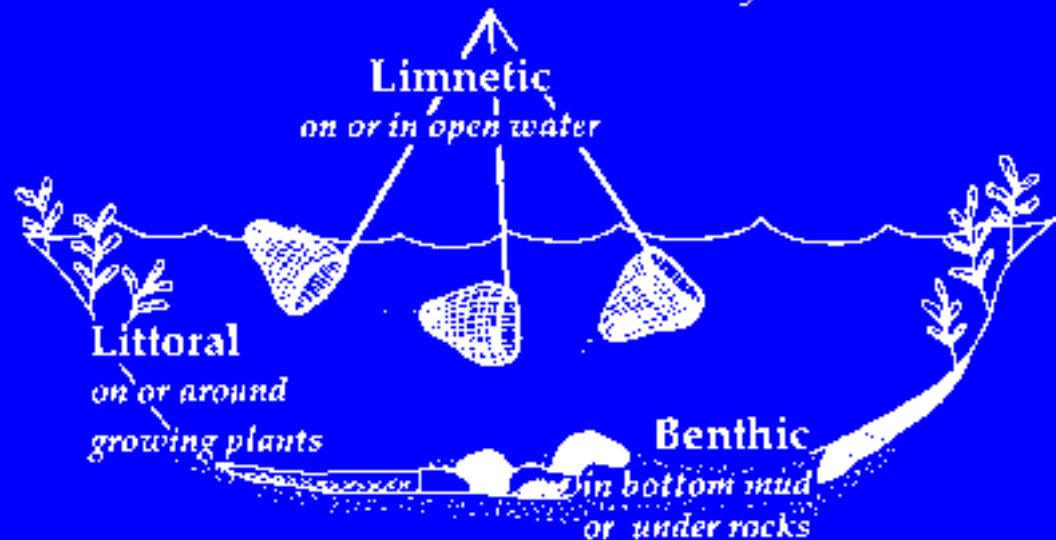


## COLLECTING TIPS

### Suggested Tools:

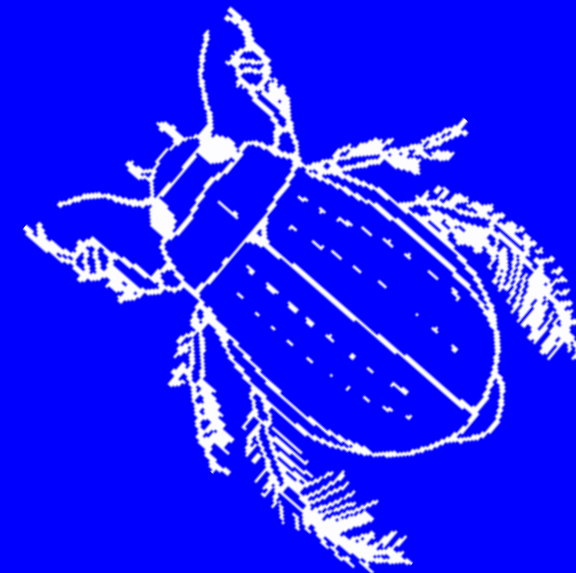
dipnets/sieves - to collect animals from the water  
water basin/ice cube tray - to hold what you catch  
large eye droppers - to select specific animals  
hand lens/magnifying boxes - to examine animals closely



Handle the animals gently. When you are finished, gently release all animals where you found them.


