# A Survey of Aquatic Invertebrates from Wichita Mountain Streams

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The Wichita Mountains are in the plains of southwestern Oklahoma. This region is somewhat isolated, but both eastern and western terrestrial species of plants and animals occur there (1-3). This study is on aquatic invertebrates associated with streams in this area. Other investigations on such invertebrates of Oklahoma concentrated on the eastern and central waters (4-7). No published studies exist from the Wichita Mountains.

Aquatic invertebrates were collected from several stream habitats in the Wichita Mountains, including Headquarters Creek, Post Oak Creek, and West Cache Creek. Collections occurred monthly from September 1988 to August 1989. Rocks and other debris were examined by hand. A dip net was used to sweep through vegetation and soft substrates. These techniques were used to examine as many microhabitats as possible to find the species present and describe their relative abundance.

A total of 89 taxa were collected during the study (Table 1, page 36). Aquatic insects dominated the invertebrate fauna, composing 83% of the taxa collected. The most frequently encountered taxa included the pulmonate snail *Physella,* the mayflies *Callibaetis* and *Stenonema,* and the water strider *Gerris.*

A diverse fauna of aquatic invertebrates exists in the streams of the Wichita Mountains because of good water quality and the large number of microhabitats available. As greater human pressures are placed on this unique area, these watersheds must be protected to maintain the diversity of aquatic microhabitats.

## ACKNOWLEDGEMENTS

This research was supported in part by Central State University Faculty Research Funds. Permission to conduct this study at the Wichita Mountains National Wildlife Refuge was granted by the United States Fish and Wildlife Service (Permit #05080).

## REFERENCES

1. W.F. Blair and T.H. Hubbell, Am. Midl. Nat. 20: 425-454 (1938).
2. W.E. Bruner, Ecol. Monogr. 1: 99-188 (1931).
3. G.M. Sutton, *Oklahoma Birds.* Univ. Okla. Press, Norman, OK, 1967.
4. R.C. Harrel, Southwest Nat. 14: 231-248 (1969).
5. L.E. Hornuff, Okla. Fish. Lab. Rep. No. 62, 1957, 24 pp.
6. D.J. Orth, R.N. Jones and O.E. Maughan, Proc. Okla. Acad. Sci. 62: 18-21 (1982).
7. W.K. Reisen, Proc. Okla. Acad. Sci. 55: 25-31 (1975).

TABLE 1. Taxa of aquatic invertebrates and their relative abundance.

| Taxa | Relative Abundance |
|---|---|
| Platyhelminthes | |
| *Dugesia tigrina* | C |
| Nematoda | |
| *Nematoda* sp. | O |
| Oligochaeta | |
| *Branchiura sowerbyii* | O |
| *Limnodrilus* sp. | C |
| *Lumbriculus* sp. | A |
| Hirudinea | |
| *Helobdella triserialis* | R |
| Gastropoda | |
| *Ferrissia* sp. | O |
| *Gyraulus* sp. | A |
| *Helisoma* sp. | A |
| *Physella* sp. | A |
| Pelecypoda | |
| *Sphaerium* sp. | R |
| Crustacea | |
| *Eulimnadia antlei* | R |
| *Hyalella azteca* | A |
| *Palaemonetes kadiakensis* | A |
| *Procambarus* sp. | A |
| Collembola | |
| *Isotomurus palustris* | C |
| Ephemeroptera | |
| *Baetis* sp. | A |
| *Callibaetis* sp. | A |
| *Caenis* sp. | O |
| *Stenonema* sp. | A |
| Odonata | |
| *Anax junius* | O |
| *Archilestes grandis* | O |
| *Argia* sp. | A |
| *Celthemis verna* | R |
| *Coenagrion* sp. | O |
| *Enallagma* sp. | A |
| *Erythemis simplicicolis* | O |
| *Helocordulia selsii* | R |
| *Ischnura* sp. | A |
| *Ladona* sp. | C |
| *Libellula luctosa* | R |
| *Miatheria* sp. | R |
| *Neurocordulia yamaskanesis* | R |
| *Pachydiplax longipennis* | O |
| *Somatochlora* sp. | C |
| *Sympetrum* sp. | O |
| *Tetragoneura cynosura* | O |
| *Tramea carolina* | O |
| Plecoptera | |
| *Zealuctra claasseni* | C |
| Hemiptera | |
| *Gerris* sp. | A |
| *Hydrometra* sp. | R |
| *Limnoporus* sp. | C |
| *Microvelia* sp. | A |
| *Notonecta* sp. | O |
| *Rheumabates* sp. | R |
| *Sigara* sp. | A |
| *Trepobates* sp. | C |
| Trichoptera | |
| *Cheumatopsyche* sp. | C |
| *Chimarra* sp. | O |
| *Oecetis* sp. | R |
| *Polycentropus* sp. | A |
| *Pycnopsyche* sp. | O |
| Coleoptera | |
| *Agabus* sp. | O |
| *Berosus* sp. | C |
| *Celina* sp. | R |
| *Coptotomus* sp. | R |
| *Deronectes* sp. | R |
| *Derovatellus* sp. | O |
| *Dineutus* sp. | A |
| *Dytiscus* sp. | O |
| *Ectopria* sp. | R |
| *Hydrochus* sp. | R |
| *Laccobius* sp. | R |
| *Laccophilus* sp. | A |
| *Liodessus* sp. | R |
| *Peltodytes* sp. | O |
| *Thermonectes* sp. | R |
| *Tropisternus* sp. | A |
| Diptera | |
| *Ablabesmyia annulata* | R |
| *Ablabesmyia ornata* | R |
| *Ablabesmyia parajanta* | R |
| *Ablabesmyia rhamphi* | R |
| *Aedes vexans* | C |
| *Anopheles punctipennis* | O |
| *Chaoborus punctipennis* | R |
| *Chironomus* sp. | O |
| *Cladotanytarsus* sp. | R |
| *Cricotopus* sp. | R |
| *Culiseta* sp. | O |
| *Dasyhelia* sp. | O |
| *Endochironomus* sp. | A |
| *Glyptotendipes* sp. | R |
| *Microcricotopus* sp. | O |
| *Orthocladiinae* sp. | R |
| *Parachironomus* sp. | R |
| *Parakiefferiella* sp. | R |
| *Pentaneura* sp. | R |
| *Simulium* sp. | A |

A = abundant (in > 75% of samples)
C = common (in 50 – 75% of samples)
O = occasional (in 25 – 49% of samples)
R = rare (in < 25% of samples)