

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
 AIR AND LAND PROTECTION DIVISION
 ENVIRONMENTAL SERVICES PROGRAM
 Standard Operating Procedures**

SOP #: MDNR-WQMS-209 EFFECTIVE DATE: May 31, 2005

SOP TITLE: Taxonomic Levels for Macroinvertebrate Identifications

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APPROVED BY: Earl Pabst, Director, ESP

SUMMARY OF REVISIONS: Changes to reflect new taxa and current taxonomy

APPLICABILITY: Applies to Water Quality Monitoring Section personnel who perform community level surveys of aquatic macroinvertebrates in wadeable streams of Missouri.

DISTRIBUTION: MoDNR Intranet
ESP SOP Coordinator

RECERTIFICATION RECORD:

Date Reviewed				
Initials				

1.0 GENERAL OVERVIEW

- 1.1 This Standard Operating Procedure (SOP) is designed to be used as a reference by biologists who analyze aquatic macroinvertebrate samples from Missouri. Its purpose is to establish consistent levels of taxonomic resolution among agency, academic and other biologists. The information in this SOP has been established by researching current taxonomic literature. It should assist an experienced aquatic biologist to identify organisms from aquatic surveys to a consistent and reliable level. The criteria used to set the level of taxonomy beyond the genus level are the systematic treatment of the genus by a professional taxonomist and the availability of a published key.
- 1.2 The consistency in macroinvertebrate identification allowed by this document is important regardless of whether one person is conducting an aquatic survey over a period of time or multiple investigators wish to compare results. It is especially important to provide guidance on the level of taxonomic identification when calculating metrics that depend upon the number of taxa. This SOP should be used in conjunction with the Semi-Quantitative Macroinvertebrate Stream Bioassessment Project Procedure—Section IV (Identification and Recording of Organisms).
- 1.3 Taxonomy is a changing and imperfect science. Therefore, this document will be revised on a triennial basis, or more often if necessary.
- 1.4 Appendix A of this document contains a list of aquatic taxa by name as well as entries for taxa codes, reference documents, biotic indices, and functional feeding groups.
- 1.5 Appendix B of this document contains a bibliography of taxonomic references for aquatic organisms.

2.0 TAXA CODE

A code is assigned to each taxon to facilitate the access of this information within a database. The taxa codes that are used in Appendix A have been assigned from the Benthos Coding List developed by the Missouri Department of Conservation.

3.0 REFERENCE

The number listed in bold is the primary taxonomic key used for the purposes of this SOP. Numbers contained in brackets indicate references that also contain valuable taxonomic information, but are used as secondary references because of outdated taxonomy or terminology, taxonomic additions, or other reasons. References can be found in Appendix B, the Taxonomic Bibliography. The number of the reference in the bibliography corresponds to the value found in the reference columns on the pages in Appendix A.

4.0 BIOTIC INDEX VALUE

Biotic Index values are numeric indicators of the taxon's tolerance to pollution or other environmental stressors. These values, noted in Appendix A, are under development for Missouri. Temporary values, ranging from 0 to 10, have been assigned using:

Lenat, D. R. 1993. A Biotic Index for the Southeastern United States: derivation and list of tolerance values with criteria for assigning water quality ratings. *J. N. Amer. Benthol. Soc.* 12(3): 279-290.

Huggins, D. G. & M. F. Moffett. 1988. Proposed Biotic and Habitat Indices for use in Kansas Streams. Report No. 35 of the Kansas Biological Survey, Lawrence, Kansas. 128 pp.

Hilsenhoff, W.L. 1987. An improved biotic index of organic stream pollution. *Great Lakes Entomologist* 20(1): 31-39.

Bode, R. W., M. A. Novak & L. E. Abele. 1996. Quality Assurance Work Plan for Biological Stream Monitoring in New York State. New York State Department of Environmental Conservation, Albany, New York. 89 pp.

5.0 FUNCTIONAL FEEDING GROUP (FFG)

Functional feeding groups, noted in Appendix A, for aquatic invertebrates were determined using Merritt & Cummins 1996. Functional group designations and their abbreviations are: Shredders = Sh; Collector/gatherers = Co; Collector/filterers = Fi; Scrapers = Sc; Macrophyte Piercers = Mp; Predators = Pr; Herbivores = He; Parasites = Pa; and Unknown = Unk.

6.0 BIOTIC INDEX SOURCE

The capital letter in the BI source column corresponds to the references above as follows: (L) = Lenat; (K) = Huggins and Moffett; (H) = Hilsenhoff; and (B) = Bode et al. Listed BI values from the Huggins and Moffett reference represent the average of NOD (nutrients and oxygen-demanding substances) and SSS (suspended solids and sediments) values adjusted to a 0 to 10 scale. The following symbols are also occasionally used to indicate that the listed Biotic Index value was indirectly derived: * = the genus BI value is the average of the species with recorded BI values in that genus; ** = the species BI value was taken from the listed value for the genus; *** = the family BI value was calculated from the values of the two most common genera; **** = the value listed is from another species; ***** = the value listed is from another family.

Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
Annelida											
					Branchiobdellida		128	6	7	Co	B
					Hirudinea						
					Arhynchobdellida						
					Erpobdellidae		308	7.8	9 8	Pa	L
					Rhynchobdellida						
					Glossiphoniidae		258	7	9 8	Pr	B
					Piscicolidae		278		9 8	Pa	
					Oligochaeta						
					Oligochaeta		349		7	Co	
					Haplotaxida						
					Haplotaxidae		219		6	Co	
					Lumbricina						
					Lumbricidae		134	8	7	Co	B
					Lumbriculida						
					Lumbriculidae		198	8	6	Co	B
					Lumbriculus variegatus	(Muller)	201	8	6	Co	B
					Tubificida						
					Enchytraeidae		189	10	6	Co	L
					Tubificidae		138	9.2	6	Co	L,B*
					Aulodrilus		153	8	6	Co	B
					Branchiura sowerbyi	Beddard	151	8.4	6	Co	L
					Ilyodrilus templetoni	(Southern)	155	9.4	6	Co	L
					Limnodrilus angustipenis		163		6	Co	
					Limnodrilus cervix	Brinkhurst	161	9.8	6	Co	L
					Limnodrilus claparedianus	Ratzel	164	10	6	Co	B
					Limnodrilus hoffmeisteri	Claparede	162	9.8	6	Co	L
					Potamothrix		166	10	6	Co	B
					Potamothrix bavaricus	(Oschmann)	167		6	Co	
					Quistradrilus multisetosus	(Smith)	171	10	6	Co	B
					Tasserkidrilus superiorensis	(Brinkhurst &	175	8.8	6	Co	L**
					Tubifex tubifex	(Muller)	141	10	6	Co	L
Arthropoda											
					Arachnoidea						
					"Hydracarina"						
					Acarina		9025	5.7	3	Pa,Pr	L

