing Spider
(*Dolomedes triton)*

- Lives on or near water; permanent ponds, lakes, stream pools.
- Can dive and stay under for long periods of time.
- Hang head down on vegetation just above waterline or hunt on the water for insects.
- Carnivore: feeds on insects, tadpoles and small fish.
- Greenish brown with distinct white lines and spots, coloured bands on back.

Snails
(Various Species)

- Herbivore
- Distinct head with 2 tentacles that can be extended or retracted, each tentacle has an eye at the end.
- Moves about on thick, muscular foot on underside of body which is housed in a single, coiled shell.
- Two types of snails common at Baxter: Pond Snail and Ramshorn Snail.

Water Mite
(Order: *Acariformes*)

- Very common in ponds, lake, swamps, marshes and bogs where the water is shallow and there is vegetation. Some live in running water.
- Appear as tiny red dots moving through the water.
- Look like tiny fat spiders; related to spiders.
- Usually brightly coloured: green, blue, orange, yellow, or red; some are dull browns or blacks.
- Diet includes larvae of small aquatic insects.

Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America.* Virginia: The MacDonald & Woodward Publishing Company.

Soldier Fly
(Stratiomyia sp.)

- Many different species, only about half of them live partly in water.
- Aquatic species found at the edges of shallow ponds and marshes.
- Larva segmented with tough skin, looks lifeless.
- Larvae feeds on decaying matter and algae.
- Herbivore, carnivore and scavenger
- Adults look like bees, feed on nectar.

Illustrations courtesy of Gina Mikel: www.scientificillustrator.com

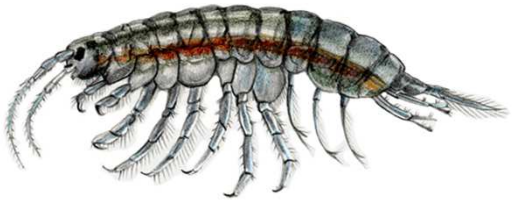
Leeches
(Various Species)

Size: 4 to 450 mm, fully extended.

Fairy Shrimp
(Brachinecta paludosa)

Size: 10 to 25 mm

Scud
(Hyalella azetca)



Size: 5 to 20mm

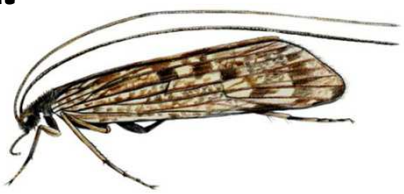
Baxter Conservation Area ID Cards

Caddisfly
(*Various Species*)

Larvae

Size: Up to 30mm

Adult



Size: 18 to 50mm

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Fairy Shrimp
(Brachinecta paludosa)

- Omnivore
- 11 pairs of flattened legs
- Female has egg sack behind her gill legs
- Swims on its back.
- Feed on algae bacteria and bits of debris

Leeches
(Various Species)

- Carnivore and scavenger.
- Flat, segmented worm.
- Moves by "looping" – alternately attaching the mouth and tail sucker to the surface.
- Feeds on blood; called "bloodsucker".
- Found in ponds, lakes, marshes and slow areas of streams and rivers.
- Not all species of leeches feed on blood, some scavenge on dead animal material.

Caddisfly
(*Various Species*)

- Herbivore
- Larvae found in ponds, lakes or streams.
- Soft-bodied larvae crawl on pond floor.
- Creates a case of twigs, shells, leaves, or stones cemented together with saliva that they carry around with them.
- Adult sucks plant sap; live for only a few days.

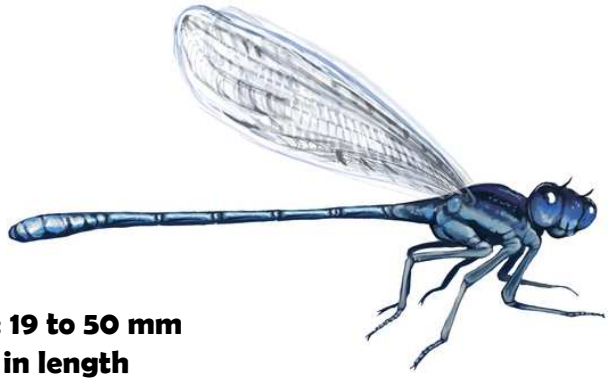
Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America.* Virginia: The MacDonald & Woodward Publishing Company.