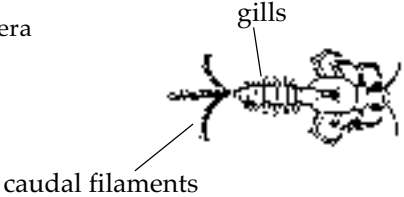
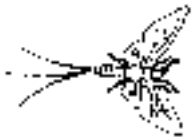


## PARKS AND PROTECTED AREAS

# AQUATIC ANIMAL IDENTIFICATION GUIDE



*Match pictures and descriptions in the guide to the animals that you have found.*






# Pond Life Identification Guide - Kananaskis Country

Insect	Where Found
<p><b>SPRINGTAIL</b> Order Collembola</p> <p>actual size 2-6 mm</p> 	<p>Found on the shorelines of ponds. These insects are not aquatic.</p>
<p><b>MAYFLY nymph</b> Order Ephemeroptera</p> <p>actual size 15 mm</p> 	<p>Found on the bottom of ponds and creeks clinging to rocks.</p>
<p><b>MAYFLY adult</b></p> <p>actual size 5-15 mm</p> 	<p>Often seen in large swarms. The insects in the swarm fly up and down in unison. Look for their gently upturned wings held vertically and 2-3 long thread-like filaments extending from the abdomens.</p>
<p><b>DRAGONFLY nymph</b> Order Odonata</p> <p>actual size up to 50 mm</p> 	<p>Found crawling about on the bottoms of ponds or on submerged plants and rocks.</p>
<p><b>DRAGONFLY adult</b></p> <p>actual size 40-80 mm</p> 	<p>Usually seen flying or resting on a plant or log near a pond.</p>

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
<p>Fairy shrimp swim on their backs using their legs to propel them.</p>	<p>They eat algae, bacteria, and small microscopic animals.</p>	<p>Fairy shrimp are eaten by small fish and carnivorous insects.</p>
<p>They swim with jerky movements using an enlarged second pair of antennae to propel themselves.</p>	<p>Water fleas eat algae, microscopic animals, and organic debris.</p>	<p>They are eaten by small fish and carnivorous insects.</p>
<p>Copepods use their legs and first antennae to propel themselves through the water.</p>	<p>Their mouth parts seize and bite microscopic plants, animals, and debris.</p>	<p>Look for the egg sacs which may be attached to the lower body of the copepod.</p>
<p>They swim using their legs which move in a blur.</p>	<p>They browse on the film which covers microscopic plants, animals, and organic debris. They are also scavengers. They feed by holding their food with their front legs and chewing it.</p>	<p>Sideswimmers are eaten by trout and carnivorous insects. Their bodies are flattened sideways. They require a good supply of oxygen in the water.</p>
<p>Water mites swim through the water, coming to the surface to get air.</p>	<p>They feed on small insects, worms, dead plants, and animals. Their larvae are parasitic.</p>	<p>Water mites feed by grasping the body of their prey, piercing the body and injecting digestive juices. They then suck up the semi-digested material of the prey. Water mites are in turn eaten by carnivorous insects.</p>

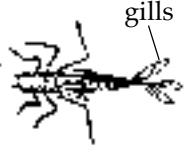

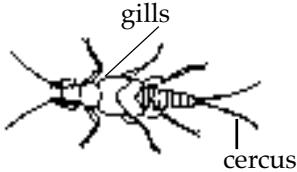


# Pond Life Identification Guide - Kananaskis Country

Animal	Where Found
<p><b>FAIRY SHRIMP</b> Class Crustacea Order Anostraca actual size 10-17 mm</p> 	<p>Fairy shrimp are characteristic inhabitants of temporary ponds and pools, especially during the spring and summer.</p>
<p><b>WATER FLEA or <i>Daphnia</i></b> Class Crustacea Order Cladocera  actual size 0.2-3 mm</p> 	<p>Water fleas are found at all depths of a pond.</p>
<p><b>COPEPOD</b> Class Crustacea Subclass Copepoda  actual size 0.3 mm</p> 	<p>Found in both shallow and open water of ponds.</p>
<p><b>SIDESWIMMER or SCUD</b> Class Crustacea Order Amphipoda  actual size 5-20 mm</p> 	<p>Sideswimmers are found close to the bottom of lakes and ponds. They avoid light.</p>
<p><b>MITE</b> Class Arachnida Order Acari  actual size 2.5-5.0 mm</p> 	<p>Mites are found at all depths of the pond. They may congregate amongst the floating plankton or in the wet vegetation along the shore. Water mites are often red.</p>

