

# Previous Versions of the BioData Invertebrate Taxonomy

## Versioning of the BioData Taxonomic System

Invertebrate Taxonomy Version	Excel File	Production Date	Comments	Put in Production by
1.0	<a href="#">Invertebrates_1.0.xlsx</a>	April 18, 2011	From Scott G - 14APR2011	Jesse R Schoenemann
1.1	<a href="#">Invertebrates_1.1.xlsx</a>	January 12, 2012	THIS IS THE FIRST VERSION DEPLOYED TO PRODUCTION THROUGH THE USER INTERFACE Nematoda changed to Nemata; Nematoda Bench Concepts have been "mapped" to Nemata ITIS TSNs and Match Codes were added for ALL Bench Concept; these match codes were generated from an automated process and are noted as such (e.g. Automated Exact Match) to preserved their origin. Numerous Bench Concepts were added as it had been almost 8 months since the domain was last updated; 10 of them were added through the UI, the remaining taxa were added when the updated flat file was imported by the developers; several issues with that upload were corrected through the UI and behind the scenes by the developers "Phylogenetic" order was imposed and verified down to the level of Superfamily; display and output of that sort order still needs to be verified Several of the "Goldhammer" provisional/conditional ID's were grouped under common BioData Taxa; many if not all of these concepts should probably be retired NWQLisms might remain in the domain; I'm hoping these will be "made known" as lab upload data and react to deprecated taxa, but continued review "group by group" of the domain continues to be important to validate it for use outside of the NWQL Several Published Taxa do not have ITIS TSNs, but they also do not have BioData Taxa associated with them; they seem to be related to monotypic upgrades or taxa with one known NA species; some were assigned ITIS TSNs using the UI The "Thienemannimyia group" taxa were grouped under one BioData Taxon. TO DO: - need to continue reviewing BioData Taxa to determine whether "imbedded" concept information is appropriate or whether it is sufficient to only retain it with the Bench Concepts (e.g. "Goldhammer" taxa) - look for taxa that have a "synonym" in ITIS that was not found in the automated process because they are spelled differently and as such are mapped to a parent TSN - add TSNs to Published Names that don't have them - display and output of phylogenetic sort order still needs to be verified - conditional/provisional taxa will need to be indicated as such manually	Scott A Grotheer
1.2	<a href="#">Invertebrates_1.2.xlsx</a>	January 13, 2012	Added short names to taxa that were missing them	Scott A Grotheer
1.3	<a href="#">Invertebrates_1.3.xlsx</a>	January 31, 2012	Rolled duplicate concepts under one BioData Taxon (e.g. Goldhammer and sensu...); updated Hydropsyche scalaris group synonyms using Korecki's 2006 masters thesis; retired ambiguous Hydropsychidae; retired ambiguous Leptohiphidae; retired ambiguous Caenidae; lumped the Crico /Ortho concepts under a uniform BioData Taxon; added several non-nominal (i.e. referenced) concepts to existing BioData Taxa; "Automated Parent Match @ Tribe" ITIS match codes did not get imported, so match codes for selected taxa were updated appropriately; Bethbilbeckia floridensis added; added two mite genera for an EcoAnalysts data load; added a few Thienemannimyia group variations	Scott A Grotheer
1.4	<a href="#">Invertebrates_1.4.xlsx</a>	April 24, 2012	Several taxa added; an error popped up when rearranging the order of published names - the system didn't seem to like the "automated exact match" codes when I shuffled the hierarchy around, but it didn't lock up; I also added several "spelling" variations on the same name that are commonly used, but lumped them under what I feel is the accepted BioData and Published names; going to production, so that I can test the NAMC data upload and use the hierarchy to filter out LifeStage for non-Pterogota taxa.	Scott A Grotheer
1.5	<a href="#">Invertebrates_1.5.xlsx</a>	April 24, 2012	"lumped" version of Cercobranchys added to accommodate labs that have not adopted the recent keys	Scott A Grotheer
