

Tiffany A. Schriever and David A. Lytle. 2016. Convergent diversity and trait composition in temporary streams and ponds. *Ecosphere* 7.

Appendix S2

TABLE S1. Traits determined for 88 freshwater macroinvertebrate taxa collected from nine woodland ponds in Ontario, Canada. Two NAs (undetermined) per taxon were allowed in the traits analysis. Source number corresponds to citation used for trait information.

Order	Family	Taxon	Body size	Voltinism	Dispersal	Respiration	FFG	Diapause	Locomotion	Source	
Acariformes	suborder:Hydrachnidia	<i>Acari</i>	1	2	3	1	5	2	3	6,56	
Amphipoda	Gammaridae	<i>Hyaella</i>	1	2	1	2	1	2	3	5,10,56,91	
		<i>Gammarus</i>	3	2	1	2	1	3	3	5,10	
Annelida	Oligochaeta	<i>Oligochaeta</i>	NA	2	NA	1	1	2	1	2,56,82	
Anostraca	Anostraca	Anostraca	2	3	3	2	4	1	5	1,56,91	
		<i>Macrobdella decora</i>	3	2	3	3	6	NA	5	2,3	
Arhynchobdellida	Hirudinidae										
Basommatophora	Lymnaeidae	Lymnaeidae	2	2	3	2	3	1	3	56,91	
	Physidae	<i>Physa elliptica</i>	2	2	2	1	3	1	7	10,56,91	
		<i>Aplexa</i>	2	NA	3	NA	3	1	3	56,91	
	Planorbidae	<i>Planorbidae</i>	1	2	1	2	3	2	7	2,56, 88,91	
Cladocera	Daphniidae	Daphniidae	1	3	3	1	4	2	5	56,82	
Coleoptera	Dryopidae	Dryopidae	1	1	4	3	3	3	4	4,7,10,89	
		Dytiscidae	2	2	4	3	6	3	5	10,11	
		<i>Acilius</i>	2	2	4	3	6	3	5	10,11,56	
		<i>Cybistrinae</i>	3	2	4	3	6	3	5	10,11	
		<i>Dytiscus</i>	3	2	4	3	6	3	5	10,11,56	
		<i>Dytiscus harrisii</i>	3	2	4	3	6	3	5	10,11	
		<i>Hydrovatus</i>	1	2	4	3	6	3	5	10,11	
		<i>Desmopachria</i>	1	2	4	3	6	3	5	10,11	
		Elmidae	Elmidae	1	1	4	1	1	4	4,7,85,89	
		Gyrinidae	Gyrinidae	1	2	4	3	7	3	5	4,10,14,85
			<i>Dineutus</i>	2	2	4	3	7	3	5	10,56,85,89
			<i>Gyrinus</i>	1	2	4	3	7	3	5	10,14,56,85
		Haliplidae	Haliplidae	1	3	4	3	5	3	5	10,14,85
			<i>peltodytes</i>	1	3	4	3	3	2	5	10,56,85
	<i>Haliplussp.</i>		1	3	4	3	3	2	5	10,56,85	
	Hydraenidae	Hydraenidae	1	2	4	3	3	3	4	4,10,14,85	
	Hydrophilidae	<i>Tropisternus</i>	2	2	4	3	1	3	5	4,10,56,85	
		<i>Hydrochara</i>	3	2	4	3	1	3	5	4,10,56,85,91	