Scud
(Hyalella azetca)

- Scavenger
- Also called "Side-swimmer" because they swim on their sides.
- Body flattened sideways.
- Live on bottom or among submerged objects.
- Creamy, translucent, light gray or brown in colours.
- There are 150 species in North America.

Illustrations courtesy of Gina Mikel: www.scientificillustrator.com

Damselfly *(Various Species)*

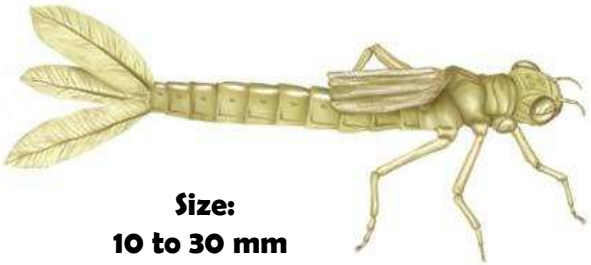


Size: 19 to 50 mm in length

Dragonfly *(Various Species)*

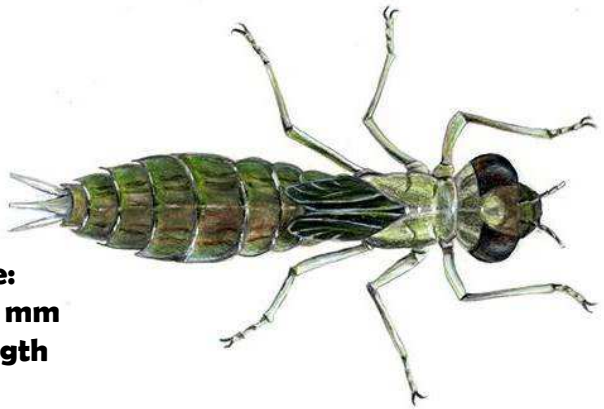
Size: 25 to 100 mm in length

Damselfly Larvae (Nymph) *(Various Species)*



Size: 10 to 30 mm in length

Dragonfly Larvae (Nymph) *(Various Species)*



Size: 8 to 42 mm in length

Baxter Conservation Area ID Cards

Dragonfly *(Suborder: Epiprocta)*

- Adult: Large, heavy-bodied; usually hold wings spread open when they land (pictured on front).
- Nymph: Thick body, lack long gills (as found on damselfly larvae).
- Carnivorous: Nymph (larvae) eat other insects & larvae (including mosquito larvae) in the water; Adults are most famous for eating large numbers of mosquitoes. Sweep up insects with their legs while flying.
- Adults also called "Mosquito Hawks".
- Eggs are placed in aquatic plants. Some species complete their life cycle from egg to adult in 3 months, others can take up to 5 years. Transformation to the adult occurs after the larva leaves the water and sheds its skin. Adults must dry off before they can fly. Adults live for a few weeks and usually remain near water.
- Related to Damselfly.