1.6	<a href="#">Invertebrates_1.6.xlsx</a>	July 9, 2012	Draft created to start working on incorporating the VERSAR taxa; note that I realized that BioData short name is not required and is missing for many taxa that I added in this version and in prior version; the nominal version of Stenonema was retired to limit its use to contributors that are intending it as Stenonema femorum, but not identifying it to species; Gyretes synonymies were addressed; several taxa were changed to conditional provisional with similar conditional/provisional concepts lumped under one a common BioData name; several taxa were also added to assist Bob Z. with some data analysis - he is working with datasets that were produced by NAMC and EcoAnalysts, so I figured it would be good to add valid names that we would likely encounter and help Bob at the same time.	Scott A Grotheer
2.1	<a href="#">Invertebrates_2.1.xlsx</a>	July 17, 2012	The last version should have been 2.0, since it involved what we are classifying as "major" changes, so I'm going to make this version 2.1	Scott A Grotheer
3.0	<a href="#">Invertebrates_3.0.xlsx</a>	September 20, 2012	Allen and Edmunds published two Ephemerellidae revision in 1961, appropriate reference codes were added to distinguish between them and concepts were added/retired as needed; several taxa were added; a few taxa were changed to conditional provisional; with the synonymies that have gone on in the Ephemerellidae, a BioData name was deleted and the Bench Concepts associated with it were re-assigned; Jacobus (2010) reviewed and revised the Caudatella, those revisions are incorporated here; due to the changes in the Ephemerellidae this is considered a major revision	Scott A Grotheer
3.1	<a href="#">Invertebrates_3.1.xlsx</a>	September 20, 2012	NO COMMENTS	Scott A Grotheer
4.0	<a href="#">Invertebrates_4.0.xlsx</a>	October 15, 2012	Added several conditional/provisional worm taxa; lumped Pristinella under Pristina and deleted Pristinella; added several Enchytraeidae genera, since we did not have any in our list; added several referenced concepts for existing taxa; flagged several existing taxa as conditional/provisional; lumped Libellula lydia under Plathemis and deleted the BioData and Published versions of L. lydia; added a few conditional/provisional Tubificida.	Scott A Grotheer
4.1	<a href="#">Invertebrates_4.1.xlsx</a>	December 11, 2012	Several names added; one ITIS match code changed	Scott A Grotheer
4.2	<a href="#">Invertebrates_4.2.xlsx</a>	December 20, 2012	Simple add of a few referenced concepts	Scott A Grotheer
4.3	<a href="#">Invertebrates_4.3.xlsx</a>	March 22, 2013	Adding new bench concepts; corrected the BU_ID associated with Bryelmis to remove the authorship; there were no records in BioTDB or BioData for Bryelmis, so I chose not to allow the Bryelmis issue alone to cause this version to be tracked as a major change, since no data would be impacted; retired Naididae (Tubificiinae) and Naididae (Naidinae) concepts in an effort to avoid confusion in new incoming data;	Scott A Grotheer
4.4	<a href="#">Invertebrates_4.4.xlsx</a>	May 29, 2013	Add some BioData Short Names; Update some ITIS TSN match codes; add a few BenchConcepts	Scott A Grotheer
4.5	<a href="#">Invertebrates_4.5.xlsx</a>	June 21, 2013	Corrected some inconsistencies in BU_ID so that they would map correctly to BioTDB and added a missing nominal concept; hopefully this will correct the ETL errors	Scott A Grotheer
4.6	<a href="#">Invertebrates_4.6.xlsx</a>	July 18, 2013	Looks like changing the left apostrophes to "normal" apostrophes in the BU_ID in version 4.5, has caused an issue with the ETL; even though data from the NWQL contains normal apostrophes, it is evidently converted to a left apostrophe when uploading data into BioTDB to avoid confusion in SQL since SQL uses apostrophes to enclose strings in queries. All the "normal" apostrophes were changed back to left apostrophes to hopefully correct this	Scott A Grotheer
4.7	<a href="#">Invertebrates_4.7.xlsx</a>	September 11, 2013	Correct a grammatical error in 5 comments; added two Bench Concepts	John D Cotter
5.0	<a href="#">Invertebrates_5.0.xlsx</a>	December 18, 2014	Added new concepts for existing mite taxa; added a BioDataShortName to one taxon; version compare tool used on 11/15/2013 when all the new mite concepts were added; comparison relating to the mites was fine; existing taxa in the leech section revised/moved to correspond to Klemm and others, 2013; incorporate changes/additions from the February 4th update of Mayfly Central ( <a href="http://www.entm.purdue.edu/mayfly/">http://www.entm.purdue.edu/mayfly/</a> ); added several non-nominal concepts to existing taxa	Scott A Grotheer
5.1	<a href="#">Invertebrates_5.1.xlsx</a>	December 23, 2014	add a non-nominal Labiobaetis concept	Scott A Grotheer