*FFG = Functional Feeding Group

<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Family</i>	Sub-Family	Preferred Taxon I.D. Levels	<i>Author</i>	<i>Taxa Code</i>	<i>B. I. Value</i>	<i>References</i>	<i>FFG*</i>	<i>BI Source</i>
	Crustacea	Amphipoda	Allocrangonyctidae		Allocrangonyx		540		12 13	Co	
			Crangonyctidae		Bactrurus	Hay	590		12	Co	
					Crangonyx		550	8	10 12	Co	L
					Stygobromus		580		12	Co	
					Synurella		560		10 12	Co	
			Gammaridae		Gammarus		520	6.9	10 12	Co	L
			Hyalellidae		Hyalella azteca	Sassure	511	7.9	10	Co	L
		Decapoda	Cambaridae		Cambaridae		708		3	Co	
					Cambarellus puer	Hobbs	711		14 11	Co	
					Cambarellus shufeldtii	(Faxon)	712		14 11	Co	
					Cambarus diogenes	Girard	721		14 11	Co	
					Cambarus hubbsi	Creaser	722		14 11	Co	
					Cambarus hubrichti	Hobbs	723		14 11	Co	
					Cambarus maculatus	Hobbs & Pflieger	724		14 11	Co	
					Cambarus setosus	Faxon	725		14 11	Co	
					Fallicambarus fodiens	(Cottle)	731		14 11	Co	
					Faxonella clypeata	(Hay)	741		14 11	Co	
					Orconectes		750	2.7	14 11	Co	L
					Orconectes eupunctus	Williams	751		14 11	Co	
					Orconectes harrisonii	(Faxon)	752		14 11	Co	
					Orconectes hylas	(Faxon)	753		14 11	Co	
					Orconectes immunis	(Hagen)	754		14 11	Co	
					Orconectes lancifer	(Hagen)	755		14 11	Co	
					Orconectes longidigitus	(Faxon)	756		14 11	Co	
					Orconectes luteus	(Creaser)	757		14 11	Co	
					Orconectes macrus	Williams	758		14 11	Co	
					Orconectes marchandi	Hobbs	759		14 11	Co	
					Orconectes medius	(Faxon)	760		14 11	Co	
					Orconectes meeki	(Faxon)	761		14 11	Co	
					Orconectes neglectus		762		14 11	Co	
					Orconectes ozarkae	Williams	765		14 11	Co	
					Orconectes palmeri	(Faxon)	766		14 11	Co	
					Orconectes peruncus	(Creaser)	767		14 11	Co	
					Orconectes punctimanus	(Creaser)	769		14 11	Co	
					Orconectes quadruncus	(Creaser)	771		14 11	Co	
					Orconectes rusticus	(Girard)	772		14 11	Co	

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Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
			Cambaridae		Orconectes virilis	(Hagen)	773		14 11	Co	
					Orconectes williamsi	Fitzpatrick	774		14 11	Co	
					Procambarus acutus	(Girard)	781		14 11	Co	
					Procambarus clarkii	(Girard)	782		14 11	Co	
					Procambarus gracilis	(Bundy)	783		14 11	Co	
					Procambarus liberorum	Fitzpatrick	784		14 11	Co	
					Procambarus viaeviridis	(Faxon)	785		14 11	Co	
			Palaemonidae		Macrobrachium ohione	(Smith)	671		2	Co	
					Palaemonetes kadiakensis	Rathbun	651		2	Co	
		Isopoda			Caecidotea		400	8	10 15	Co	B
			Asellidae		Caecidotea (Blind & Unpigmented)		410		10 15	Co	
					Lirceus		380	7.7	10 15	Co	L
		Insecta									
			Coleoptera		Coleoptera		7499		19		
					Dryopidae		6728		19	Sc,Co	
			Dryopidae		Helichus		6740	5.4	19	Sc,Co	L
					Helichus basalis	LeConte	6741	5.5	16	Sc,Co	K
					Helichus fastigiatus	(Say)	6742	5.5	16	Sc,Co	K
					Helichus lithophilus	(Germar)	6743	5.5	16	Sc,Co	K
					Helichus striatus	LeConte	6744	4.6	16	Sc,Co	K
			Dytiscidae		Dytiscidae		6118		19	Pr	
					Acilius		6130		19	Pr	
					Agabus		6120	5	19	Pr	B
					Brachyvatus		6140		19	Pr	
					Copelatus		6150	9.1	19	Pr	L
					Coptotomus		6160	9	19	Pr	L
					Cybister		6170	4.6	19	Pr	K
					Desmopachria		6180	3.7	19	Pr	K
					Dytiscus		6190	3.7	19	Pr	K
					Graphoderus		6200	3.7	19	Pr	K
					Hydaticus		6205		19	Pr	
					Hydroporus		6210	8.9	19	Pr	L
					Hydrovatus		6220	3.7	19	Pr	K
					Hygrotus		6230	1.9	19	Pr	K
					Ilybius		6250	3.7	19	Pr	K
					Laccophilus		6260	10	19	Pr	L
					Liodessus		6275		19	Pr	

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			Dytiscidae		Neoporus		6312	8.9	17	Pr	L	
					Oreodytes		6179	4.6	19	Pr	K	
					Rhantus		6280	3.7	19	Pr	K	
					Thermonectus		6300	3.7	19	Pr	K	
					Uvarus		6310	4.6	19	Pr	K	
		Elmidae			Elmidae		6798	4	19	Co,Sc	H	
					Ancyronyx variegatus	(Germar)	6801	6.9	16	Co,Sc	L	
					Dubiraphia		6810	6.4	19	Co	L	
					Heterelmis		6840		19	Co		
					Macronychus glabratus	Say	6851	4.7	16	Co	L	
					Microcylloepus pusillus	(LeConte)	6860	2.1	19	Co	L	
					Optioservus sandersoni	Collier	6881	2.7	19	18	Sc,Co	L
					Stenelmis		6890	5.4	19	Co,Sc	L	
					Stenelmis beameri	Sanderson	6891	4.6	16	Co,Sc	K	
					Stenelmis bicarinata	LeConte	6892	5	16	Co,Sc	H	
					Stenelmis cheryl	Brown	6893	5.5	16	Co,Sc	K	
					Stenelmis crenata	(Say)	6894	5	16	Co,Sc	H	
					Stenelmis decorata	Sanderson	6895	5.5	16	Co,Sc	K	
					Stenelmis exigua	Sanderson	6896	4.6	16	Co,Sc	K	
					Stenelmis exilis	Sanderson	6897		16	Co,Sc		
					Stenelmis grossa	Sanderson	6899		16	Co,Sc		
					Stenelmis lateralis	Sanderson	6900	4.6	16	Co,Sc	K	
					Stenelmis lignicola	Schmude &	6901		16	Co,Sc		
					Stenelmis mera	Sanderson	6902		16	Co,Sc		
					Stenelmis sandersoni	Musgrave	6903	5.5	16	Co,Sc	K	
					Stenelmis sexlineata	Sanderson	6904	6.4	16	Co,Sc	K	
					Stenelmis xylonastis	Schmude &	6905		16	Co,Sc		
		Gyrinidae			Dineutus		6010	5.5	19	Pr	L	
					Gyretes		6020	3.7	19	Pr	K	
					Gyrinidae		6008		19	Pr		
					Gyrinus		6030	6.3	19	Pr	L	
		Haliplidae			Haliplus		6060	5	19		B	
					Peltodytes		6090	8.5	19	He	L	
		Helophoridae			Helophorus		6540	7.9	19	Sh	L	
		Hydraenidae			Hydraena		7190		19			
					Ochthebius		7191		19			
		Hydrochidae			Hydrochus		6580	4.6	19	Sh	K	
		Hydrophilidae			Hydrophilidae		6398		19	Pr,Co		
					Berosus		6400	8.6	19	He,Co	L	

