Frenchman River Biodiversity Project

Quick Guide to Major Types of Freshwater Invertebrates in the Frenchman Watershed, Saskatchewan

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unless otherwise noted, photographs by Hugh Clifford,
from BioDITRL http://bio-ditrl.sunsite.ualberta.ca/
... What is the FRBP?

The Frenchman River Biodiversity Project (FRBP) is a multi-disciplinary research project that began in 2003 and will run until 2006. The aim is to assess the health of the Frenchman River and the sustainability of local activities by studying the aquatic biodiversity of the river and social interactions that affect the watershed.

The FRBP is a joint undertaking of the Royal Saskatchewan Museum and the Canadian Museum of Nature, in partnership with local residents, university researchers, and representatives from provincial and federal government departments.

1a. Does the animal have a hard shell and no legs?

YES (it is a mollusc)  
NO  
goto 2a

1b. Are there two halves to the shell?

YES  
NO  

it is a mussel (Mollusca: Bivalvia)  
it is a snail (Mollusca: Gastropoda)

image by D. Belter
2a. Is the animal soft and squishy with no legs and no head?
   YES
   NO
   *go to 3*

2b. Is it relatively flat with a sucker at one or both ends?
   YES
   NO
   it is a leech (Hirudinea)
   it is a freshwater earthworm (Oligochaeta)

*after this line are animals with legs*

3. Does the animal have more than 4 pairs of legs?
   YES
   *go to 4a, Crustacea*
   NO
   *go to 5a*
4a. Does the animal have a pair of large front pincers?

- YES
- NO

If YES, it is a crayfish, Decapoda: only species in Saskatchewan is *Orconectes virilis*

If NO, go to 4b.

4b. Does the animal look like a shrimp?

- YES
- NO

If YES, go to 4d.

If NO, it is a scud (Amphipoda).

4c. Is it flattened from side-to-side?

- YES
- NO

If YES, it is a scud (Amphipoda).

If NO, it is a fairy shrimp (Anostraca).
4d. Is most of the body covered by a thin, soft shell?

- **YES**
  - it is a clam shrimp (Conchostraca)

- **NO**
  - it is a water flea (Cladocera)

4e. Does one pair of appendages stick out from the shell?

- **YES**
  - it is a water flea (Cladocera)

- **NO**
  - it is a clam shrimp (Conchostraca)
5a. Does it have four pairs of jointed legs?

YES (Arachnida)  NO (Insecta)

go to 6

5b. Are there two major body parts separated by a narrow ‘waist’?

YES

it is a spider (Araneae)

NO

it is a water mite (Hydrachnida)

after this line are insects: they have 3 pairs of jointed legs (except for larval flies, which have no legs!)

6. Does it have a pair of hard wings that cover the hind part of the body?

YES  NO

go to 7  go to 8
7. Do the wings meet in the middle to make a straight line?

**YES**

- it is an adult beetle (Coleoptera)

**NO**

- it is a true bug (Hemiptera): their wings overlap in a criss-cross*

8. Does the animal appear to live inside a stick or collection of leaves or sand grains?

**YES**

- it is a caddisfly (Trichoptera)

**NO**

- go to 9a

*note: young true bugs look like adults but they don’t have full wings
9a. Does it have 3 flat paddle-like 'tails'?

YES  NO

it is a damselfly larva (Odonata: Zygoptera)

9b. Does it have several pairs of gills on the abdomen (can be cylindrical, plate-like, or feathery)?

YES  NO

9c. Does it have 3 'tails'?

YES  NO

it is a mayfly larva (Ephemeroptera)

it is an alderfly larva (Megaloptera): has one 'tail'
10a. Does it have 2 ‘tails’?

YES

NO

*go to 11*

10b. Are the antennae about as long and as strong as the tails?

YES

it is a stonefly larva (Plecoptera)

NO

it is a type of beetle larva (Coleoptera)

11. Is there a tuft of hairy stuff coming out the hind end?

YES

it is a type of beetle larva (Coleoptera)

NO

it is a dragonfly larva (Odonata: Anisoptera); many have poky spines on the hind end
Still haven’t seen your animal? Try these

Does it look like a swimming seed?

it is a seed shrimp (Crustacea: Ostracoda)

Does it look like a mayfly but with only two ‘tails’?

it is one of the rare mayflies with two tails! (Ephemeroptera)

Does it look like this strange prehistoric monster?

it is a tadpole shrimp (Crustacea: Notostraca)

Does it look like a worm but has a little head?

it is a larval fly (Insecta: Diptera)

and if you still can’t find it, check out the Saskatchewan Aquatic Insects Page:
http://www.aquatax.ca/skabugindex.html