

# TAXONOMIC REFINEMENT OF THE EPT SECTION OF THE FDEP STATEWIDE BIOLOGICAL DATABASE<sup>1</sup>

Report prepared by  
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The Statewide Biological Database (SBD) of the Florida Department of Environmental Protection includes a large section of the insect orders Ephemeroptera (Mayflies), Plecoptera (Stoneflies) and Trichoptera (Caddisflies) (EPT). These insect groups are generally considered sensitive to various forms of perturbations in freshwater ecosystems and are an integral component of most bioassessment protocols. Furthermore, the SBD is an essential tool for the FDEP Nonpoint Source Management Program to document the impacts of nonpoint sources of pollution on receiving waters and to determine the effectiveness of the state's nonpoint source management practices and programs. The objective of this project was to examine and evaluate the EPT taxonomic nomenclature used in the database and identify taxa in which refinements should be made to conform with presently accepted taxonomic classification.

A comprehensive review of the EPT taxa in the SBD has revealed two major problems: i) the use of invalid taxonomic names and classification, and ii) the inclusion of taxa that do not occur within Florida. The details of these problems are documented in the account below. The classification code numbers following each taxon are those used in the SBD. Brief comments concerning nomenclatorial changes, taxa not occurring in Florida, and general taxonomic information are included.

## **I. EPHEMEROPTERA (460504)**

### **Family Heptageniidae (460504001)**

1. *Stenonema modestum* (460504001002016) [= *Stenonema annexum* (460504001002001)]. The occurrence of the species in Florida is doubtful.
2. *Stenonema pulchellum* (460504001002002). The species does not occur in Florida.
3. *Stenonema mexicanum integrum* (460504001002010). The species *Stenonema mexicanum* has two subspecies, *Stenonema mexicanum integrum* and *Stenonema mexicanum mexicanum* and the latter occurs in Florida.
4. *Stenonema femoratum* [= *Stenonema tripunctatum* (4605040010022024)]. The species has never been collected in Florida.
5. *Heptagenia* (460500001006). Only one species, *H. flavescens*, is represented in Florida.
6. *Epeorus* (460504001007). The genus does not occur in Florida.

7. *Stenacron interpunctatum* (460504001013001) [= *Stenacron frontale* (460504001013001045); = *Stenonema proximum* (460504001013001045)].
8. *Stenacron minnetonka* [= *Stenonema minnetonka* (94605040010130075)]. The species does not occur in Florida.
9. *Macdunnoa* (4605044001014). Only one species, *M. brunnea*, is represented in Florida.
10. *Anepeorus* [= *Spinadis* (460504001015)]. The genus has not been collected from Florida.
11. *Anepeorus simplex* [= *Spinadis wallacei* (460504001015001)]. The species has never been collected in Florida.

### Family Pseudironidae

1. *Pseudiron* (460504001010). This monotypic genus is represented by the species *Pseudiron centralis* [= *Pseudiron meridionalis* (460504001010002)] and has recently been transferred to the family Pseudironidae.

### Family Baetidae (460504002)

1. *Procloeon* [= *Cloeon* (460504002001)]. The genus *Cloeon* is no longer recognized in Florida nor through out the Southeastern U.S. All species of *Cloeon* previously recorded from the state have now been transferred to the genus *Procloeon*.
2. *Procloeon rubropictum* [= *Cloeon rubropictum* (460504002001001)].
3. *Pseudocloeon* (460504002002). All previously reported species in the genus from Florida have recently been transferred to genus *Plauditus*
4. *Plauditus bimaculatus* [= *Pseudocloeon bimaculatus* (460504002002005)].
5. *Plauditus armillatus* (4605040020020125) [= *Pseudocloeon parvulum* (460504002002012)].
6. *Plauditus punctiventris* (4605040020020135) [= *Pseudocloeon punctiventris* (460504002002013)].
7. *Plauditus alachua* [= *Pseudocloeon alachua* (9460504002002017)].
8. \* *Pseudocloeon frondale* [= *Labiobaetis frondalis* (460504002004034) (= *Baetis australis* (460504002004019))].
9. \* *Pseudocloeon ephippiatum* [= *Labiobaetis ephippiatus* (= *Baetis ephippiatus* (460504002004029))].
10. \* *Pseudocloeon propinquum* [= *Labiobaetis propinquus* (4605040020040545) (= *Baetis propinquus* (460504002004054); = *Baetis spinosus* (460504002004060))].
11. *Acerpenna pygmaea* (460504002004055S). Spelling error *pygmaeus* (neutral), *pygmaea* (feminine) to conform with the generic gender. [= *Baetis pygmaeus* (460504002004055); = *Baetis spiethi* (460504002004059)].
12. *Centroptilum* (460504002005). The genus *Centroptilum* is no longer recognized in Florida. The two species, *C. hobbsi* and *C. viridocularis*, known from the state have been transferred to the genus *Procloeon*.
13. *Procloeon hobbsi* [= *Centroptilum hobbsi* (460504002005011)].
14. *Procloeon viridocularis* [= *Centroptilum viridocularis* (460504002005023)].
15. *Paracloeodes* (460504002006). The genus has not been collected from Florida.