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Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source	
			Hydrophilidae		Chaetarthria		6420	5.5	19	Pr,Co	K	
					Crenitis		6430		19	Pr,Co		
					Cymbiodyta		6450	5.5	19	Pr,Co	K	
					Dibolocelus		6470	5.5	19	Pr,Co	K	
					Enochrus		6480	8.5	19	Pr,Co	L	
					Helochares		6500	5	19	Pr,Co	B	
					Helocombus		6520	5.5	19	Pr,Co	K	
					Hydrobius		6560	5	19	Pr,Co	B	
					Hydrochara		6435	6	19	Co	K	
					Hydrophilus		6600	4.6	19	Pr,Co	K	
					Laccobius		6630	8	19	Pr,Co	L	
					Paracymus		6650	7.3	19	Pr,Co	K	
					Sperchopsis		6670	6.5	19	Pr,Co	L	
					Tropisternus		6680	9.8	19	Pr,Co	L	
		Lutrochidae			Lutrochus		6950	2.75	19		K	
		Noteridae			Hydrocanthus		6360	6.9	19	Pr	L	
					Suphisellus		6370		19	Pr		
		Psephenidae			Ectopria nervosa	(Melsheimer)	6726	4.3	16	Sc	L	
					Psephenus herricki	(DeKay)	6721	2.5	16	Sc	L	
		Salpingidae			Salpingidae		7178		19			
		Scirtidae			Cyphon		6780		19	Sh		
					Scirtes		6770	5	19	Sh	B	
		Diptera			Diptera		8999		23			
		Athericidae			Atherix		8700	2.1	23	Pr	L	
		Ceratopogonidae			Ceratopogonidae		8208	6	23	Co,Sc	H	
				Ceratopogoninae	Ceratopogoninae		8239	6	23	Pr,Co	B	
				Dasyheleinae	Dasyheleinae		8209	6	23	Co,Sc	B	
				Forcipomyiinae	Forcipomyiinae		8219	6	23	Co	B	
		Chaoboridae			Chaoborus		8170	8.5	23	Pr	L	
					Eucorethra underwoodi	Underwood	8175		23	Pr		
		Chironomidae			Chironomidae		8338	8	22		H	
				Chironominae	Acalcarella		8432		22	29, 30	Co	
				Chironominae	Apedilum		8455		22	29, 30		
				Chironominae	Axarus		8433	6	22	29, 30	Co	B
				Chironominae	Chironomus		8435	9.8	22	29, 30	Co,Sh	L
				Chironominae	Cladopelma		8436	2.5	22	29, 30	Co	L
				Chironominae	Cladotanytarsus		8482	3.7	22	29, 30	Co,Fi	L
				Chironominae	Constempellina		8481	4	22	29, 30	Co,Fi	B

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<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Family</i>	<i>Sub-Family</i>	<i>Preferred Taxon I.D. Levels</i>	<i>Author</i>	<i>Taxa Code</i>	<i>B. I. Value</i>	<i>References</i>	<i>FFG*</i>	<i>BI Source</i>
			Chironomidae	Chironominae	Cryptochironomus		8437	7.4	22 29, 30	Pr	L*
				Chironominae	Cryptotendipes		8441	6.1	22 29, 30	Co	L
				Chironominae	Demicryptochironomus		8444	2.1	22 29, 30	Co	L
				Chironominae	Dicrotendipes		8438	7.9	22 29, 30	Co,Fi	L
				Chironominae	Einfeldia		8471	9	22 29, 30		B
				Chironominae	Endochironomus		8430	7.5	22 29, 30	Sh,Co	L
				Chironominae	Endotribelos		8434		22 29, 30		
				Chironominae	Glyptotendipes		8440	8.5	22 29, 30	Sh,Co	L
				Chironominae	Goeldichironomus		8468	9	22 29, 30		K
				Chironominae	Harnischia		8345	7.5	22 29, 30		L
				Chironominae	Hyporhygma		8447		22 29, 30	Sh	
				Chironominae	Kiefferulus		8446	10	22 29, 30	Co	L
				Chironominae	Lauterborniella		8448	5.5	22 29, 30	Co	K
				Chironominae	Lipiniella		8449		22 29, 30	Co	
				Chironominae	Microchironomus		8456	8	22 29, 30	Co	B
				Chironominae	Micropsectra		8487	1.4	22 29, 30	Co	L
				Chironominae	Microtendipes		8450	6.2	22 29, 30	Co,Fi	L
				Chironominae	Nilothauma		8451	5.5	22 29, 30		L
				Chironominae	Omisus		8452		22 29, 30		
				Chironominae	Pagastiella		8458	2.6	22 29, 30		L
				Chironominae	Parachironomus		8454	9.2	22 29, 30	Pr,Co	L
				Chironominae	Paracladopelma		8442	4.8	22 29, 30	Co	L
				Chironominae	Paralauterborniella		8443	8	22 29, 30		H
				Chironominae	Paratanytarsus		8488	7.7	22 29, 30	Co,Fi	L
				Chironominae	Paratendipes		8453	5.3	22 29, 30	Co	L
				Chironominae	Phaenopsectra		8457	6.2	22 29, 30	Sc,Co	L
				Chironominae	Polypedilum		8460	7.4	22	Sh,Co	L*
				Chironominae	Polypedilum convictum grp		8461	5.3	27 25	Sh,Co	L
				Chironominae	Polypedilum fallax grp		8462	6.7	27 25	Sh,Co	L
				Chironominae	Polypedilum halterale grp		8459	7.2	27 25	Sh,Co	L
				Chironominae	Polypedilum illinoense grp		8465	9.2	27 25	Sh,Co	L
				Chironominae	Polypedilum scalaenum grp		8466	8.7	27 25	Sh,Co	L
				Chironominae	Pseudochironomus		8472	4.2	22 29, 30	Co	L
				Chironominae	Rheotanytarsus		8490	6.4	22 29, 30	Fi	L
				Chironominae	Robackia		8445	3.4	22 29, 30	Co	L*
				Chironominae	Saetheria		8463	8.1	22 29, 30	Co	L
				Chironominae	Stelechomyia		8439	4.6	22 29, 30		L
				Chironominae	Stempellina		8492	2	22 29, 30	Co	L
				Chironominae	Stempellinella		8491	5.3	22 29, 30	Co	L

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Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
			Chironomidae	Chironominae	Stenochironomus		8464	6.4	22 29, 30	Co,Sh	L
				Chironominae	Stictochironomus		8467	6.7	22 29, 30	Co,Sh	L
				Chironominae	Sublettea		8494	1.7	22 29, 30	Co,Fi	L
				Chironominae	Tanytarsus		8493	6.7	22 29, 30	Co,Fi	L
				Chironominae	Thienemanniola		8420		22 29, 30		
				Chironominae	Tribelos		8470	6.6	22 29, 30	Co	L
				Chironominae	Xenochironomus		8469	7	22 29, 30	Pr	L
				Chironominae	Zavreliella		8978	7	22 29, 30		K
				Diamesinae	Diamesa		8982	7.7	22 29, 30	Co	L
				Diamesinae	Potthastia		8984	4.7	22 29, 30	Co	L*
				Diamesinae	Pseudodiamesa		8985	4.6	22 29, 30	Co	K
				Diamesinae	Sympotthastia		8986	5.7	22 29, 30	Co	L
				Diamesinae	Syndiamesa		8998		22 29, 30	Co	
				Orthoclaadiinae	Brillia		8384	5.2	22 29, 30	Sh,Co	L
				Orthoclaadiinae	Bryophaenocladus		8424		22 29		
				Orthoclaadiinae	Cardiocladus		8995	6.2	22 29, 30	Pr	L
				Orthoclaadiinae	Chaetocladus		8495	8	22 29, 30	Co	H
				Orthoclaadiinae	Corynoneura		8385	6.2	22 29, 30	Co	L
				Orthoclaadiinae	Cricotopus bicinctus	(Meigen)	8382	8.7	24 29, 30	Sh,Co	L
				Orthoclaadiinae	Cricotopus trifascia	(Edwards)	8377	6	24 22, 29	Sh	B
				Orthoclaadiinae	Cricotopus/Orthocladus		8386	6.5	22 29, 30	Sh,Co	L*
				Orthoclaadiinae	Diplocladius		8387	7.7	22 29, 30	Co	L
				Orthoclaadiinae	Epoicocladus		8997	4	22 29, 30	Co,Pa	B
				Orthoclaadiinae	Eukiefferiella		8390	4	22 29, 30	Co,Pr	B
				Orthoclaadiinae	Eukiefferiella brevicealcar grp		8392	4	20	Co,Pr	B
				Orthoclaadiinae	Eukiefferiella pseudomontana grp		8398	8	20	Co,Pr	B
				Orthoclaadiinae	Gymnometriocnemus		8348	7	22 29		K
				Orthoclaadiinae	Heterotrissocladus		8427	5.4	22 29, 30	Co	L
				Orthoclaadiinae	Hydrobaenus		8415	9.6	22 29, 30	Sc,Co	L
				Orthoclaadiinae	Krenosmittia		8425		22 29, 30		
				Orthoclaadiinae	Limnophyes		8979	8	22 29, 30	Co	
				Orthoclaadiinae	Lopescladius		8399	2.2	24 22		L
				Orthoclaadiinae	Mesocricotopus	Brundin	8383		22 29, 30	Co	
				Orthoclaadiinae	Mesosmittia		8411	7	22 29, 30		K
				Orthoclaadiinae	Nanocladus		8402	7.2	22 29, 30	Co	L
				Orthoclaadiinae	Oliveridia		8417		22 29, 30		
				Orthoclaadiinae	Orthocladus (Euorthocladus)		8401	6.3	22 29, 30	Co	L
				Orthoclaadiinae	Orthocladus (Symposiocladus)		8414	5.4	22 29, 30	Co	L
				Orthoclaadiinae	Parakiefferiella		8404	5.9	22 29, 30	Co	L