		<i>Hydrochus</i>	1	2	4	3	2	3	7	4,10,14,85
		Hydrophilidae	2	2	4	3	7	3	5	10,14,85,89
Diptera	Ceratopogonidae	Ceratopogonidae	1	2	1	1	7	3	3	4,7,85
	Chaoboridae	Chaoboridae	1	3	NA	1	6	3	3	4,10,86,89
	Chaoboridae	<i>Chaoborus</i>	1	3	NA	1	6	3	3	4,10,56,86,89
	Chironomidae	Chironomidae	1	3	4	2	1	3	3	7,85
	Culicidae	Culicidae	1	3	4	3	1	2	5	4,10,56,85,89
	Dixidae	Dixidae	1	2	1	3	4	3	5	10,85
		<i>Dixella</i>	1	2	1	3	1	3	5	10,85
	Stratiomyidae	Stratiomyidae	2	2	4	3	1	2	3	1,10,56
		<i>Nematelus</i>	2	2	4	3	1	2	3	1,10,56
		<i>stratiomys</i>	2	2	4	3	1	2	3	1,10,56
	Tipulidae	Tipulidae	2	2	2	3	2	1	1	4,10
Ephemeroptera	Baetidae	Baetidae	1	3	4	2	1	3	5	7,10
	Caenidae	Caenidae	1	3	4	2	1	3	3	4,7,10,89
	Potamanthidae	<i>Anthopotamus</i>	2	2	4	2	4	3	1	7,10
	Ephemeroptera	Ephemeroptera	1	2	4	2	3	3	4	10,56,89,91
Hemiptera	Belostomatidae	<i>Lethocerus</i>	3	3	4	3	6	3	7	4,10
		<i>Belostoma</i>	3	2	4	3	6	3	7	7,10,56
		Belostomatidae	3	2	4	3	6	3	7	7,10,56
	Corixidae	Corixidae	1	3	4	3	5	3	5	7,10
	Gerridae	Gerridae	2	2	4	3	6	3	6	7,10,84,85
		<i>Neogerris</i>	1	2	4	3	6	3	6	7,10,84,85
	Hydrometridae	Hydrometridae	2	3	NA	1	6	3	6	4,10
	Mesoveliidae	Mesoveliidae	1	3	NA	3	6	3	6	4,56,83,91
	Nepidae	<i>Ranatra</i>	3	2	3	3	6	3	7	4,7,10,56
		Nepidae	3	2	3	3	6	3	7	4,7,56
		<i>Nepa</i>	3	2	3	3	6	1	7	4,7
	Notonectidae	<i>Notonecta</i>	2	2	4	3	6	3	5	10,56,85,89
		Notonectidae	2	2	4	3	6	3	5	10,56,85,89
	Pleidae	Pleidae	1	2	NA	3	6	3	5	4,56,89,91
	Saldidae	Saldidae	1	NA	4	3	6	3	6	4,10,56,89
	Hemiptera	Hemiptera	NA	2	4	3	6	3	NA	4
	Veliidae	<i>Microvelia</i>	1	3	2	3	6	3	6	7,10,56,85
Isopoda	Asellidae	<i>Asellus</i>	NA	2	1	2	2	2	NA	5,56,91
		Asellidae	NA	2	1	2	2	3	3	5,10,82,91
		<i>Lirceus</i>	3	2	1	2	2	3	4	5,10,91
Megaloptera	Corydalidae	Corydalidae	3	1	4	2	7	3	4	4,7,10,85
		<i>Nigronia</i>	3	1	4	2	7	3	4	7,10,89
		<i>Chauliodes</i>	3	1	4	3	7	3	4	4,10
	Megaloptera	Megaloptera	3	1	4	2	7	3	4	10,89

Odonata (Anisoptera)	Aeshnidae	<i>Anax junius</i>	3	3	4	2	7	3	7	4,10,56
		Aeshnidae	3	1	4	2	7	3	7	4,7,56
	Libellulidae	Libellulidae	3	1	4	2	7	2	3	4,10,85
	Anisoptera	<i>Anisoptera</i>	3	3	4	2	7	3	7	2,4
Odonata (Zygoptera)	Coenagrionidae	Coenagrionidae	2	2	4	1	7	3	7	1,4,10
	Coenagrionidae	<i>Nehalennia</i>	3	2	4	1	7	3	7	7,10
	Lestidae	Lestidae	3	2	4	1	7	2	7	4,7,10,56
	Lestidae	<i>Lestes</i>	3	2	4	1	7	2	7	10,56
	Zygoptera	<i>Zygoptera</i>	3	1	4	2	7	3	7	2,4
Podocopida	Ostracoda	<i>Ostracoda</i>	1	2	3	1	4	1	5	10,56,75,90,91
Trichoptera	Leptoceridae	Leptoceridae	2	2	4	2	1	3	7	4,7,10,85
	Limnephilidae	Limnephilidae	2	2	4	2	2	2	3	7,10,56,85
		<i>Limnephilus</i>	3	2	4	2	2	2	7	4,7,56,90
		<i>Nemotaulius</i>	3	2	4	2	2	2	3	7,10,85,90
	Phryganeidae	<i>Fabria inornata</i>	3	2	4	2	2	3	7	4,10,56,85,90
		Phryganeidae	3	2	4	2	2	2	7	10,56,85,90
		Trichoptera	Trichoptera	NA	2	4	2	2	2	NA
Veneroida	Sphaeriidae	<i>Sphaerium</i>	1	2	1	2	4	1	1	1,4,10,56,80