### Family Siphonuridae

1. Siphonuridae (460504003). The family has not been collected from Florida
2. Siphuridae (460504003S). One of the old names of the family Siphonuridae; as previously mentioned, the family has not been collected from Florida.

3. *Siphonurus* (460504003001). This genus has not been collected from Florida.

**Family Ameletidae**

1. *Ameletus* (460504003007). The genus now belongs to the family Ameletidae and does not occur in Florida.

**Family Isonychiidae**

1. *Isonychia arida* (460504004003022) [= *Isonychia pictipes* (460504004003014)].

**Family Metretopodidae (460504006)**

1. **Note:** The Statewide Biological Database (SBD) includes all the Florida species of *Siphloplecton* [*S. speciosum* (460504006001005), *S. fuscum* (460504006001006), *S. brunneum* (460504006001007), *S. simile* (460504006001008)]. Presently, Florida *Siphloplecton* are identifiable to species only in the adults.

**II. PLECOPTERA (460515)**

**Family: Pteronarcyidae (460515001)**

1. *Pteronarcys pictetii* (4605155001). Although the species has been reported in Florida, it is most likely a misidentified *P. dorsata*, the only *Pteronarcys* species presently known in the state. *Pteronarcys pictetii*, has never been recorded below the southern border of Tennessee.
2. *Pteronarcys nobilis* (460515001001009) is a junior synonym of *P. dorsata* (460515001001004).

**Family: Peltoperlidae (460515002)**

1. *Peltoperla* (460515002001). The presence of the genus in Florida is very doubtful. The only two North American species of the genus have never been collected south of Virginia.

**Family: Nemouridae (460515003)**

1. *Nemoura* (460515003002). The genus has not been collected from Florida or the Southeast.
2. *Amphinemura delosa* (460515003003001). The species remains unknown in Florida although it has been reported in Georgia. *Amphinemura nigratta* is the only species of the genus presently represented in Florida.

**Family: Taeniopterygidae (460515005)**

1. *Taeniopteryx maura* (460515005001004). This geographically widespread species has never been reported from Florida although its southern geographic range extends to Georgia and Alabama.
2. *Taeniopteryx nivalis* (460515005001008). The occurrence of the species in Florida is very doubtful. The species has never been reported from the Southeastern U.S.

**Family: Perlidae (460515007)**

1. *Acroneuria perplexa* (460515007001010). The species has been collected as far south as Georgia and Alabama but never in Florida.

2. *Perlinella* (460515009005). The genus belongs to the family Perlidae (460515007) not Chloroperlidae (460515009).
3. *Ataperla ephyre* (4605150090050015S) is a junior synonym of *Perlinella ephyre* (460515009005002) not *Perlinella drymo* (460515009005001).
4. *Perlesta* (460515009006). The genus belongs to the family Perlidae (460515007) not Chloroperlidae (460515009).
5. *Hastaperla* (460515009008S). The genus is a junior synonym of *Haploperla*, hence *Hastaperla brevis* (460515009008002S) is a junior synonym of *Haploperla brevis*.

**Family: Perlodidae (460515008)**

1. *Isoperla lata* (460515008001014). The presence of this species in Florida is very doubtful. It has never been recorded south of Tennessee.
2. *Isogenus* (460515008002). The genus is a junior synonym of *Helopicus* (460515008003), thus making the species *Isogenus subvarians* (460515008002012) a synonym of *Helopicus subvarians* (460515008003001).