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
<p>Springtails jump using a springing device on their abdomens.</p>	<p>Algae, plants and dead plants and animals.</p>	<p>Springtails are also called snowfleas because they are commonly seen in winter leaping about on the snow where they eat pollen, mold, and decaying vegetation.</p>
<p>Varies. Some crawl, some burrow and others swim with undulating motions.</p>	<p>Generally feed on plant material but may also eat tiny animals.</p>	<p>Mayfly nymphs have 2-3 caudal filaments at the end of their abdomens. These filaments are thread-like and are not gills. Mayflies are eaten by trout, dragonfly and stonefly nymphs and predacious diving beetles.</p>
<p>Fly.</p>	<p>During the few days the adults live, they do not eat.</p>	<p>Large numbers of adults often emerge at once and form large swarms. If they fall onto the pond surface, they may be eaten by trout and water striders.</p>
<p>They mostly crawl about with their legs but they can also take water in through their back-ends (anus) and expel it again for a quick escape.</p>	<p>Dragonfly nymphs eat other aquatic insects, especially mosquitoes, mayflies and even small fish. They are voracious predators.</p>	<p>Eaten by trout and birds. Dragonfly nymphs have no tails.</p>
<p>Dragonflies appear to fly like helicopters. They can maneuver quickly, making them agile hunters.</p>	<p>They eat other flying insects, catching their prey with their feet.</p>	<p>Dragonflies hold their wings out when at rest. They mate in flight. They are eaten by birds and bats.</p>

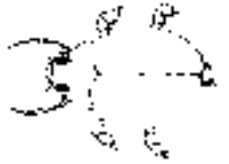




# Pond Life Identification Guide - Kananaskis Country

Insect		Where Found
<p><b>DAMSELFLY nymph</b> Order Odonata</p> <p>actual size 30 mm</p>		<p>Found crawling about on underwater surfaces, especially plants.</p>
<p><b>DAMSELFLY adult</b></p> <p>actual size 30-40 mm</p>		<p>Damselflies can be seen flying or resting near ponds.</p>
<p><b>STONEFLY nymph</b> Order Plecoptera</p> <p>actual size up to 40 mm</p>		<p>The nymphs are found under stones, leaves and debris at the bottoms of moving, unpolluted creeks and rivers. They are found only where there is an abundance of oxygen in the water.</p>
<p><b>STONEFLY adult</b></p> <p>actual size 15-40 mm</p>		<p>They are poor fliers and are usually found resting on objects along the shores of streams.</p>
<p><b>WATER STRIDER</b> Order Hemiptera Family Gerridae</p> <p>actual size 10-15 mm</p>		<p>Found on the surface of the pond where they are supported by water tension.</p>

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
<p>The adults use their fan shaped middle or hind legs for swimming. They are easy to identify because of their whirling motion on the surface of the water. They can be found in large numbers.</p>	<p>The adults are scavengers, eating dead plant and animal material.</p>	<p>The whirligig beetles take air bubbles below the surface as a supply of oxygen. The beetles have two sets of eyes which enable them to see above and below the water at the same time.</p>
<p>Glide along rocks or sticks using the hair-like cilia on their undersides.</p>	<p>Flatworms eat small animals, living or dead.</p>	<p>They have light-sensitive eye-spots on their heads. Flatworms are well known for their ability to regenerate or grow back severed parts.</p>
<p>The females are inactive. Males swim or crawl with whip-like motions of their bodies.</p>	<p>Adults do not eat.</p>	<p>The young are parasites on beetles, crickets, and grasshoppers. They are called horsehair worms because their thin bodies look like horse hairs which have come to life.</p>
<p>They use their muscular foot under their bodies for crawling. They secrete a slimy film which seems to help them move.</p>	<p>Snails feed on live and dead plant materials. They feed by using their file-like tongues called a radula to shred food.</p>	<p>Snails are eaten by fish, birds, and leeches.</p>
<p>Leeches move by "looping" -alternately attaching their mouth and tail suckers to the surface. They swim by gracefully undulating.</p>	<p>They feed by piercing their prey and sucking their blood. They prey mostly on fish. The leeches in this area do not feed on humans.</p>	<p>Leeches, like earthworms, are hermaphroditic; that is, they are both male and female at the same time.</p>