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			Chironomidae	Orthoclaadiinae	Parametriccnemus		8405	3.7	22 29, 30	Co	L
				Orthoclaadiinae	Paraphaenocladus		8406	4	22 29, 30	Co	B
				Orthoclaadiinae	Parorthocladus		8407		22 29, 30	Co	
				Orthoclaadiinae	Psectrocladius		8408	3.8	22 29, 30	Co,Sh	L
				Orthoclaadiinae	Pseudorthocladus		8409	0	22 29, 30	Co	L
				Orthoclaadiinae	Pseudosmittia		8413	4	22 29, 30		K
				Orthoclaadiinae	Rheocricotopus		8410	7.3	22 29, 30	Co,Sh	L*
				Orthoclaadiinae	Smittia		8412	4	22 29, 30	Co	K
				Orthoclaadiinae	Synorthocladus		8428	4.7	22 29, 30		L
				Orthoclaadiinae	Thienemanniella		8416	6	22 29, 30	Co	L
				Orthoclaadiinae	Tvetenia		8419	4	22 29, 30	Co	L
				Orthoclaadiinae	Tvetenia bavarica grp		8421	3.9	20	Co	L
				Orthoclaadiinae	Tvetenia discoloripes grp		8422	4	20	Co	L
				Orthoclaadiinae	Xylotopus		8418	6.6	22 29, 30	Sh	L
				Prodiamesinae	Monodiamesa		8983	7	22 29, 30	Co	B
				Tanypodinae	Ablabesmyia		8340	6.4	22 29, 30	Pr	L*
				Tanypodinae	Clinotanypus		8987	9.1	22 29, 30	Pr	L
				Tanypodinae	Coelotanypus		8991	6.2	22 29, 30	Pr	L
				Tanypodinae	Djalmabatista		8988	6.4	22 29, 30	Pr	K
				Tanypodinae	Fittkauimyia		8346		22 29, 30	Pr	
				Tanypodinae	Krenopelopia		8352		22 29, 30	Pr	
				Tanypodinae	Labrundinia		8994	5.3	22 29, 30	Pr	L*
				Tanypodinae	Larsia		8354	8.3	22 29, 30	Pr	L
				Tanypodinae	Monopelopia		8355		22 29, 30	Pr	
				Tanypodinae	Natarsia		8993	8	22 29, 30	Pr	B
				Tanypodinae	Nilotanypus		8356	6	22 29, 30	Pr	B
				Tanypodinae	Paramerina		8381	2.8	22 29, 30	Pr	L
				Tanypodinae	Pentaneura		8362	4.6	22 29, 30	Pr	L
				Tanypodinae	Procladius		8358	9.3	22 29, 30	Pr	L
				Tanypodinae	Psectrotanypus		8992	10	22 29, 30	Pr	L
				Tanypodinae	Tanypus		8989	9.6	22 29, 30	Pr	L
				Tanypodinae	Thienemannimyia grp.		8990	6	22 29, 30	Pr	B
				Tanypodinae	Zavrelimyia		8981	9.3	22 29, 30	Pr	L
			Culicidae		Aedes		8120	5.5	28	Co,Fi	K
					Anopheles		8130	9.1	28	Fi	L
					Culex		8140	10	28	Fi	L
					Culiseta		8137	5.5	28	Co,Fi	K
					Mansonia		8150		28	Co,Fi	
					Dixa		8510	2.8	23	Co	L

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			Dixidae		Dixella		8520		23	Co	
			Dolichopodidae		Dolichopodidae		8708	9.7	23	Pr	L
			Empididae		Empididae		8728	6	23	Pr,Co	B
					undescribed Empididae		8750	4.6	23		K
					Chelifera		8733	6	23	Pr	H
					Clinocera		8734	6	23	Pr	H
					Hemerodromia		8730	6	23	Pr,Co	H
					Rhamphomyia		8752		23	Pr	
					Roederiodes		8740		23	Pr	
		Ephydriidae			Ephydriidae		8798	5.5	23	Co,Sh	K
		Muscidae			Muscidae		8868	6	23	Pr	B
		Psychodidae			Pericoma		8180	4	23	Co	B
					Psychoda		8190	9.9	23	Co	L
					Telmatoscopus		8200		23	Co	
		Scatophagidae			Scatophagidae		8848		23	Sh,He	
		Sciomyzidae			Sciomyzidae		8828		23		
		Simuliidae			Simuliidae		8298	6	26	Fi	H
					Cnephia		8299	4	26	Fi	L
					Prosimulium		8320	2.6	26	Fi	L
					Simulium		8300	4.4	26	Fi	L
					Stegopterna		8315	5	26	Fi	H*
		Stratiomyidae			Stratiomyidae		8528		23		
					Allognosta		8565		23		
					Caloparyphus		8530		23	Co	
					Euparyphus		8540		23	Co,Sc	
					Myxosargus		8550		23	Co	
					Nemotelus		8560	7.3	23	Co	K
					Odontomyia		8570	7.3	23	Co	K
					Oxycera		8580		23	Sc	
					Stratiomys		8585	7.3	23	Co	K
		Syrphidae			Syrphidae		8768	8.25	23	Co	K
		Tabanidae			Chlorotabanus		8640		23		
					Chrysops		8610	7.3	23	Pr	L
					Silvius		8620		23	Pr	
					Tabanidae		8608		23		
					Tabanus		8630	9.7	23	Pr	L
		Tanyderidae			Tanyderidae		8498		23		
					Protoplasa fitchii		8501		23		
		Tipulidae			Tipulidae		8008	3	21	Sh,Co	H