**III. TRICHOPTERA (460528)**

**Family Rhyacophilidae (460528001)**

1. *Rhyacophila ledra* (460528001001037). The species has not been recorded from Florida, although its occurrence in the state is somewhat likely.
2. *Rhyacophila torva* (460528001001047). The species has not been recorded from Florida. It is unlikely to occur in the state and has not been recorded from the Eastern Gulf Coastal Plain.

**Family Philopotamidae (460528002)**

1. *Chimarra*. **Note:** Larvae within the genus cannot be identified to species with reliable accuracy, therefore any database records indicating a species level identification are suspect.
2. *Chimarra feria* (460528002002002). The species is unlikely to occur in Florida. The closest record is from northern Alabama.
3. *Chimarra socia* (460528002002005). The species is unlikely to occur in Florida. The southern-most range is into northern Alabama. Previous records of *C. socia* in Florida most likely refer to *C. parasocia*.
4. *Chimarra perigua* (460528002002006S). *Chimarra perigua* is not a recognized name, either past or present.

**Family Hydropsychidae (460528004)**

1. *Cheumatopsyche*. **Note:** Species within the genus occurring in Florida have not been described from the larval stage. Any identifications of larvae to species level are suspect.
2. *Cheumatopsyche pasella* (460528004002015); *C. pettiti* (460528004002016); *C. virginica* (460528004002026). (See above note).
3. *Hydropsyche frisoni* (460528004003015). The species has not been recorded from Florida and has rarely been collected on the Southeastern Coastal Plain.
4. *Hydropsyche simulans* (460528004003028). The species has not been recorded from Florida and its occurrence in the state is doubtful.
5. *Hydropsyche venularis* (460528004003031). The species has not been recorded from Florida, although its occurrence is somewhat likely.

6. *Hydropsyche sparna* (460528004003066). The species has not been recorded from Florida, although its occurrence is somewhat likely.
7. *Arctopsyche* (460528004004). There is only 1 species in this genus which occurs in the Southeastern United States and it has only been recorded from North and South Carolina and Tennessee. The occurrence of the genus in Florida is very doubtful.
8. *Parapsyche* (460528004009). The occurrence of the genus in Florida is very doubtful. Its distribution is more Northern.
9. *Macronema* (460528004012S). Nearctic species formally in the genus are now placed in *Macrostemum*.
10. *Macrostemum carolina* (460528004012002) [= *Macronema carolina* (460528004012002S); *Macronemum carolina* (460528004012002S)].

#### **Family Hydroptilidae (460528005)**

1. *Agraylea* (460528005002). The occurrence of the genus in Florida is doubtful. The genus occurs South only to Kentucky.
2. *Hydroptila* (460528005003). **Note:** Larvae within the genus, as well as most hydroptilids, cannot be identified to species level. Therefore, larval identifications of *Hydroptila* to species are suspect.
3. *Hydroptila hamata* (460528005003008); *H. remita* (460528005003009); *H. latosa* (460528005003030); *H. quinola* (460528005003045). (See above note)
4. *Oxyethira* (460528005005). **Note:** Larvae within the genus, as well as most hydroptilids, cannot be identified to species level. Therefore, larval identifications of *Oxyethira* to species are suspect.
5. *Oxyethira zeronia* (460528005005007); *O. novasota* (460528005005012); *O. janella* (460528005005023); *O. setosa* (460528005005028). (See above note)
6. *Palaeagapetus* (460528005012). The occurrence of the genus in Florida is doubtful. Within North America the genus is confined to mountainous areas.

#### **Family Goeridae (460528007S)**

The family is recognized as distinct from the Limnephilidae, not as a synonym as indicated by the classification code. The family does not occur in Florida and has not been reported from the Southeastern Coastal Plain.

#### **Family Limnephilidae (460528007)**

1. *Apatania* (460528007001). The range of the genus in Eastern North America extends South as far as the Appalachians of northern Georgia. Its occurrence in Florida is doubtful.
2. *Pseudostenophylax* (460528007007). The genus does not occur in Florida.
3. *Hydatophylax argus* (460528007008001). The occurrence of the species in Florida is doubtful. Larvae of *Hydatophylax* are easily confused with those of *Pycnopsyche*.
4. *Hesperophylax* (460528007009). The occurrence of the genus in Florida is doubtful.
5. *Ironoquia parvula* (460528007041003). The species has not been recorded in Florida and probably does not occur in the state.
6. *Pycnopsyche guttifer*. Spelling correction of *Pycnopsyche guttifer* (460528007048005). The species probably does not occur in Florida.
7. *Pycnopsyche scabripennis* (460528007048008). The species does not occur in Florida. Its southern most range is limited to the Virginias.