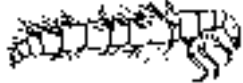
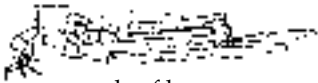

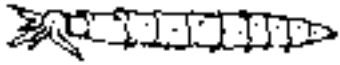
# Pond Life Identification Guide - Kananaskis Country

Insect (or other animal)	Where Found
<p><b>WHIRLIGIG BEETLE adult</b> actual size 3-7 mm</p> 	<p>The adults are usually found at the surface of the pond or diving beneath the surface.</p>
<p><b>FLATWORM</b> Phylum Platyhelminthes Class Turbellaria actual size 20-25 mm</p> 	<p>Found under stones, leaves, and other submerged objects. They avoid light.</p>
<p><b>HORSEHAIR WORM</b> Phylum Aschelminthes Class Nematomorpha Order Gordioidea actual size up to 300 mm</p> 	<p>Found in ponds, streams, and puddles.</p>
<p><b>SNAIL</b> Phylum Mollusca Class Gastropoda actual size 2-70 mm</p> 	<p>Snails are found on the bottoms of ponds, on submerged vegetation, or floating beneath the surface of the water.</p>
<p><b>LEECH</b> Phylum Annelida Class Hirudinea actual size up to 100 mm long</p> 	<p>Leeches avoid sunlight. They can be found on the bottom of calm waters where they are usually attached to rocks or submerged wood. When attached, leeches hold their bodies vertically.</p>

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
<p>Damselfly nymphs have legs for crawling.</p>	<p>The nymphs eat each other as well as other aquatic insects, especially mosquito larvae and mayfly nymphs.</p>	<p>Eaten by trout and birds. They have 3 large leaf-like gills at the end of their abdomens.</p>
<p>Fly.</p>	<p>They eat other flying insects.</p>	<p>Damselflies hold their wings folded to their bodies when at rest. They are more slender and delicate than dragonflies. They mate in flight. They are eaten by birds and bats.</p>
<p>They crawl about on the bottom of creeks and rivers.</p>	<p>The nymphs shred underwater debris. Some are predators, eating other bottom-dwellers such as mayflies.</p>	<p>Stonefly nymphs have two tail-like sensory organs sticking out of their abdomens called cerci. These are harmless. Stonefly nymphs are eaten by trout.</p>
<p>Fly</p>	<p>Adults feed on algae.</p>	<p>Their two pairs of long wings are folded over their backs when at rest. Two long filaments stick out the end of their abdomens. Adults often emerge late in the year and are active in winter.</p>
<p>They walk along the surface using a rowing motion with their legs. They communicate with one another by making ripples on the water.</p>	<p>Water striders feed on small insects which fall into the water. They also feed on aquatic insects which live just below the surface. They may even eat each other.</p>	<p>Water striders have hairy feet and legs which help keep them on the surface. They dig their claws into the water for traction. They are eaten by predacious diving beetles.</p>