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			Tipulidae		Antocha		8020	4.6	21	Co	L	
					Cryptolabis		8045		21			
					Dactylolabis		8030	3.7	21	Sh,Co	K	
					Dicranota		8040	0	21	Pr	L	
					Erioptera		8050	5.5	21	Co	K	
					Gonomyia		8057	5.5	21	Co	K	
					Hexatoma		8060	4.7	21	Pr	L	
					Limnophila		8070	4.6	21	Pr	K	
					Limonia		8080	10	21	Sh	L	
					Molophilus		8097		21			
					Ormosia		8090	4.6	21	Co	K	
					Paradelphomyia		8095		21			
					Pedicia		8100	4.6	21	Pr	K	
					Pilaria		8108	7	21		H	
					Prionocera		8025		21	Sh		
					Pseudolimnophila		8110	7.3	21	Co	L	
					Rhabdomastix		8115		21	Co		
					Tipula		8010	7.7	21	Sh,Co	L	
Ephemeroptera			Ameletidae		Ameletus		1013	7	36	Sc,Co	H	
					Ameletus lineatus	Traver	1011	2.1	35	Sc,Co	L	
					Ameletus ludens	Needham	1012	0	35	Sc,Co	H	
			Baetidae		Baetidae		1028	4	36	Co	H	
					Acentrella		1030	4	36	41	Co	B
					Acerpenna		1040	3.7	36	Co	L	
					Apobaetis		1046	6	36	Co	K	
					Baetis		1050	6	36	41	Co	B
					Barbaetis		1048		36	41	Co	
					Callibaetis		1070	9.3	36	Co	L	
					Camelobaetidius		1067		36			
					Centroptilum		1080	6.3	36	Co	L	
					Cloeon		1085	7.4	36	Co	L	
					Dipheter		1090	5	36		H	
					Fallceon		1094	6	36		K	
					Heterocloeon		1100	2	36	41	Sc	B
					Labiobaetis		1097	6	36	41		K
					Paracloeodes		1108	5	36		Sc	K
					Plauditus		1037	6	36	41	Co	B
					Procloeon		1115	6.3	36	Co	L	

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			Baetidae		Pseudocentropiloides		1112		36	Co	
					Pseudocloeon		1035		101	Co	
			Baetiscidae		Baetiscidae		1468	3	36	Co,Sc	H
					Baetisca lacustris	McDunnough	1471	4	45	Co,Sc	B
					Baetisca obesa	(Say)	1472	4	45	Co,Sc	B
			Caenidae		Caenidae		1428	7	36	Co,Sc	H
					Amercaenis		1450		36	47	Fi
					Brachycercus		1430	3.5	36	Co	L
					Caenis		1440	7.6	36	Co,Sc	L
					Caenis amica	Hagen	1442	7.6	46	Co,Sc	L**
					Caenis anceps	Traver	1441	7.6	46	Co,Sc	L**
					Caenis hilaris	(Say)	1443	7.6	46	Co,Sc	L**
					Caenis latipennis	Banks	1444	7.6	46	Co,Sc	L**
					Caenis maccafferti	Provonsha	1446	7.6	46	Co,Sc	L**
					Caenis punctata	McDunnough	1445	7.6	46	Co,Sc	L**
					Caenis tardata	McDunnough	1447	7.6	46	Co,Sc	L**
					Cercobrachys		1455		36	Co	
			Ephemerellidae		Ephemerellidae		1288	1	36	Co,Sc	H
					Attenella attenuata	(McDunnough)	1291	1	31	Co	B
					Dannella		1300	2	36	Co	B
					Dannella lita	(Burks)	1301	0	43	Co	L
					Dannella provonshai	McCafferty	1303		43	Co	
					Dannella simplex	(McDunnough)	1302	3.9	43	Co	L
					Ephemerella		1320	1.7	36	Co,Sc	L*
					Ephemerella argo	Burks	1321		33	Co,Sc	
					Ephemerella aurivillii	Bengtsson	1322	0	33	Co,Sc	B
					Ephemerella catawba	Traver	1327	4	33	Co,Sc	L
					Ephemerella dorothea	Needham	1323	1	33	Co,Sc	H
					Ephemerella excrucians	Walsh	1326	2	33	Co,Sc	H
					Ephemerella invaria	(Walker)	1324	2.2	33	Co,Sc	L
					Ephemerella needhami	McDunnough	1328	0	33	Co,Sc	L
					Ephemerella subvaria	McDunnough	1329	1	33	Co,Sc	H
					Eurylophella		1340	3	36	Co	L*
					Eurylophella aestiva	(McDunnough)	1341	5	38	Co	H
					Eurylophella bicolor	(Clemens)	1342	5.1	38	Co	L
					Eurylophella enoensis	Funk	1350	5	38	Co	H****
					Eurylophella funeralis	(McDunnough)	1345	2.3	38	Sh	L
					Eurylophella macdunnoughi	Funk	1351		38	Co	
					Eurylophella verisimilis	(McDunnough)	1349	0.3	38	Co	L

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			Ephemerellidae		Serratella		1360	1.9	36	Co	L*
					Serratella deficiens	(Morgan)	1361	2.7	32	Co	L
					Serratella frisoni	(McDunnough)	1362		32	Co	
					Serratella serratoides	(McDunnough)	1366	1.5	32	Co	L
					Serratella sordida	(McDunnough)	1367	2	32	Co	H
		Ephemeridae			Ephemeridae		1628	4	36	Co,Pr	H
					Ephemera		1630	2.2	36	Co,Pr	L
					Ephemera guttulata	Pictet	1631	2	42	Co,Pr	B
					Ephemera simulans	Walker	1632	3.7	42	Co,Pr	K
					Ephemera traversae	Spieth	1634		42	Co,Pr	
					Ephemera varia	Eaton	1633		42	Co,Pr	
					Hexagenia		1650	4.7	36	Co	L
					Hexagenia atrocaudata	McDunnough	1651	3.7	42	Co	K
					Hexagenia bilineata	(Say)	1652	6.4	42	Co	K
					Hexagenia limbata	Serville	1653	4.6	42	Co	K
					Hexagenia rigida	McDunnough	1655	5.5	42	Co	K
		Heptageniidae			Heptageniidae		1138	4	36	Pr	H
					Epeorus		1140	1.2	36	Co	L
					Heptagenia		1150	2.8	36	Sc,Co	L
					Leucrocuta		1180	0	36	Sc,Co	L
					Macdunnoa		1190	4.6	36	Sc,Co	K
					Nixe		1158	2	36	Sc,Co	B
					Rhithrogena		1220	0.4	36	Co	L
					Stenacron		1240	7.1	36	Co	L
					Stenonema		1260	3.4	36	Sc,Co	L*
					Stenonema bednariki	McCafferty	1261	3.4	44	Sc,Co	L*
					Stenonema exiguum	Traver	1262	5	34	Sc,Co	H
					Stenonema femoratum	(Say)	1263	7.5	34	Sc,Co	L
					Stenonema integrum	(McDunnough)	1264	5.5	34	Sc,Co	L
					Stenonema luteum	(Clemens)	1271		34	Sc,Co	
					Stenonema mediopunctatum	(McDunnough)	1267	1.7	34	Sc,Co	L
					Stenonema modestum	(Banks)	1266	5.8	34	Sc,Co	L
					Stenonema pulchellum	(Walsh)	1268	3	34	Sc,Co	H
					Stenonema terminatum	(Walsh)	1269	4.5	34	Sc,Co	L
					Stenonema vicarium	(Walker)	1270	1	34	Sc,Co	L
		Isonychiidae			Isonychiidae		1119	2	36	Fi	H
					Isonychia		1120	3.8	36	Fi	L
					Isonychia bicolor	(Walker)	1123	2	40	Fi	H
					Isonychia rufa	McDunnough	1128	3.7	40	Fi	K