### **Family Molannidae (460528008)**

1. *Molanna uniophila* (460528008001003). The species has not been recorded from Florida and probably does not occur this far South.

### **Family Beraeidae**

1. *Beraea* (460528009001). The genus probably does not occur in Florida. Larvae of *Beraea* are sometimes confused with those of *Agarodes*.

### **Family Leptoceridae (460528012)**

1. *Triaenodes injustus*. Spelling correction of *Triaenodes injusta* (460528012002006S). The species has not been recorded from Florida but is likely to occur within the state.
2. *Mystacides* (460528012003). The genus is unlikely to occur in Florida. Larvae of the genus are easily confused with larvae of certain *Triaenodes* species.
3. *Nectopsyche* (460528012005) [= *Leptocella* (460528012005S)].
4. *Nectopsyche spiloma* (460528012005007). The identity of the larva of this species is not well established. Larval and adult material need further study. The species has not been recorded from Florida although its occurrence is possible.
5. *Anthripsodes* (460528012007S). North American species previously classified in the genus were split off and placed into a separate genus *Ceraclea* (460528012007).
6. *Ceraclea transversa*. Spelling correction of *Ceraclea transversus* (460528012007002).
7. *Ceraclea tarsipunctata*. Spelling correction of *Ceraclea tarsipunctatus* (460528012007012).

### **Family Brachycentridae (460528014)**

1. *Brachycentrus americanus* (460528014001002). The species does not occur in Florida or the Southeastern United States. Distribution is Northern and Western.

### **Family Sericostomatidae (460528015)**

1. *Agarodes* (460528015001). **Note:** Larvae within the genus cannot be identified to species with reliable accuracy. Larval identifications to species are suspect.
2. *Agarodes libalis* (460528015001004); *A. crassicornis* (460528017001009); *A. ziczac* (460528015001010). (See above note)

### **Family Polycentropodidae (460528017)**

1. *Cernotina* (460528003004); *C. spicata* (460528003004002); *C. truncona* (460528003004012). **Note:** Under the current classification these taxa should be placed in the family Polycentropodidae not Psychomyiidae (460528003).
2. *Polyplectropus* (460528003007). **Note:** Under the current classification the genus should be placed in the family Polycentropodidae not Psychomyiidae (460528003). The genus is not recorded from Florida. North of Mexico, it has been found only in Texas.
3. *Polycentropus* (460528017001). **Note:** Larvae within the genus can not be identified to species with reliable accuracy. Larval identifications to species are suspect.
4. *Polycentropus cinereus* (460528017001006); *P. crassicornis* (460528017001009); *P. interruptus* (460528017001043). (See above Note)
5. *Polycentropus flavus* (460528017001018). The species does not occur in Florida. The distribution is Northern. (See above Note)

6. *Polycentropus remotus* (460528017001020). The species does not occur in Florida. The Southern most record is from Kentucky. (See above Note)
7. *Cyrnellus fraternus* (460528017002001) [= *Cyrnellus marginalis* (460528017002003)].
8. *Nyctiophylax* (460528017004). The genus *Paranyctiophylax* (460528017006) was proposed for North American species of *Nyctiophylax*, but this split has not been widely accepted.
9. *Nyctiophylax affinis* (460528017004001); *Nyctiophylax celta* (460528017004003). **Note:** Species identifications of *Nyctiophylax* larvae are not advisable since the larvae of only 2 out of 5 *Nyctiophylax* species likely to occur in the state have been described.

### **Family Dipseudopsidae**

Recently the genera within this family were elevated from subfamily status Dipseudopsinae within Polycentropodidae. The only North American genus is *Phylocentropus*.

1. *Phylocentropus* (460528003003). The genus is classified within the family Dipseudopsidae not Psychomyiidae (460528003).

### **Family Glossosomatidae (460528018)**

1. *Protoptila* (460528001002). The genus is classified within the family Glossosomatidae not Rhyacophilidae (460528001).
2. *Agapetus* (460528018001). The genus has not been recorded from Florida. The closest records are from Northern Alabama.
3. *Glossosoma* (460528018003). The genus has not been recorded from Florida; the occurrence of *Glossosoma* in cold, spring-fed streams of the state is a remote possibility.

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\* Change of taxonomic name since last report