Illustrations courtesy of Gina Mikel:
www.scientificillustrator.com

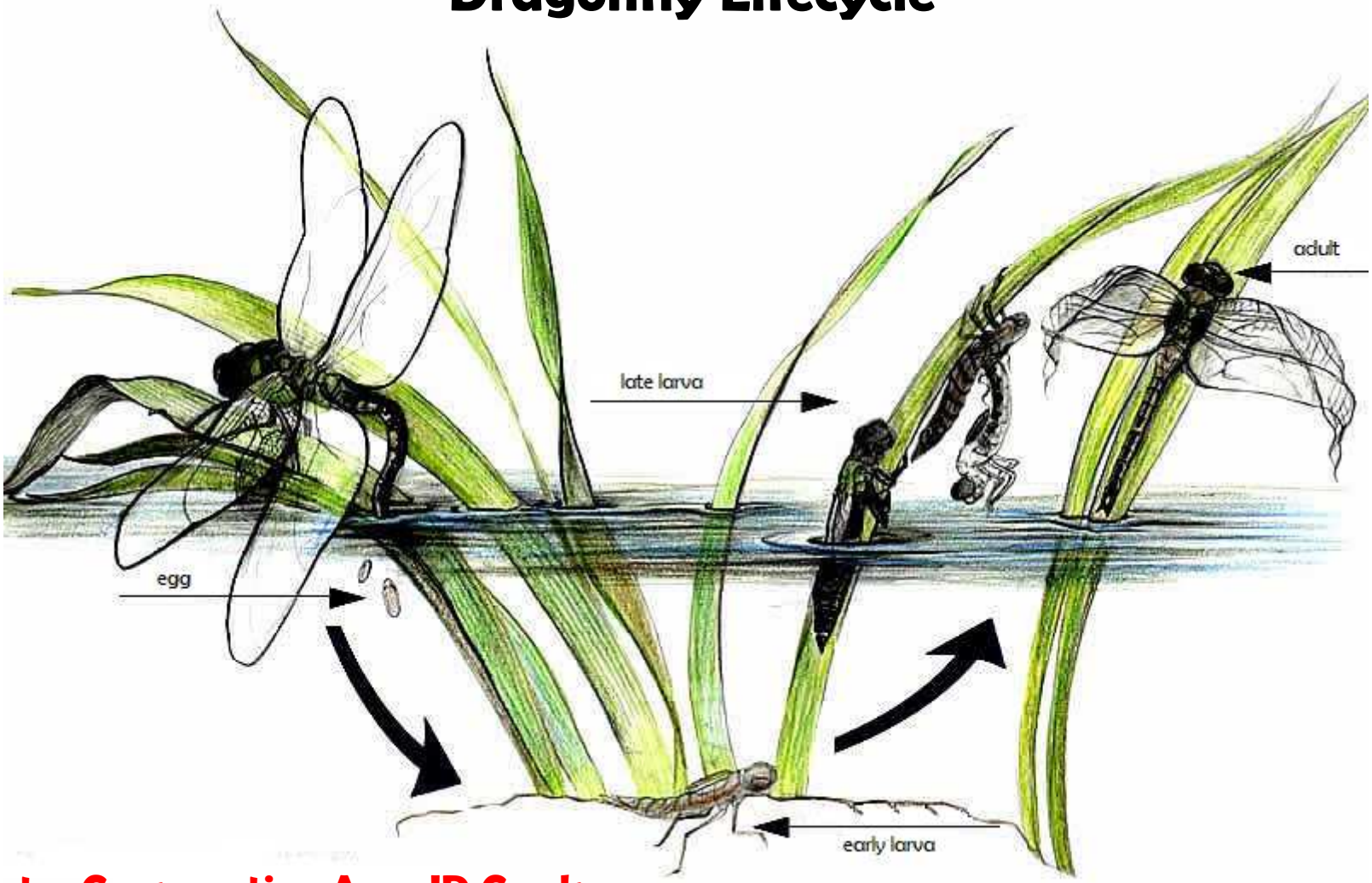
Damselfly *(Suborder: Zygoptera)*

- Adult: Thin-bodied with 2 pairs of long, narrow wings.
- Nymph: Thin-bodied with 3 gills forming a "tail".
- Carnivorous: Nymph (larvae) eat small aquatic insects and worms; Adults sweep up small, flying insects with their legs.
- Adults live on land, nymphs live in the water.
- Nymphs can be seen climbing in plants but usually hide in the mud waiting for prey to come near them.
- Eggs are placed in aquatic plants. Although some species may spend over 3 years as larvae, larval stages of Canadian species usually last only one year. Transformation to the adult occurs after the larva leaves the water. Adults live for a few weeks and usually remain near water.
- Relative of the dragonfly.

Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America.* Virginia: The MacDonald & Woodward Publishing Company.