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			Isonychiidae		Isonychia sayi	Burks	1124		40	Fi	
					Isonychia sicca	Burks	1125	3.7	40	Fi	K
			Leptoxyphidae		Leptoxyphidae		1388	4	36	Co	H
					Tricorythodes		1390	5.4	36	Co	L
			Leptophlebiidae		Leptophlebiidae		1498	2	36	Co,Sc	H
					Choroterpes		1500	2	36	Co,Sc	H
					Habrophlebiodes		1520	6	36	Sc,Co	H
					Leptophlebia		1530	6.4	36	Co	L
					Neochoroterpes		1545		36	41 Co,Sc	
					Paraleptophlebia		1550	1.2	36	Co,Sh	L
					Traverella		1570		36	Co	
		Neophemeridae			Neophemeridae		1408		36	Co	
					Neophemera		1410		36	Co	
		Palingeniidae			Palingeniidae		1698	6.4	36	Co	K
					Pentagenia vittigera	(Walsh)	1701	6.4	42	Co	K
		Polymitarciidae			Polymitarciidae		1738	2	36	Co	H
					Ephoron		1740	4.6	36	Co	K
					Ephoron album	(Say)	1741	4.6	42	Co	K
					Ephoron leukon	Williamson	1742	1.5	42	Co	L
					Tortopus primus	(McDunnough)	1771	5.5	42	Co	K
		Potamanthidae			Potamanthidae		1598	4	36	Fi	H
					Anthopotamus		1600	1.6	36	Fi	L
		Pseudironidae			Pseudironidae		1208	5	36	Pr	H
					Pseudiron centralis	McDunnough	1211	5	36	Pr	H
		Siphonuridae			Siphonuridae		1008	7	36	Co,Sc	H
					Siphonurus		1020	2.6	36	Co,Sc	L
		Hemiptera									
		Belostomatidae			Belostoma		4170	9.8	48	Pr	L
					Lethocerus		4180	4.6	48	Pr	K
		Corixidae			Corixidae		4248	6	48	Pr,Mp	K
					Corisella		4250	6.4	48	Pr	K
					Hesperocorixa		4260	5	48	Mp	B
					Palmarcorixa		4266	5.5	48		K
					Ramphocorixa		4268	8	48		K
					Sigara		4270	4.6	48	Mp,Co	K
					Trichocorixa		4290	5.5	48	Pr,Co	K
		Gelastocoridae			Gelastocoris		4460	7.3	48	Pr	K
		Gerridae			Gerridae		4078		48	Pr	
					Aquarius		4092	6.4	48	Pr	K

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			Gerridae		Gerris		4080	6.4	48	Pr	K
					Metrobates		4130	6.4	48	Pr	K
					Rheumatobates		4110	6.4	48	Pr	K
					Trepobates		4140	6.4	48	Pr	K
		Hebridae			Hebrus		4390	6.4	48	Pr	K
					Merragata		4400	7.3	48	Pr	K
		Hydrometridae			Hydrometra		4010	7.3	48	Pr	K
		Mesoveliidae			Mesovelia		4370	6.4	48	Pr	K
		Naucoridae			Pelocoris		4300		48		
		Nepidae			Nepa		4210	4.6	48	Pr	K
					Ranatra		4200	7.5	48	Pr	L
					Ranatra fusca	Beauvois	4202	7.3	49	Pr	K
					Ranatra kirkaldyi	Bueno	4201	5.5	49	Pr	K
					Ranatra nigra	Herrich-Schaffer	4203	6.4	49	Pr	K
		Notonectidae			Buenoa		4340	5.5	48	Pr	K
					Notonecta		4350	5.5	48	Pr	K
		Pleidae			Neoplea		4230	5.5	48	Pr	K
		Saldidae			Saldidae		4428		48	Pr	
					Micracanthia		4430	7.3	48	Pr	K
					Pentacora		4433	6.4	48	Pr	K
					Saldula		4440	6.4	48	Pr	K
		Veliidae			Veliidae		4028		48	Pr	
					Microvelia		4030	6.4	48	Pr	K
					Platyvelia		4042		48	Pr	
					Rhagovelia		4050	7.3	48	Pr	K
					Steinovelia		4046		48	Pr	
		Hymenoptera									
			Braconidae		Braconidae		9028		50	Pa	
			Scelionidae		Scelionidae		9008		50	Pa	
		Lepidoptera									
			Cossidae		Cossidae		7790		51	He	
			Nepticulidae		Nepticula		7740		51	He	
			Noctuidae		Noctuidae		7768		51	He	
					Bellura		7770		51	He	
					Simyra		7780		51	He	
		Pyralidae			Pyralidae		7708		51	He	
					Nymphula		7710	7	51	He	H
					Parapohnx		7715	5	51	He	H
					Petrophila		7720	1.8	51	Sc,He	L

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Phylum	Class	Order	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
		Family								
		Pyrilidae		Schoenobius		7730		51	He	
		Megaloptera								
		Corydalidae		Chauliodes		7540	4	53	Pr	H
				Chauliodes pectinicornis	(Linnaeus)	7542	4	52	Pr	H
				Chauliodes rastricornis	Rombur	7544	4	52	Pr	H
				Corydalus		7560	5.6	53	Pr	L
				Nigronia fasciatus	(Walker)	7571	6.2	54	Pr	L
				Nigronia serricornis	(Say)	7572	5.5	54	Pr	L
		Sialidae		Sialis		7510	7.5	53	Pr	L
		Neuroptera								
		Sisyridae		Climacia		7610	6.5	53	Pr	L
				Sisyra		7620		53	Pr	
		Odonata								
		Aeshnidae		Aeshnidae		2328	3	55 57	Pr	H
				Aeshna		2330	6.4	55 57, 56	Pr	K
				Anax		2340	6.4	55 57, 56	Pr	K
				Basiaeschna janata	(Say)	2351	7.7	55 57, 56	Pr	L
				Boyeria		2353	6.3	55 57, 56	Pr	L
				Epiaeschna heros	(Fabricius)	2357	3.7	55 57, 56	Pr	K
				Nasiaeschna pentacantha	(Rambur)	2361	8	55 57, 56	Pr	L
		Calopterygidae		Calopterygidae		2008	5	58 57	Pr	H
				Calopteryx		2010	8.3	58 57, 56	Pr	L
				Hetaerina		2020	6.2	58 57, 56	Pr	L
		Coenagrionidae		Coenagrionidae		2108	9	58 57	Pr	H
				Amphiagrion		2110	2.8	58 57, 56	Pr	K
				Argia		2120	8.7	58 57, 56	Pr	L
				Chromagrion		2150		58 57, 56	Pr	
				Enallagma		2160	9	58 57, 56	Pr	L
				Ischnura		2190	9.4	58 57, 56	Pr	L
				Nehalennia		2210		58 57, 56	Pr	
				Telebasis		2250		58 57	Pr	
		Cordulegastridae		Cordulegaster		2610	6.1	55 57, 56	Pr	L
		Gomphidae		Gomphidae		2408	7	55 57	Pr	K
				Arigomphus		2410	6.4	55 57, 56	Pr	K
				Dromogomphus		2430	6.3	55 57, 56	Pr	L
				Erpetogomphus		2440	5.5	55 57, 56	Pr	K
				Gomphus		2460	6.2	55 57, 56	Pr	L
				Hagenius brevistylus	Selys	2491	4	55 57, 56	Pr	L
				Ophiogomphus		2500	6.2	55 57, 56	Pr	L

