ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** IIEPH79030
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Baetodes arizonensis*
COMMON NAME: A Mayfly
SYNONYMS: *Baetodes sigillatus*
FAMILY: Baetidae

AUTHOR, PLACE OF PUBLICATION: R.W. Koss, Entomol. News 83: 93-102. 1972.

TYPE LOCALITY:

TYPE SPECIMEN: Paratype: Florida A&M. Koss 1972.

TAXONOMIC UNIQUENESS: There are 95 genera in this family and 700 species known worldwide. In North America there are 18 genera and 130 species.

DESCRIPTION: For this family the larvae have a body length of 3-12 mm (mature larvae, not including antennae and tails). Gills are present on the top of most abdomen segments at the sides. The gills are thin, flat disks that are round to oval and have no forks or pointed filaments. The antennae are usually two or three times the width of the head. The upper lip usually has a notch in the middle of the edge (best seen in front view). Some kinds have only two tails or a much shorter middle tail. The last two segments of the abdomen before the tails do not have sharp spines on the outside rear corners. They may be pale or dark brown or black with yellowish or gray markings.

AIDS TO IDENTIFICATION: See "**Description.**"

ILLUSTRATIONS: Color drawing of larvae (Voshell 2002: Plate 57)
Color photo of larvae (Milne 1980: Plate 396)

TOTAL RANGE: Coconino and Gila counties, Arizona.

RANGE WITHIN ARIZONA: See "**Total Range.**"

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Mayflies date from Carboniferous and Permian times and represent the oldest order of the existing winged insects. They are unique among the insects in having two winged adult stages. As adults they generally live from 1 to 2 hours to a few days, and spend most of their life in the

aquatic environment, either as eggs or nymphs. Because of their winged adult stage and a propensity for drift as nymphs, mayflies are often among the first macroinvertebrates to colonize virgin habitats. The larvae in this family are characterized as swimmers, clingers, and climbers. This family is an exception to the rule about mayflies being indicators of good water quality.

REPRODUCTION: Swarming is a male activity. The female's fly into these swarms, and mating occurs almost immediately and usually in flight. Swarming may take place over the water itself, over the shore area, or even away from the water. Mayfly eggs have a variety of attachment structures that enable them to adhere to submerged objects or to the substrate. Differences in egg morphology have enabled the construction of identification keys, purely on the basis of eggs. For this family the female rests on a stone above the water, and dips her abdomen into the water to lay the eggs.

FOOD HABITS: They do not feed as adults, but as nymphs they eat detritus and periphyton (algal communities on stones and plants).

HABITAT: For the family they are found in lotic-erosional, lotic-depositional, and lentic littoral habitats. These mayfly larvae are most commonly found in shallow flowing waters on or under cobbles and pebbles, but they are also found on aquatic plants in flowing waters. Larvae occur in all sizes of flowing waters from small spring fed brooks to large rivers. Other small minnow mayflies are found around the edges of ponds and lakes, especially on plants. Larvae are common in all types of standing water habitats including: permanent and temporary ponds, roadside ditches, margins of lakes, backwaters of streams, warm desert springs, brackish waters, and even sewage treatment ponds. Some species of small minnow mayflies are often very abundant in areas that are choked with vegetation. Larvae have been reported to develop successfully in water as warm as 32° C and as cool as 4° C.

ELEVATION:

PLANT COMMUNITY:

POPULATION TRENDS:

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: None

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Life history, population status, and distribution studies need to be performed.

LAND MANAGEMENT/OWNERSHIP:

SOURCES OF FURTHER INFORMATION

REFERENCES:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

This family is known as the small mayflies.

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Arizona Game and Fish Department. 20XX **(= year of last revision as indicated at end of abstract)**. X...X **(= taxon of animal or plant)**. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.