Rideau Valley Conservation Authority

Dragonfly Lifecycle



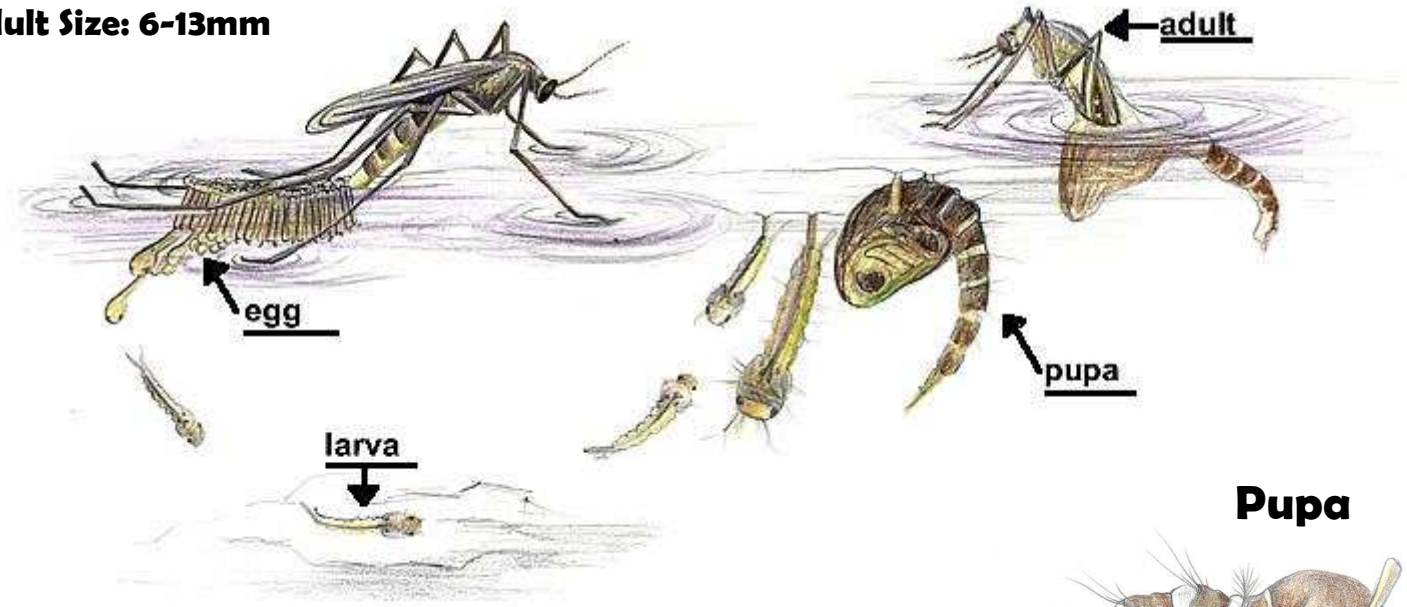
Baxter Conservation Area ID Cards

Illustrations courtesy of Gina Mikel: www.scientificillustrator.com

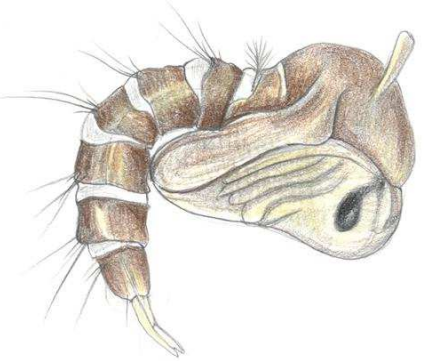
THE MOSQUITO LIFE CYCLE

Rideau Valley Conservation Authority

Adult Size: 6-13mm



Pupa



Larva

Larvae & Pupae Size: Up to 8mm

Baxter Conservation Area ID Cards

Mosquitoes (Family Culicidae)

- There are 166 species in North America.
- Mosquitoes go through four stages: egg, larva, pupa and adult
- Larvae is the "baby" form & pupae is the "teenage" form.
- Larvae & pupae can live in almost any type of still-water habitat.
- Common habitats include: woodland pools, marshes, swamps, ponds and lakes.
- In water, larvae and pupae are very active: called wrigglers and tumblers because they twist and squirm in order to move through the water.
- Larvae and pupae stay near water surface for feeding and breathing.
- Larvae feed on algae, bacteria and fine particles floating in the water.
- Mosquitoes can complete their entire life cycle in a few days or in up to two weeks.
- Adult female mosquitoes require blood for the eggs to develop. Only females bite.
- *Random fact*: It would take about 1,200,000 adult mosquito bites to totally drain the blood from an adult human!

- Thankfully, adult dragonflies love feeding on mosquitoes!!!! Adult dragonflies are also called mosquito hawks.