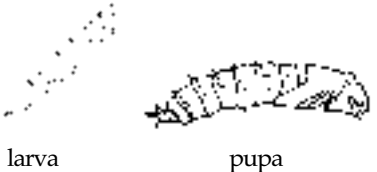


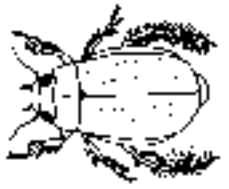

# Pond Life Identification Guide - Kananaskis Country

Insect		Where Found
<p><b>BACKSWIMMER</b> Order Hemiptera</p> <p>actual size 10-15 mm</p>		Often they are found resting below the surface of the water at an angle with their heads facing down.
<p><b>WATER BOATMAN</b> Order Hemiptera Family Corixidae</p> <p>actual size 5-15 mm</p>		Water boatmen often cling to submerged vegetation, although they can be found anywhere in the water. They may also be found feeding on the pond bottom.
<p><b>CADDISFLY larva</b> Order Trichoptera</p> <p>actual size up to 50 mm</p>	<p></p> <p>larva out of its case</p> <p></p> <p>example of larva case</p>	Found in cases which they construct on the bottoms of streams and ponds. Only their head and legs stick out, making them look like moving sticks.
<p><b>CADDISFLY adult</b></p> <p>actual size 18 mm</p>		The adults resemble moths, and, like moths, are nocturnal and attracted to light.
<p><b>CRANEFLY larva</b> Order Diptera Family Tipulidae</p> <p>actual size 10-50 mm</p>		Found on the bottom of ponds.

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
Crawl.	The larvae eat organic debris, worms, and snails.	Just before they pupate the larvae crawl out of the water and burrow into the soil above water level. There they pupate until they emerge as adults.
Fly.	The males eat nectar. The females generally require a meal of blood in order to produce eggs.	The mandibles (jaws) work like scissors, opening the wound. The wound then bleeds freely because the saliva of the horsefly contains anticoagulants.
The larvae swim with a paddling motion.	They eat everything they can, including insects, small fish and each other. They pierce their food with the sickle-shaped jaws, pump in digestive juices and then suck out the partly digested innards of their prey.	Their main predators are each other. The larvae breathe through their skin and through two holes or spiracles at the end of their abdomens.
They swim with a paddling motion. They can also fly. You may see them drifting up to the surface with their heads down and their back ends up in an effort to refill their 'air tanks'.	Adults feed in a similar manner to the larvae (see description above). the adults fly from pond to pond at night feeding mostly on mosquito larvae. The larger beetles also eat tadpoles and small fish.	Adults breathe by trapping air under their wing covers and then taking the air below the surface with them like mini-scuba tanks. The beetles then breathe from these 'tanks' through the holes or spiracles in their abdomens.
They crawl or swim.	The larvae are voracious carnivores and eat small animals.	The larvae are flat and resemble centipedes. They have long, thread-like filaments on their sides which are used for breathing.

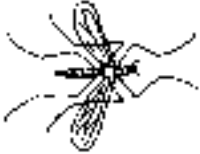
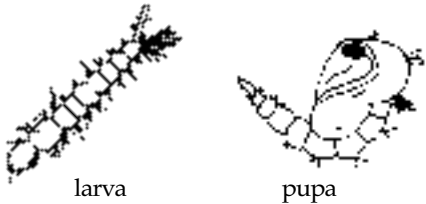



# Pond Life Identification Guide - Kananaskis Country

Insect	Where Found
<p><b>HORSEFLY larva and pupa</b> Order Diptera Family Tabanidae actual size 15-40 mm</p>  <p>larva                  pupa</p>	Found on the bottoms of ponds.
<p><b>HORSEFLY adult</b> actual size 10-25 mm</p> 	Often seen around horses. Found at all elevations, but especially in subalpine meadows. Often they are only noticed when they bite you.
<p><b>PREDACIOUS DIVING BEETLE larvae</b> Order Coleoptera Family Dytiscidae actual size 25 mm</p> 	These beetle larvae can be found throughout the pond.
<p><b>PREDACIOUS DIVING BEETLE adult</b> actual size 10-40 mm</p> 	Usually found swimming in the deeper parts of the pond.
<p><b>WHIRLIGIG BEETLE larva</b> Order Coleoptera Family Gyrinidae actual size 3-7 mm</p> 	Usually seen crawling on submerged vegetation. They pupate in moist soil. See page 27 for adult.

