



Copepod

These tiny crustaceans serve as a major food source for many aquatic organisms. They're generally a teardrop shape with large antennae and between 1 to 2 mm long.

Sources:

Acorn. J.2000. *Bugs of Alberta*. Lone Pine Publishing.

Acorn.J.1993. *Butterflies of Alberta*. Lone Pine Publishing.

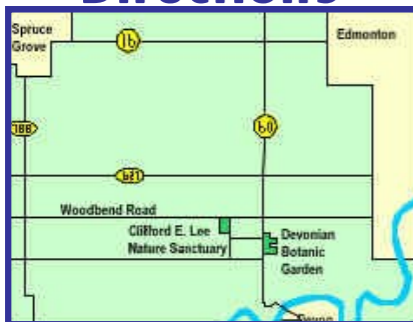
Photo Credit:

<http://www.flickr.com/creativecommons/>

<http://www.insectimages.org>

<http://www.forestryimages.org>

Directions



33km SW of Edmonton city centre. Take highway 16 W to highway 60, go S for 13.2 km to Woodbend Rd. and turn W for 1.6km then S for 1.4 km.

The Sanctuary is open to the public year round free of charge. Donations are encouraged on site or they can be sent to:

51306 Range Road 264
Spruce Grove, Alberta
T7Y 1E7



Ducks Unlimited Canada
Conserving Canada's Wetlands

Clifford E. Lee Nature Sanctuary



Clifford E. Lee Nature Sanctuary



Pond Life

Fascinating life beneath the surface!

Successfully Navigate a Pond Dip

Introduction

Interested in discovering the life forms that dwell beneath the surface of our wetlands? It's as easy as filling a bucket full of water. Your eyes are the most important tools you'll use in a pond dip. Try sitting very still near the water's edge. You'll be amazed by the activity of life that surrounds you, whether it is waterfowl foraging for invertebrates, frogs surfacing for air, or the Whirligig beetles dancing dizzily on the water's surface. To venture deeper into your inquiry of a wetlands environment, here is some useful information.

Pond Dip Tools

Net

You'll need a net made out of panty hose and a wire hanger or one that you'd buy for a fish tank. To extend your reach, attach the net to an old broom handle with waterproof tape.



Bucket

You'll need a white 2 L ice cream pail, to help your specimens stand out against their background. The bucket needs to be cleaned and rinsed thoroughly to ensure there are no remnants of cleaning agents or food, as these can contaminate pond water and kill the life within it.

Observation Jar

You'll need a small clear glass jar to get a closer look at specific specimens. You can also use plastic bug containers with magnification lids.

Spoon

To scoop smaller invertebrates into your observation jar.

Magnifying Glass

To observe the finer details of each specimen in your bucket or observation jar.

Notebook & Pencil

To write down or sketch any interesting findings.

Camera

To photograph species you find interesting.

How to Pond Dip

Find a spot on the boardwalk that's close enough to reach the water with your net, preferably the first viewing platform. Begin by lying face down on the boardwalk and safely securing yourself. Then scoop some water into



your bucket. Now you are ready to sweep your net through the water and empty the contents into your bucket. Be gentle when emptying your net as "pond dwellers" are delicate. Next, use your spoon to place the interesting specimens in your observation jar, which should also be half full of pond water. Then use your magnifying glass to get a better look at what you've caught. When you've seen enough, release your specimens back into the water and start all over again. This time try sweeping your net in a different spot to hopefully catch a variety of different species.

Protect Yourself & Your Specimens

- ☞ Protect aquatic habitats by staying out of the water.
- ☞ Protect wetlands by staying away from the land near the edge of the water.
- ☞ Protect yourself by trying not to touch any of the specimens as most are fragile and some do bite.
- ☞ Protect the livelihood of the site by leaving with no more than the tools you came with.



Design by: Sacha Mulholland 2007

What Might Fly By

This is the largest dragonfly in Alberta. The twelve species of Darners that take up residence around our wetlands spend most of their time in flight, where they capture their prey with their long, spiny legs.