Illustrations courtesy of Gina Mikel: www.scientificillustrator.com

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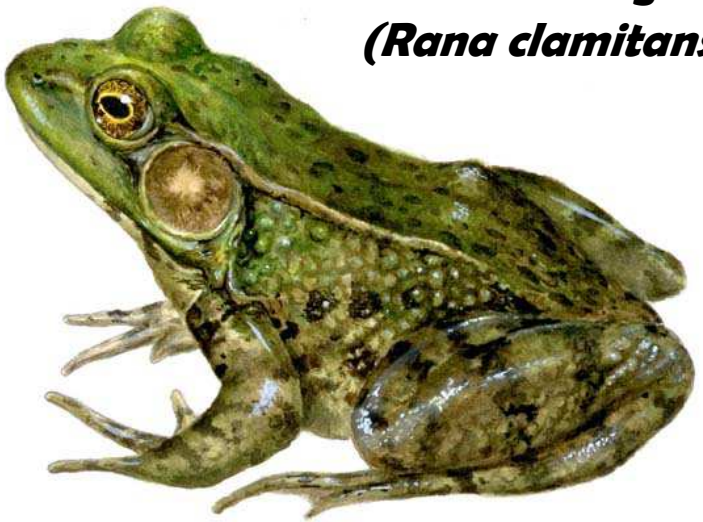
FROGS

Green Frog Tadpole

Green Frog
(*Rana clamitans*)



Bullfrog Tadpole

Bullfrog
(*Rana catesbeiana*)

Leopard Frog Tadpole

Leopard Frog
(*Rana pipiens*)

Baxter Conservation Area ID Cards

Illustrations: http://www.torontozoo.com/adoptapond/index.asp

Leopard Frog (*Rana pipiens*)

- Medium-sized, 5-9 cm
- Green to light brown in colour with dark brown or black roundish spots, outlined in yellow, scattered on back and side.
- White line on upper lip is usually quite noticeable.
- Found in lakes, grassy ponds, marshes and wet meadows.
- The call of the Leopard Frog is sometimes compared to the sound of wet hands rubbing across a wet balloon.
- Females arrive at the breeding ponds approximately one week after the males start calling.
- Eggs are laid a week later and are attached to submerged vegetation or are occasionally laid on the bottom of the pond.
- After hatching, the tadpoles take between 10 to 13 weeks to transform into froglets. By September the froglets have doubled in weight and are about 5 cm long.
- They will hibernate in deep pools for the winter, and can sometimes be seen on the surface mud under the water.
- Lay 4,000 to 6,000 eggs.

Bullfrog (*Rana catesbeiana)*

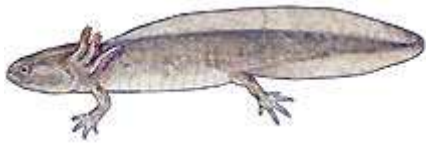
- Ontario's largest frog at 10-15cm.
- Green, olive or brown
- Dorsolateral fold not present
- Fold of skin extends from eye around the eardrum to shoulder.
- Male has bright yellow throat and eardrum (tympanum) twice the size of the eye.
- Young bullfrogs have small black spots on their green backs.
- Bullfrogs prefer the shorelines of lakes, ponds, and the mouths of slow-moving rivers. Deep, permanent water is necessary because the tadpole spends the winter in the water.
- Although active in May, male bullfrogs do not
- establish their shoreline territories until June or July.
- Call sounds like: "Jug O'Rum", "Jug O'Rum", "Jug O'Rum".
- Males are very territorial.
- Eggs are laid in large floating masses.
- Tadpoles take 1 to 3 years to mature.
- Lay 8,000 to 10,000 eggs.

Green Frog (*Rana clamitans)*

- Relatively large, 6-9 cm
- Greenish with dark brown spots over the back.
- Bright green area above the upper lip is usually visible as are black bands across the hind legs.
- The green frog can be distinguished from the bullfrog by looking for the ridges running down each side of the green frog's back.
- Male green frogs have yellow throats, particularly during breeding season.
- Green frogs tolerate a wide range of habitats and may be found in any permanent supply of water. They typically prefers rich, weedy, warm ponds and lakes, slow-moving rivers, farm ponds and shallow marshes.
- They emerge from hibernation in early April, but do not begin to call or breed until June or July.
- The male's call can be compared to the "twang" of a single banjo string being plucked.
- If competing males ignore the warning calls, a defending male may splash, chase, or wrestle with his competitors.
- Tadpoles spend the winter in the water and transform the following summer. The tadpoles may grow to about 6-8 cm long, but during transformation the froglets may end up smaller than they were as tadpoles.