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
Backswimmers swim on their backs (backside-down) and can fly. They have one pair of long legs which propels the insect forward in an oar-like manner.	They eat aquatic insects and small fish. They also eat each other and may in turn be eaten by predacious diving beetles. They use their front legs to grab prey.	Backswimmers can sting if handled carelessly. They appear silvery because they are encased in air bubbles which they take below the surface as a source of air.
They swim erratically using their hind, oar-like legs. They can also fly. Unlike the backswimmer, water boatmen swim backside-up.	Eat algae and small animals. They do not sting people.	They are eaten by trout and nymphs which eat other insects. Males can sing by rubbing the side of their head with the base of their front legs.
They crawl along the bottom, dragging their cases behind them.	Caddisflies are omnivorous, eating algae, plants, larvae, worms, and crustaceans.	Caddisflies are eaten by fish (case and all) and by predacious diving beetles. They live in cases made from whatever is on the stream bottom (sand, plant matter) stuck together with silky glue from their salivary glands.
They fly with jerky, erratic movements.	The adult caddisfly eats nothing or feeds on nectar.	When at rest, the wings are folded <i>roof-like</i> over their bodies.
Crawl.	Cranefly larvae eat plant material.	Look for the disk at the end of their tail. It is thrust through the surface of the water for breathing, especially when the oxygen level in the water is low.

# Pond Life Identification Guide - Kananaskis Country

Insect	Where Found
<p><b>CRANEFLY adult</b></p> <p>actual size body 20 mm</p> 	<p>Found flying about, although they are not very good fliers. They are often found close to water, in mountain and subalpine areas.</p>
<p><b>MOSQUITO larva and pupa</b> Order Diptera Family Culicidae</p> <p>actual size larva 3-15 mm pupa 3-15 mm</p> 	<p>Both larvae and pupae are found just below still water surfaces. They will swim away to the bottom when threatened.</p>
<p><b>MOSQUITO adult</b></p> <p>actual size 15 mm</p> 	<p>Females are usually found feeding on your blood; they also feed on the blood of other animals. Mosquitoes are found in shady, moist habitats.</p>
<p><b>MIDGE larva</b> Order Diptera Family Chironomidae</p> <p>actual size 2-30 mm</p> 	<p>Found among the debris on the bottom of ponds.</p>
<p><b>MIDGE adult</b></p> <p>actual size 5-10 mm</p> 	<p>Often seen flying in swarms.</p>

# Kananaskis Country - Pond Life Identification Guide

Locomotion	Food	General Information
<p>Fly awkwardly.</p>	<p>The adults do not eat.</p>	<p>They resemble a mosquito with very long legs. They do not bite or sting.</p>
<p>Larvae are also called 'wigglers' because they constantly curl and uncurl or wriggle when they move. Pupae are called 'tumblers' because they appear to tumble through the water.</p>	<p>The larvae eat algae and protozoans (microscopic animals). The pupae do not eat.</p>	<p>They are eaten by fish and by predatory insects such as dragonflies. The larvae usually hang upside-down from the water surface, breathing through tubes which break the water's surface.</p>
<p>Fly.</p>	<p>The adult males eat nectar. The adult females must feed on blood in order to produce eggs.</p>	<p>Mosquitoes are eaten by birds, dragonflies, and damselflies. Mosquitoes sit with their wings folded.</p>
<p>Midge larvae crawl or wriggle. They are very active, bringing their front and back ends together and then snapping them apart.</p>	<p>The larvae eat underwater debris, algae, plants, and fungal spores.</p>	<p>They are eaten by small fish and predacious aquatic invertebrates. The larvae are often red, hence their common name of bloodworm.</p>
<p>Fly.</p>	<p>Adults do not usually feed.</p>	<p>Midges are often mistaken for mosquitoes, but do not bite. They often swarm in huge clouds.</p>