#### Source citations

- 1 Tachet, H., M. Bournaud, P. Richoux, and P. Usseglio-Polatera. 2002. Invertébrés d'eau douce : systématique, biologie, écologie. CNRS Editions, Paris, France.
- 2 Merritt, R.W., J. R. Wallace, M. J. Higgins, M. K. Alexander, M. B. Berg, W. T. Morgan, K. W. Cummins, and B. VandenEeden. 1996. Procedures for the functional analysis of invertebrate communities of the Kissimmee River-Floodplain ecosystem. *Florida Scientist* 59:216–275.
- 3 Thorp, J. H., and A. P. Covich. 2001. Ecology and classification of North American freshwater invertebrates. Academic Press, San Diego, California.
- 4 Merritt, R.W., K. W. Cummins, M. B. Berg, J. A. Novak, M. J. Higgins, K. J. Wessell, and J. L. Lessard. 2002. Development and application of a macroinvertebrate functional group approach in the bioassessment of remnant oxbows in southwest Florida. *Journal of the North American Benthological Society* 21:290–310.
- 5 Thorp, J. H., and A. P. Covich (editors). 1991. Water mites and other arachnids. Chapter 15 in Ecology and classification of North American freshwater invertebrates. Academic Press, San Diego, California.
- 6 Cook, D. R. 1974. Water mite genera and subgenera. *Memoirs of the American Entomological Institute* 21:1–860.
- 7 Poff, N. L., J. D. Olden, K. N. M. Vieira, D. S. Finn, M. P. Simmons, and B. C. Kondratieff. 2006. Functional trait niches of North American lotic insects: traits-based ecological applications in light of phylogenetic relationships. *Journal of the North American Benthological Society* 25:730–755.

- 10 US Environmental Protection Agency. 2012. Freshwater Traits Database. EPA/600/R-11/038F. Global Change Research Program, National Center for Environmental Assessment, Washington, DC. (Available from: National Technical Information Service, Springfield, Virginia, and online at <http://www.epa.gov/ncea>)
- 11 Larson, D. J., Y. Alarie, and R. E. Roughly. 2000. Predaceous diving beetles (Coleoptera: Dytiscidae) of the Nearctic Region, with an emphasis on the fauna of Canada and Alaska. NRC Research Press, Ottawa, Canada.
- 14 Arnett, R. H., and M. C. Thomas. 2000 American beetles. Volume I: Archostemata, Myxophaga, Adephaga, Polyphaga: Staphyliniformia. 2000. CRC Press, Boca Raton, Florida.
- 56 Wiggins, G. B., R. J. Mackay, and I. M. Smith. 1980. Evolutionary and ecological strategies of animals in annual temporary pools. *Archiv für Hydrobiologie Supplement* 58:27–206.
- 75 Strayer, D. 1988. Life history of a lacustrine ostracod. *Hydrobiologia* 160(2):189–191.
- 76 Wiggins, G. B. 1996. Larvae of the North American caddisfly genera (Trichoptera). University of Toronto Press, Toronto, Ontario.
- 80 Merritt, R. W., K. W. Cummins, M. B. Berg, J. A. Novak, M. J. Higgins, K. J. Wessell, and J. L. Lessard. 2002. Development and application of macroinvertebrate functional group approach in the bioassessment of remnant river oxbows in southwest Florida. *Journal of the North American Benthological Society* 21:290–310.
- 82 Smith, D. G. 2001. Pennak's freshwater invertebrates of the United States: Porifera to crustacea. 4th edition. John Wiley & Sons, Inc. New York
- 83 Epler J. H. 2006. Identification manual for the aquatic and semi-aquatic Heteroptera of Florida. FL Dept. of Environmental Protection, Tallahassee, FL. 186 pp.
- 84 Cheng, L. and C. H. Fernando. 1970. The water-striders of Ontario: (Heteroptera: Gerridae). Life Sciences miscellaneous publications. Royal Ontario Museum, Toronto, Ontario, Canada
- 85 Schriever, T. A., M. T. Bogan, K. S. Boersma, M. Cañedo-Argüelles, K. L. Jaeger, J. D. Olden, D. A. Lytle. 2015. Hydrology shapes taxonomic and functional structure of desert stream invertebrate communities. *Freshwater Science* 34(2):399-409.
- 86 Eaton, K. A. (1983). The life history and production of *Chaoborus punctipennis* (Diptera: Chaoboridae) in Lake Norman, North Carolina, USA. *Hydrobiologia* 106: 247-252.
- 87 McPherson, J. E. 1986. Life history of *Neoplea striola* (Hemiptera: Pleidae). *The Great Lakes Entomologist* 19(4):217-220.
- 88 Baker, F. C. 1945. The molluscan family Planorbidae. Collation, Revision, and Additions by H.J. Van Cleave. University of Illinois Press. Urbana, Illinois. xxxvi + 530 pp.
- 89 Borror, D. J, C. A. Triplehorn, and N. F. Johnson. 1989. An introduction to the study of insects. 6th edition. Thomson Learning, Inc. USA
- 90 Wiggins, G. B. 2000. Larvae of the North American Caddisfly Genera (Trichoptera). 2nd ed.
- 91 Thorp, J. H. and A. P. Covich. 2010. Ecology and Classification of North American freshwater invertebrates. Third edition. Elsevier Inc. London UK. 1020 pgs.