Salamanders/Newts

Adult



Larvae

Spotted Salamander
(*Ambystoma maculatum*)

Adult

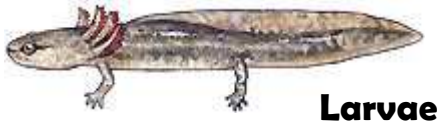
Larvae

Red-spotted Newt
(*Notophthalmus viridescens viridescens*)

Adult with eggs

Eastern Red-backed Salamander
(*Plethodon cinereus*)

Adult



Larvae

Blue-spotted Salamander
(*Ambystoma laterale*)

Baxter Conservation Area ID Cards

Illustrations: http://www.torontozoo.com/adoptapond/index.asp

Spotted Salamander
(*Ambystoma maculatum*)

●Adult: 15-18 cm.
● Adults are easily identified by the yellow/orange spots scattered over its black body.
● Larvae: 40-65 mm
● Larvae: Olive to brown with a dull yellow to cream belly; may have dark dorsal spots.
● Eggs: large, round cluster with 40-120 eggs. Egg mass may appear cloudy-white or transparent green; attached to submerged branches.
● Habitat: ponds and temporary woodland pools
● Spotted salamanders move to breeding ponds during the first warm spring rains in March and early April.
● Adult spotted salamanders usually live in underground tunnels throughout the summer. Nicknamed "*Mole Salamanders*"

Eastern Red-backed Salamander
(*Plethodon cinereus*)

● Adults: 5-10 cm.
● Dark grey with red stripe down back and tail.
● Don't have lungs and breathe completely through their skin.
● Habitat: Woodlands, wooded ravines, and river valleys.
● Completely terrestrial salamander.
● Eggs: Laid terrestrially in clusters hidden under rocks or attached to cavities in logs or stumps.
● No free swimming larva stage. Larva develops within egg and hatches as tiny replica of adult.
● Feed on spiders and small insects.
● They mark their territory using a secretion from glands under their chin. These chemicals act as warnings to other salamanders that they are trespassing and may be attacked.

Red-spotted Newt
(*Notophthalmus viridescens viridescens*)

● Adults: 7-10 cm.
● Adults are yellowish to greenish brown scattered with black dots, and a series of larger black-bordered red spots, on the back.
● Larvae: 35-75mm.
● Larvae: olive brown with black speckling; dark brown stripe with flecks extends from snout through eye; tapered snout.
● All life history stages are toxic to most predators; the terrestrial red eft stage can be 10 times more toxic than the larvae, adults, and eggs
● Eggs: anchored to or wrapped in submerged vegetation; often laid individually.
● Life cycle: aquatic larvae, terrestrial efts, and aquatic adult.
● Habitat: ponds, pools, slow moving water with lots of vegetation. Efts found on moist forest floors.

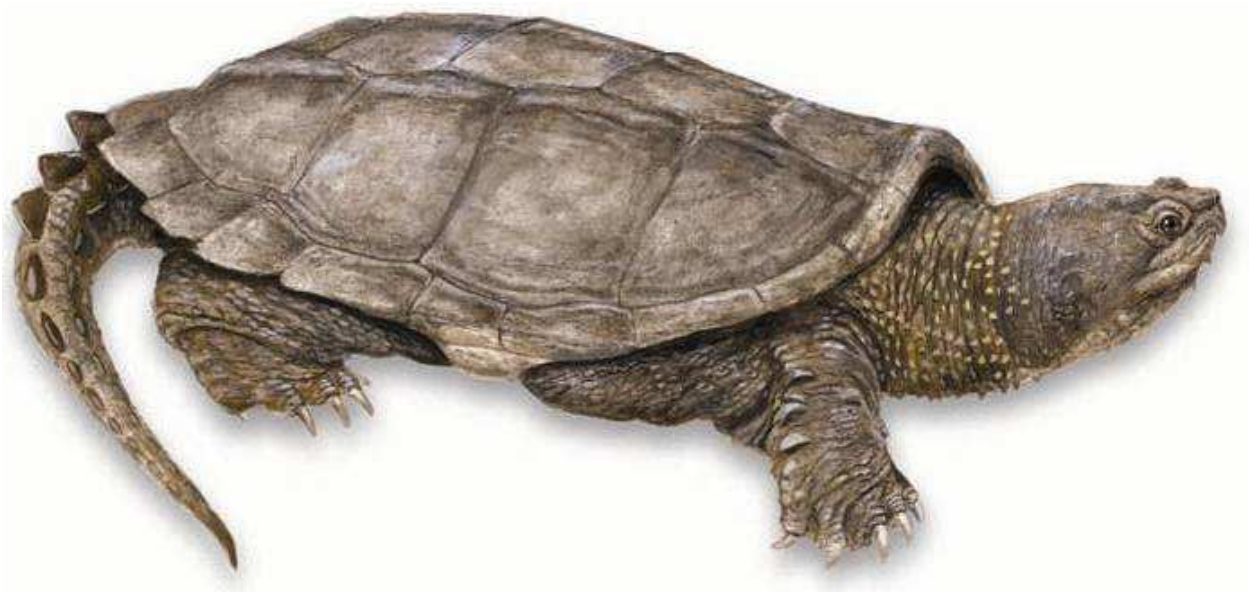
Blue-spotted Salamander
(*Ambystoma laterale*)

