

Aquatic Beetles of the Thunder Basin Grassland Prairie Ecosystem Association



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Cover photo taken by K. Hack of C. Bish collecting aquatic invertebrates in Thunder Basin.

Photos below are *Rhantus* (Dytiscidae; top left), *Peltodytes* (Haliplidae; right), and *Helophorus* (Hydrophilidae; bottom left).



Introduction

Aquatic beetles are a diverse group of insects that live throughout the world. Aquatic beetles live in most aquatic habitats, including ponds, lakes, streams, wetlands, and pools. Most adult aquatic beetles are good fliers, which enables them to quickly colonize new habitats. For example, aquatic beetles can colonize stock tanks only days after the tanks are first filled with water. Predaceous diving beetles (Dytiscidae) are the most diverse family of aquatic beetles. These beetles have streamlined bodies that can be nearly 2 inches in length. Water scavenger beetles (Hydrophilidae) are another diverse family of beetles that look similar to dytiscids. Water scavenger beetles may grow up to 1.5 inches in length and can help reduce mosquito larvae. Finally, crawling water beetles (Halplidae) form a smaller family of insects, and are rather clumsy swimmers. These beetles tend to crawl on the stream bottom or on aquatic vegetation. All beetles go through 3 life stages after hatching from eggs. Larval beetles live in water and typically eat other invertebrates. The mature larva crawls out of the water and pupates along the margin of the water body. The adult emerges after pupating and can fly among habitats. Most aquatic beetles in Wyoming are thought to live about 1 year.

Methods

To investigate the types and distributions of aquatic beetles in eastern Wyoming in 2012, we collected invertebrates from streams and ponds on lands within the Thunder Basin Grassland Prairie Ecosystem Association. All sampling was conducted with the permission of the landowners. We recorded location and elevation with a GPS unit, and described and photographed the habitat. We collected aquatic invertebrates using D-frame dip nets with 250 μm mesh. Invertebrates were preserved in ~75% ethanol and returned to the laboratory for identification. We identified all adult beetles in the samples using Merritt et al. (2008) and the family Dytiscidae using Larson et al. (2000).

Results and Discussion

We collected beetles in each stream we sampled. We identified 15 different beetles in 3 different families (Table 1). The Dry Fork of the Cheyenne River had the highest diversity of beetles. None of the beetles collected are considered rare or of special conservation concern at this time. Seven of the taxa collected were found in more than one stream. This is not surprising, because adult beetles are good fliers and commonly move among habitats.

Table 1. Aquatic beetles collected in each stream.

Scientific Name	Family	Common name	Stream
<i>Cercyon sp.</i>	Hydrophilidae	Water scavenger beetles	Box Creek
<i>Coptotomus longulus</i>	Dytiscidae	Predaceous diving beetle	Box Creek
<i>Laccophilus maculosus maculosus</i>	Dytiscidae	Predaceous diving beetle	Box Creek
<i>Hygrotus impressopunctatus</i>	Dytiscidae	Predaceous diving beetle	Box Creek
<i>Peltodytes edentulus</i>	Haliplidae	Crawling water beetles	Dry Fork
<i>Helophorus sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Fork
<i>Berosus sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Fork
<i>Tropisternus sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Fork
<i>Laccophilus maculosus decipiens</i>	Dytiscidae	Predaceous diving beetle	Dry Fork
<i>Coptotomus longulus</i>	Dytiscidae	Predaceous diving beetle	Dry Fork
<i>Rhantus binotatus</i>	Dytiscidae	Predaceous diving beetle	Dry Fork
<i>Liodessus obscurellus</i>	Dytiscidae	Predaceous diving beetle	Dry Fork
<i>Hygrotus picatus</i>	Dytiscidae	Predaceous diving beetle	Dry Fork
<i>Hygrotus marklini</i>	Dytiscidae	Predaceous diving beetle	Dry Fork
<i>Berosus sp.</i>	Hydrophilidae	Water scavenger beetles	Rat Creek
<i>Helophorus sp.</i>	Hydrophilidae	Water scavenger beetles	Rat Creek
<i>Agabus disintegratus</i>	Dytiscidae	Predaceous diving beetle	Rat Creek
<i>Berosus sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Creek
<i>Tropisternus sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Creek
<i>Cercyon sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Creek
<i>Hygrotus patruelis</i>	Dytiscidae	Predaceous diving beetle	Dry Creek
<i>Liodessus obscurellus</i>	Dytiscidae	Predaceous diving beetle	Dry Creek
<i>Helophorus sp.</i>	Hydrophilidae	Water scavenger beetles	Dry Creek
<i>Peltodytes callosus</i>	Haliplidae	Crawling water beetles	Dry Creek

Literature Cited

- Larson, D. J., Y. Alarie, and R. E. Roughley. 2000. Predaceous diving beetles (Coleoptera: Dytiscidae) of the Nearctic Region, with emphasis on the Fauna of Canada and Alaska. National Research Council of Canada Research Press, Ottawa, Ontario.
- Merritt, R. W., K. W. Cummins, and M. B. Berg, editors. 2008. An Introduction to the Aquatic Insects of North America, 4th edition. Kendall Hunt Publishing, Dubuque, IA.

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