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Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
			Gomphidae		Progomphus obscurus	(Rambur)	2521	8.7	55 57, 56	Pr	L
					Stylogomphus albistylus	(Hagen)	2551	4.8	55 57, 56	Pr	L
			Lestidae		Stylurus		2560	4	55 57, 56	Pr	H
					Lestidae		2058	9	58 57	Pr	H
					Archilestes		2060	6.4	58 57, 56	Pr	K
					Lestes		2080	5.5	58 57, 56	Pr	K
			Libellulidae		Libellulidae		2628		55	Pr	
				Corduliinae	Corduliinae		2648	5	55	Pr	H
				Corduliinae	Epicordulia		2681	5.6	55 57, 56	Pr	L
				Corduliinae	Helocordulia		2686		55 57, 56	Pr	
				Corduliinae	Neurocordulia		2690	4	55 57, 56	Pr	L*
				Corduliinae	Somatochlora		2730	8.9	55 57, 56	Pr	L
				Corduliinae	Tetragoneuria		2750	8.5	55 57, 56	Pr	L
				Libellulinae	Brachymesia		2770		55 57, 56	Pr	
				Libellulinae	Celithemis		2780	3.7	55 57, 56	Pr	K
				Libellulinae	Dythemis		2790	3.7	55 57, 56	Pr	K
				Libellulinae	Erythemis		2800	7.7	55 57, 56	Pr	L
				Libellulinae	Erythrodiplax		2820		55 57	Pr	
				Libellulinae	Leucorrhinia		2830	6.4	55 57, 56	Pr	K
				Libellulinae	Libellula		2840	9.8	55 57, 56	Pr	L
				Libellulinae	Orthemis ferruginea	(Fabricus)	2871	4.6	55	Pr	K
				Libellulinae	Pachydiplax longipennis	(Burmeister)	2901	9.6	55 57, 56	Pr	L
				Libellulinae	Pantala		2910	6.4	55 57, 56	Pr	K
				Libellulinae	Perithemis		2920	10	55 57, 56	Pr	L
				Libellulinae	Plathemis		2925	10	55 57, 56	Pr	L
				Libellulinae	Sympetrum		2930	7.3	55 57, 56	Pr	L
				Libellulinae	Tramea		2970		55 57, 56	Pr	
				Macromiinae	Didymops		2650	5.5	55 57, 56	Pr	K
				Macromiinae	Macromia		2660	6.7	55 57, 56	Pr	L
			Petaluridae		Petaluridae		2308		55 57	Pr	
					Tachopteryx thoreyi	(Hagen)	2311	3.7	55 57, 56	Pr	K
		Plecoptera									
			Capniidae		Capniidae		3008	1	63 62	Sh	H
					Allocapnia		3020	2.8	63 62	Sh	L
					Nemocapnia carolina	Banks	3061		60	Sh	
					Paracapnia angulata	Hanson	3071	0.2	60	Sh	L
			Chloroperlidae		Chloroperlidae		3438	1	63	Pr,Co	H
					Alloperla		3440	1.4	63 62	Pr	L
					Haploperla		3460	1.3	63 62	Pr,Co	L

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<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Family</i>	<i>Sub-Family</i>	<i>Preferred Taxon I.D. Levels</i>	<i>Author</i>	<i>Taxa Code</i>	<i>B. I. Value</i>	<i>References</i>	<i>FFG*</i>	<i>BI Source</i>
			Leuctridae		Leuctridae		3128	0	63	Sh	H
					Leuctra		3130	0.7	63 62	Sh	L
					Zealeuctra		3140	0	63 62	Sh	B
			Nemouridae		Nemouridae		3198	2	63	Sh,Sc	H
					Amphinemura		3200	3.4	63 62	Sh	L
					Prostoia		3230	6.1	63 62	Sh,Sc	L
					Shipsa rotunda	(Claassen)	3236	0.3	63	Sh,Sc	L
			Perlidae		Perlidae		3508	3	63	Pr	L
					Acroneuria		3510	1.4	63 61, 62	Pr	L*
					Agnetina capitata	(Pictet)	3531	2	60	Pr	H
					Agnetina flavescens	(Walsh)	3532	0	60	Pr	L
					Attaneuria ruralis	(Hagen)	3551	2.75	60		K
					Neoperla		3560	1.6	63 62	Pr	L
					Paragnetina		3580	1.8	63 62	Pr	L*
					Paragnetina kansensis	(Banks)	3581	2	60	Pr	L
					Paragnetina media	(Walker)	3582	1	60	Pr	H
					Perlesta		3590	0	63 62	Pr,Co	L
					Perlinella drymo		3621	0	60	Pr	L
					Perlinella ephyre		3622	0	60	Pr	L
			Perlodidae		Perlodidae		3638	2	63	Pr	H
					Clioperla clio	(Newman)	3641	4.8	63	Pr	L
					Diploperla		3650	2	63 62	Pr	L
					Helopicus nalatus	(Frison)	3671	5.75	60	Pr	K
					Hydroperla		3680	2.75	63 62	Pr	K
					Hydroperla crosbyi	(Needham &	3681	3.7	60	Pr	K
					Hydroperla fugitans	(Needham &	3682	2.75	60	Pr	K
					Isoperla		3690	2	63 62	Pr,Co	L
			Pteronarcyidae		Pteronarcyidae		3848	0	63 62	Sh	H
					Pteronarcys pictetii	Hagen	3851	1.7	60	Sh	L
			Taeniopterygidae		Taeniopterygidae		3258	2	63	Sh,Co	H
					Strophopteryx		3280	2.5	63 62	Sh	L
					Strophopteryx arkansae	Ricker and Ross	3281		60	Sh	
					Strophopteryx cucullata	Frison	3283		60	Sh	
					Strophopteryx fasciata	(Burmeister)	3282	3	60	Sh	H
					Taeniopteryx		3300	6.3	63 62	Sh,Co	L
					Taeniopteryx burksi	Ricker and Ross	3301	5.8	60 59	Sh,Co	L
					Taeniopteryx lita	Frison	3302		60 59	Sh,Co	
					Taeniopteryx lonicera	Ricker and Ross	3305	2	60 59	Sh,Co	H
					Taeniopteryx maura	(Pictet)	3303		60 59	Sh,Co	

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Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
			Taeniopterygidae		Taeniopteryx metequi	Ricker and Ross	3304	1.4	60 59	Sh,Co	L
					Taeniopteryx parvula	Banks	3306	2	60 59	Sh,Co	H
		Trichoptera									
			Brachycentridae		Brachycentridae		5578	1	75	Fi	H
					Brachycentrus		5580	2.2	74 70	Fi	L
					Brachycentrus americanus	Banks	5581	1	65	Fi	H
					Brachycentrus lateralis	(Say)	5582	0.4	65	Fi	L
					Brachycentrus numerosus	Say	5584	1.8	65	Fi	L
					Brachycentrus occidentalis	Banks	5585	1	65	Fi	H
					Micrasema		5590	0.6	74 70	Sh	L
			Glossosomatidae		Glossosomatidae		5268	0	75	Sc,Co	H
					Agapetus		5290	0	74 70	Sc,Co	L
					Glossosoma		5270	1.5	74 70	Sc	L
					Protoptila		5310	2.8	74 70	Sc	L
			Helicopsychidae		Helicopsychidae		5858	3	75	Sc	H
					Helicopsyche		5860	0	74 70	Sc	L
			Hydropsychidae		Hydropsychidae		5128	4	75	Fi	H
					Ceratopsyche		5129	1.4	70 74	Fi	L
					Ceratopsyche morosa grp		5169	2.95	72	Fi	L*
					Ceratopsyche piatrix	Ross	5171		73	Fi	
					Ceratopsyche slossonae	Banks	5175	0	73	Fi	L
					Cheumatopsyche		5130	6.6	74 70	Fi	L
					Diplectrona		5220	2.2	74 70	Fi	L
					Hydropsyche		5160	4	74 70	Fi	L
					Macrostemum		5210	3.6	74 70	Fi	L
					Potamyia flava	(Hagen)	5201	5	74	Fi	H
			Hydroptilidae		Hydroptilidae		5338	4	75		H
					Agraylea		5340	8	74 70	He,Sc	H
					Hydroptila		5360	6.2	74 70	He,Sc	L
					Ithytrichia		5430	4	74 70	Sc	B
					Leucotrichia		5460	4.3	74 70	Sc,Co	L
					Neotrichia		5480	2	74 70	Sc	H
					Ochrotrichia		5380	6.4	74 70	Co,He	K
					Orthotrichia		5440	7.2	74 70	Co,He	L
					Oxyethira		5400	3	74 70	He,Co	H
					Stactobiella		5420	2.75	74 70	Sh	K
			Lepidostomatidae		Lepidostomatidae		5798	1	75	Sh	H
					Lepidostoma		5800	1	74 70	Sh	L
			Leptoceridae		Leptoceridae		5868	4	75	Sh,Co	H