● Adult 7-13 cm.
● Adults are black with many bluish spots.
● Adults are carnivorous: feeding on insects and earthworms.
● Breeding often occurs in the spring before the ice has lifted in ponds, forest pools and ditches.
● Mainly seen when they come to a pond to breed. Otherwise, they are very secretive and rarely seen. After breeding season, they can be found in the forest under rocks & logs.
● Larvae: 45-55 mm.
● Olive-brown colour; similar to other salamander larval stages.
● Larvae found in ponds, marshes and ditches.
● Eggs: 1-12 laid in mass attached to vegetation.

Resource: http://www.torontozoo.com/adoptapond/index.asp

TURTLES

Midland Painted Turtle (*Chrysemys picta marginata*)



Common Snapping Turtle (*Chelydra serpentina*)

Baxter Conservation Area ID Cards

Common Snapping Turtle (*Chelydra serpentina)*

- 20.3-36 cm; record 49.4cm
- 4.5-16kg; record 32kg snapping turtle once lived at Toronto Zoo
- Carapace is light brown to black
- Young turtles have three longitudinal keels; older turtles almost smooth
- Plastron is yellowish, small and cross-shaped; legs and skin not well protected
- Large head, two barbels on neck
- Head, limbs and tail are brown
- Tail is same length or longer than carapace with "dinosaur-like" triangular scales
projecting from the upper side.
- Only aggressive when threatened on land
- Will swim away from danger and people when in the water
- Lays 20-40 round, ping-pong ball-like eggs