Variable Darner Dragonfly



Hudsonian Whiteface Dragonfly (male)

near the tip of each wing. There are five species of Whitefaces in Alberta.

The three species of Four-Spotted Skimmer dragonflies living in Alberta are known for their broad muscular bodies as well as their vivid orange and black markings. Female dragonflies lay their eggs by dipping their stomachs below the water's surface as they fly.



Hudsonian Whiteface Dragonfly (female)



Four-Spotted Skimmer Dragonfly

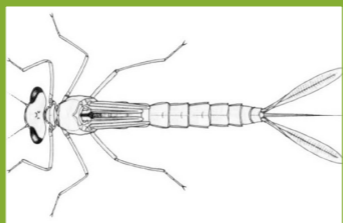
Some prefer to attach their eggs to plants in the water. Males remain attached to females to ensure the eggs are laid successfully and to ward off any other potential mates.

Seven species of American Bluet damselflies exist throughout Alberta. While in flight, these electric blue beauties can be

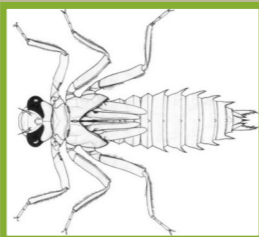


American Bluet Damselfly

found hovering amongst reeds, plucking off delicious aphids and baby grasshoppers. Female Bluets are sometimes green or yellow. Before these majestic winged species take flight, they spend a lot of time developing in aquatic environments. Both the dragonfly and damselfly larvae look nothing like their adult forms. They each use a folding lower lip to catch prey, which extends out many times the length of the larva's head to grab its prey. Interestingly, a dragonfly's larva



Damselfly Larva



Dragonfly Larva

gills are situated in its rectum, meaning it breathes through its butt. It also navigates through the water by squirting water out its back end, also known as "butt propulsion." On the other hand, the damselfly larva's gills look like feathery fins at the end of its body. It does not use its gills for locomotion, instead it wriggles through the water like a human swim-



Dragonfly Larva Shell

What you might catch in Your Net



Fishing Spider

When young, they tiptoe on water. As adults they crawl around on underwater plants breathing air trapped on their body hair.

Pond Skater

Long water-repelling legs spread their body weight over a large area, keeping them afloat. Drowning insects are their prey.



Water Boatmen

When diving, air is provided from bubbles attached to their tummies. Their three pairs of legs are used for sifting through mud, anchoring to rocks and rowing like you would with boat oars.

Back Swimmer

These amazing backstroke swimmers have a nasty bite. You'll find them lounging near the surface poised to dive away from predators.



Whirligig Beetle

Known for their super efficient swimming legs, they can be found zipping around on top of the water at super fast speeds making whimsical spins and loops. They also have incredible eyes that are split in half, allowing them to look above and below the water at the same time.

Caddisfly Larva

These scavengers feast on algae. They cover themselves in casings made from twigs, pebbles, reeds or leaves to protect their soft grub-like bodies from predators.



Water Tiger

The name is misleading as this creature is the larva of the Giant Diving Beetle, not the Tiger Beetle. They are known for their quick attacks on prey. Almost instantaneously their victims are injected with digestive juices to make them into liquid treats.

Giant Diving Beetle

They're one of the biggest aquatic insect predators, who eat almost anything. These ultimate survivors emit defense chemicals to ward off their limited competitors, like the fearless Giant Water Bug.



Giant Water Bug



The mightiest of all aquatic insect predators, preys on fish, tadpoles and fellow insects. In flight, they get mistaken for bats. **Do not touch!** A bite could send you to the emergency room!

Freshwater Shrimp

These defenseless little scavengers hide amongst the weeds. A rest and recovery break is needed for every 5 to 10 inches of swimming, during which they curl and sink.



Mosquito

Larvae/Pupae



Dangling larvae breathe through their tail ends which cling to the water's surface. The pupae float on the water and breathe through horn-like protrusions.

Tadpole

The first stage of the frog life cycle, where gills and a fin-like tail are key elements to their survival.