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Phylum	Class	Order	Family	Sub-Family	Preferred Taxon I.D. Levels	Author	Taxa Code	B. I. Value	References	FFG*	BI Source
			Leptoceridae		Ceraclea		5870	2.3	74 70	Co,Sh	L
					Leptocerus americanus	(Banks)	5891	4.6	74 70	Sh	K
					Mystacides		5920	3.5	74 70	Sh,Co	L
					Nectopsyche		5900	4.1	74 70	Sh,Co	L*
					Nectopsyche albida	(Walker)	5901	5.5	69 68	Sh,Co	K
					Nectopsyche candida	(Hagen)	5902	3.8	69 68	Sh,Co	L
					Nectopsyche diarina	(Ross)	5903	5.5	69 68	Sh,Co	K
					Nectopsyche exquisita	(Walker)	5904	4.2	69 68	Sh,Co	L
					Nectopsyche pavidata	(Hagen)	5906	4.2	69 68	Sh,Co	L
					Nectopsyche spiloma	(Ross)	5907	4.6	69	Sh,Co	K
					Oecetis		5960	5.7	74 66	Pr,He	L
					Setodes		5930	0.9	74 70	Co,Pr	L
					Trienodes		5940	3.7	74 67	Sh	L*
		Limnephilidae			Limnephilidae		5628	4	75	Sh,Co	H
					Frenesia		5635	0	74 70	Sh	H
					Glyphopsyche missouri	Ross	5741		71	Sh	
					Hesperophylax		5680	3	74 70	Sh,He	H
					Hydatophylax		5650	2.3	74 70	Sh,Co	L
					Ironoquia		5630	7.3	74 70	Sh	L
					Leptophylax		5690		74 70	Sh,He	
					Limnephilus		5710	2.75	74 70	Sh,He	K
					Platycentropus		5730	4	74 70	Sh	H
					Pseudostenophylax		5640	0	74 70	Sh,Co	H
					Pycnopsyche		5660	2.3	74 70	Sh	L
		Molannidae			Molannidae		5848	6	75	Sc,Co	H
					Molanna		5850	3.9	74 70	Sc,Co	L
		Odontoceridae			Odontoceridae		5828	0	75	Sh,Sc	H
					Marilia		5830		74 70	Sh	
					Psilotreta		5840	0	74 70	Sc,Co	L
		Philopotamidae			Philopotamidae		5008	3	75	Fi	H
					Chimarra		5030	2.8	74 70	Fi	L
					Dolophilodes		5010	1	74 70	Fi	L
					Wormaldia		5020	0.4	74 70	Fi	L
		Phryganeidae			Phryganeidae		5508	4	75	Sh,Pr	H
					Agrypnia		5510	4.6	74 70	Sh	K
					Banksiola		5513		74 70	Sh,Pr	
					Phryganea		5520	4.6	74 70	Sh,Pr	K
					Ptilostomis		5530	6.7	74 70	Sh,Pr	L
		Polycentropodidae			Polycentropodidae		5058	6	75	Pr,Fi	H

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<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Family</i>	<i>Sub-Family</i>	<i>Preferred Taxon I.D. Levels</i>	<i>Author</i>	<i>Taxa Code</i>	<i>B. I. Value</i>	<i>References</i>	<i>FFG*</i>	<i>BI Source</i>
			Polycentropodidae		Cernotina		5063	4.6	74 70	Pr	K
					Cyrenellus fraternus	(Banks)	5061	7.4	74 70	Fi	L
					Neureclipsis		5070	4.4	74 70	Fi,Sh	L
					Nyctiophylax		5080	0.9	70 74	Pr,Co	L
					Phylocentropus		5120	5.6	74 70	Fi	L
					Polycentropus		5090	3.5	74 70	Pr,Co	L
		Psychomyiidae			Psychomyiidae		5048	2	75	Co,Sc	H
					Lype diversa	(Banks)	5051	4.3	74 70	Sc	L
					Psychomyia		5052	2.7	74 70	Co,Sc	L*
		Rhyacophilidae			Rhyacophilidae		5238	0	75	Pr	H
					Rhyacophila		5240	0.8	74 64	Pr	L*
		Uenoidae			Uenoidae		5748	4	75	Sc	H*****
					Neophylax		5750	1.6	74 70	Sc	L
Mollusca											
	Bivalvia										
		Unionida									
		Unionidae			Unionidae		9538		80 79	Fi	
		Veneroidea									
		Corbiculidae			Corbicula		9950	6.3	80 77	Fi	L
		Dreissenidae			Dreissena polymorpha	(Pallas)	9961	8	80	Fi	B
		Sphaeriidae			Sphaeriidae		9908		80 77	Fi	
					Pisidium		9910	6.8	80 77	Fi	L
					Sphaerium		9930	7.7	80 77	Fi	L
	Gastropoda										
		Limnophila									
		Ancylidae			Ancylidae		9428	7.1	78 76, 82	Sc	L***
					Ferrissia		9430	6.9	78 76, 82	Sc	L
					Laevapex		9450	7.3	78 76, 82	Sc	L
					Rhodacmaea		9460		78 76, 82	Sc	
		Lymnaeidae			Lymnaeidae		9288		78 76, 82	Sc	
					Fossaria		9290		78 76, 82	Sc	
					Pseudosuccinea		9310	7.2	78 76, 82	Sc	L
					Stagnicola		9320	8	78 76, 82	Sc	L
		Physidae			Physella	Haldeman	9340	9.1	78 76, 82	Sc	L
		Planorbidae			Planorbidae		9358		78 76, 82	Sc	
					Gyraulus		9360	8	78 76, 82	Sc	B
					Helisoma		9370	6.5	78 76, 82	Sc	L

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<i>Phylum</i>	<i>Class</i>	<i>Order</i>	<i>Family</i>	<i>Sub-Family</i>	<i>Preferred Taxon I.D. Levels</i>	<i>Author</i>	<i>Taxa Code</i>	<i>B. I. Value</i>	<i>References</i>	<i>FFG*</i>	<i>BI Source</i>
			Planorbidae		Menetus		9380	8.4	78 76, 82	Sc	L
					Planorbella		9390		78 76, 82	Sc	
					Planorbula		9400		78 76, 82	Sc	
					Promenetus		9410		78 76, 82	Sc	
		Mesogastropoda									
			Hydrobiidae		Gastropoda		9499		78 76, 82	Sc	
			Pleuroceridae		Hydrobiidae		9118	8	78 76, 82	Sc	B
					Elimia		9220	2.5	78 76, 82	Sc	L
					Leptoxis		9240	1.6	78 76, 82	Sc	L
					Lithasia		9250		78 76, 82	Sc	
					Pleurocera		9260	6	78 76, 82	Sc	B
			Pomatipsidae		Pomatiopsis lapidaria	(Say)	9212		2 82	Sc	
			Valvatidae		Valvata		9070	8	78 76, 82	Sc	B
			Viviparidae		Campeloma		9080	6.7	78 76, 82	Sc	L
					Cipangopaludina		9087		78 76, 82	Sc	
					Lioplax		9090		78 76, 82	Sc	
					Viviparus		9100	6	78 76, 82	Sc	B
		Nematomorpha									
			Chordodidae		Chordodidae		118		5	Pa	
			Gordiidae		Gordiidae		108		5	Pa	
		Platyhelminthes									
		Tricladida									
			Planariidae		Planariidae		8	7.5	4	Co	L

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APPENDIX B
MDNR-WQMS-209
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