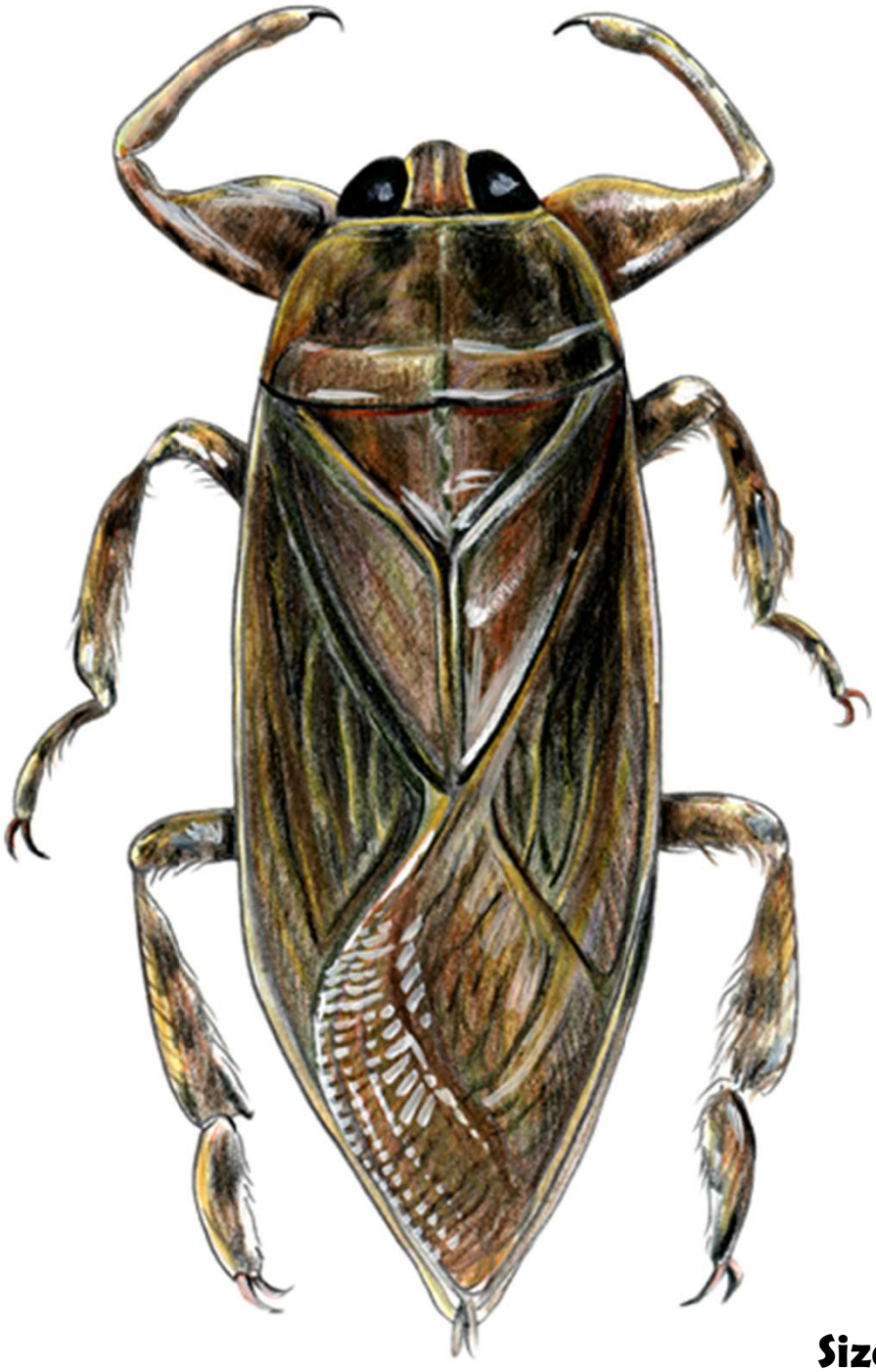
Midland Painted Turtle (*Chrysemys picta marginata)*

- Most common turtle seen at Baxter
- 11.5-14cm; record 19.5cm
- Females larger than males
- Smooth, olive to brownish-grey carapace with orange-red margins
- Yellow plastron with dark central blotch
- Neck, legs and tail striped with red and yellow; yellow blotch behind each eye
- Males have very long nails on front feet
- Often seen basking on logs
- Lays 3-14 oval, white, smooth-shelled eggs

Illustrations/Information: http://www.torontozoo.com/adoptapond/index.asp

Giant Water Bug
(*Lethocerus americanus*)

Rideau Valley Conservation Authority



Size:
25 to 100mm

Illustrations courtesy of Gina Mikel:
www.scientificillustrator.com

Baxter Conservation Area ID Cards

Giant Water Bug (*Lethocerus americanus*)

- They belong to a large group of insects called heteroptera, or "true" bugs.
- One of Canada's largest insect.
- Giant water bugs live in lakes and ponds and are very fast swimmers.
- They prefer habitats with aquatic vegetation where they can grab hold of a plant near the surface, and stick their short breathing tube out of the water to allow them to breath while waiting for prey.
- Giant water bugs are good fliers. This enables them to fly from pond to pond to look for better habitats (You may have even found them in your schoolyard!)
- The giant water bug hunts small fish, tadpoles, snails, insects and other invertebrates. They catch their prey with their strong front legs. They have a mouth adapted for piercing and sucking, which they use to inject a toxin into their prey to kill it. The soft internal organs of the prey are then digested by the toxin and sucked up by the giant water bug with its mouthparts.
- They are also called "toe biters" because they can deliver a nasty bit. HANDLE CAREFULLY!
- In some species the males carry the eggs on their backs until they hatch (Hatch in ~6 days) (Pictured Below)
- Giant Water Bugs are a delicacy in some Asian countries. YUM!!

Photo:
Male Giant Water Bug with eggs

Voshell, J.R. 2002. *A Guide to Common Freshwater Invertebrates of North America.* Virginia: The MacDonald & Woodward Publishing Company.