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								
		Branchiobdellida		128	6	**7**	Co	B
Hirudinea								
Arhynchobdellida								
Erpobdellidae		Erpobdellidae		308	7.8	**9** 8	Pa	L
Rhynchobdellida								
Glossiphoniidae		Glossiphoniidae		258	7	**9** 8	Pr	B
Piscicolidae		Piscicolidae		278		**9** 8	Pa	
Oligochaeta								
		Oligochaeta		349		**7**	Co	
Haplotaxida								
Haplotaxidae		Haplotaxis		219		**6**	Co	
Lumbricina								
Lumbricidae		Lumbricidae		134	8	**7**	Co	B
Lumbriculida								
Lumbriculidae		Lumbriculidae		198	8	**6**	Co	B
		Lumbriculus variegatus	(Muller)	201	8	**6**	Co	B
Tubificida								
Enchytraeidae		Enchytraeidae		189	10	**6**	Co	L
Tubificidae		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

Phylum / *Class* / ***Order*** / *Family*	**Sub-Family**	Preferred Taxon I.D. Levels	*Author*	*Taxa Code*	*B. I. Value*	*References*		*FFG**	*BI Source*
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	

*FFG = Functional Feeding Group

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									
Asellidae		Caecidotea		400	8	**10**	15	Co	B
		Caecidotea (Blind & Unpigmented)		410		**10**	15	Co	
		Lirceus		380	7.7	**10**	15	Co	L
Insecta									
Coleoptera									
		Coleoptera		7499		**19**			
Dryopidae		Dryopidae		6728		**19**		Sc,Co	
		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	

*FFG = Functional Feeding Group

Phylum
Class
Order

Family	**Sub-Family**	Preferred Taxon I.D. Levels	*Author*	*Taxa Code*	*B. I. Value*	*References*		*FFG**	*BI Source*
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
	Dashyheleinae	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

*FFG = Functional Feeding Group

Phylum
Class
Order

Family	**Sub-Family**	Preferred Taxon I.D. Levels	*Author*	*Taxa Code*	*B. I. Value*	*References*		*FFG**	*BI Source*
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	
	Orthocladiinae	Brillia		8384	5.2	**22**	29, 30	Sh,Co	L
	Orthocladiinae	Bryophaenocladius		8424		**22**	29		
	Orthocladiinae	Cardiocladius		8995	6.2	**22**	29, 30	Pr	L
	Orthocladiinae	Chaetocladius		8495	8	**22**	29, 30	Co	H
	Orthocladiinae	Corynoneura		8385	6.2	**22**	29, 30	Co	L
	Orthocladiinae	Cricotopus bicinctus	(Meigen)	8382	8.7	**24**	29, 30	Sh,Co	L
	Orthocladiinae	Cricotopus trifascia	(Edwards)	8377	6	**24**	22, 29	Sh	B
	Orthocladiinae	Cricotopus/Orthocladius		8386	6.5	**22**	29, 30	Sh,Co	L*
	Orthocladiinae	Diplocladius		8387	7.7	**22**	29, 30	Co	L
	Orthocladiinae	Epoicocladius		8997	4	**22**	29, 30	Co,Pa	B
	Orthocladiinae	Eukiefferiella		8390	4	**22**	29, 30	Co,Pr	B
	Orthocladiinae	Eukiefferiella brevicalcar grp		8392	4	**20**		Co,Pr	B
	Orthocladiinae	Eukiefferiella pseudomontana grp		8398	8	**20**		Co,Pr	B
	Orthocladiinae	Gymnometriocnemus		8348	7	**22**	29		K
	Orthocladiinae	Heterotrissocladius		8427	5.4	**22**	29, 30	Co	L
	Orthocladiinae	Hydrobaenus		8415	9.6	**22**	29, 30	Sc,Co	L
	Orthocladiinae	Krenosmittia		8425		**22**	29, 30		
	Orthocladiinae	Limnophyes		8979	8	**22**	29, 30	Co	
	Orthocladiinae	Lopescladius		8399	2.2	**24**	22		L
	Orthocladiinae	Mesocricotopus	Brundin	8383		**22**	29, 30	Co	
	Orthocladiinae	Mesosmittia		8411	7	**22**	29, 30		K
	Orthocladiinae	Nanocladius		8402	7.2	**22**	29, 30	Co	L
	Orthocladiinae	Oliveridia		8417		**22**	29, 30		
	Orthocladiinae	Orthocladius (Euorthocladius)		8401	6.3	**22**	29, 30	Co	L
	Orthocladiinae	Orthocladius (Symposiocladius)		8414	5.4	**22**	29, 30	Co	L
	Orthocladiinae	Parakiefferiella		8404	5.9	**22**	29, 30	Co	L

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Chironomidae	**Orthocladiinae**	Parametriocnemus		8405	3.7	**22**	29, 30	Co	L
	Orthocladiinae	Paraphaenocladius		8406	4	**22**	29, 30	Co	B
	Orthocladiinae	Parorthocladius		8407		**22**	29, 30	Co	
	Orthocladiinae	Psectrocladius		8408	3.8	**22**	29, 30	Co,Sh	L
	Orthocladiinae	Pseudorthocladius		8409	0	**22**	29, 30	Co	L
	Orthocladiinae	Pseudosmittia		8413	4	**22**	29, 30		K
	Orthocladiinae	Rheocricotopus		8410	7.3	**22**	29, 30	Co,Sh	L*
	Orthocladiinae	Smittia		8412	4	**22**	29, 30	Co	K
	Orthocladiinae	Synorthocladius		8428	4.7	**22**	29, 30		L
	Orthocladiinae	Thienemanniella		8416	6	**22**	29, 30	Co	L
	Orthocladiinae	Tvetenia		8419	4	**22**	29, 30	Co	L
	Orthocladiinae	Tvetenia bavarica grp		8421	3.9	**20**		Co	L
	Orthocladiinae	Tvetenia discoloripes grp		8422	4	**20**		Co	L
	Orthocladiinae	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	
Dixidae		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	
Ephydridae		Ephydridae		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
		Diphetor		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		Pseudocentroptiloides		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 macafferti	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 traverae	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** 37	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
Leptohyphidae		Leptohyphidae		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	
Neoephemeridae		Neoephemeridae		1408		**36**	Co	
		Neoephemera		1410		**36**	Co	
Palingeniidae		Palingeniidae		1698	6.4	**36**	Co	K
		Pentagenia vittigera	(Walsh)	1701	6.4	**42**	Co	K
Polymitarcyidae		Polymitarcyidae		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
Siphlonuridae		Siphlonuridae		1008	7	**36**	Co,Sc	H
		Siphlonurus		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
		Palmacorixa		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
		Parapoynx		7715	5	**51**	He	H
		Petrophila		7720	1.8	**51**	Sc,He	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*
Pyralidae		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
		Stylurus		2560	4	**55** 57, 56	Pr	H
Lestidae		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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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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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
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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 pavida	(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
		Triaenodes		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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Polycentropodidae		Cernotina		5063	4.6	**74**	70	Pr	K
		Cyrnellus 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									
		Pelecypoda		9999		**80**		Fi	
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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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								
		Gastropoda		9499		**78** 76, 82	Sc	
Hydrobiidae		Hydrobiidae		9118	8	**78** 76, 82	Sc	B
Pleuroceridae		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
General References

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Turbellaria

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