6.0	<a href="#">Invertebrates_6.0.xlsx</a>	January 6, 2015	Add 3 concepts; update re: Utterbackia and Anodonta; Anodonta was split into Utterbackia and Anodonta; there appears to be the possibility of regional adjustments, but I just made nominal Anodonta ambiguous at the subfamily level; Anodonta imbecillis was associated with Utterbackia imbecillis; added a few BioDataCommonNames to existing taxa	Scott A Grotheer
6.1	<a href="#">Invertebrates_6.1.xlsx</a>	January 6, 2015	added a reference to nominal Utterbackia	Scott A Grotheer
6.2	<a href="#">Invertebrates_6.2.xlsx</a>	February 3, 2015	Added an Ephemerella concept from an unpublished key used in the NW	Scott A Grotheer

7.0	<a href="#">Invertebrat es_7.0.xlsx</a>	September 18, 2015	Change Constempellina from one NA species to potentially more than one based on Epler (2001); Added 5 new published taxa and several associated BioData and Bench Taxa; added Parakiefferiella sp. F as a conditional taxon and moved all Stilocladius? sp. sensu Epler, 1995 to be associated with it; the BioDataTaxon Stilocladius? was deleted; several nominal (i.e. without a ReferenceCode) and non-nominal (i.e. with a ReferenceCode) were added associated with the new Published and BioData Taxa; several nominal (i.e. without a ReferenceCode) and non-nominal (i.e. with a ReferenceCode) were added associated with existing BioData Taxa; due to the changes to Constempellina and Stilocladius?, this is considered a major revision; added two new referenced concepts to Oulimnius	Scott A Grotheer
7.1	<a href="#">Invertebrat es_7.1.xlsx</a>	October 5, 2015	Add a reference to Arctopsyche californica	Scott A Grotheer
8.0	<a href="#">Invertebrat es_8.0.xlsx</a>	November 17, 2015	Mite, caddis, midge, and black fly taxa added; ending of specific epithets corrected; Helopelopia changed to a subgenus of Conchepelesia; a few taxa changed to conditional/provisional; several species groups and/or complexes added to existing genera; some synonymies in midges incorporated; details can be obtained from a BioData administrator	Scott A Grotheer
8.1	<a href="#">Invertebrat es_8.1.xlsx</a>	December 15, 2015	Changed the state of some retired taxa that are in legacy data sets to deprecated, so that legacy data can be uploaded; add a mite genus; associated 'Physa/Physella' with 'Physa' to be more consistent	Scott A Grotheer
9.0	<a href="#">Invertebrat es_9.0.xlsx</a>	April 5, 2016	Add referenced concepts for all the species in Baetisca; retired Baetisca callosa as it is a dubius taxon; changed Nemata back to Nematoda at the published and BioData levels based on ITIS, corrected state of Nemata and Nematoda bench concepts	Scott A Grotheer
9.1	<a href="#">Invertebrat es_9.1.xlsx</a>	April 5, 2016	Added a historical Hydropsyche concept so that legacy data can be uploaded with a reference appropriate for the time period	Scott A Grotheer
9.2	<a href="#">Invertebrat es_9.2.xlsx</a>	April 19, 2016	Changed the state of Paralauterborniella nigrohalterale (a.k.a. P. nigrohalteralis) to deprecated, so that legacy data with that spelling could be loaded	Scott A Grotheer
9.3	<a href="#">Invertebrat es_9.3.xlsx</a>	May 27, 2016	Ameletidae additions; Baetidae additions; Baetiscidae additions; Caenidae additions and one authority correction in a publish taxon; Ephemerellidae additions; Ephemeridae additions; overall this version is about adding new taxa and legacy synonyms to help the BioData taxon domain be more useful for analyzing data compiled from different sources and to help when we eventually load legacy data	Scott A Grotheer
9.4	<a href="#">Invertebrat es_9.4.xlsx</a>	August 18, 2016	Ephemeridae correction with no impact on analysis; Baetidae correction and additions; Caenidae additions; Heptageniidae additions; Mite additions; Ancyliidae additions; Hydropsychidae groups added; Lepidoptera additions	Scott A Grotheer
10.0	<a href="#">Invertebrat es_10.0.xlsx</a>	September 14, 2016	Rearrangement of Centroptilum and Procloeon according to Jacobus and Wiersema, 2014 with the addition of Neocloeon; change from Potthastia longimanus to Potthastia longimana; rearrangement of Lepidoptera upper level hierarchy; changed several BioData taxa and bench concepts to conditional/provisional; associated "complex", "sp. nr.", "genus nr.", and "cf." taxa with their parent taxa and deleted the associated BioDataTaxonNames; linked "Goldhammer" taxa to appropriate BioData taxa; changed "/" taxa to conditional/provisional; changed most "group" taxa to a conditional/provisional state; associated some conditional/provisional bench taxa that are at the genus level hierarchically with their respective species groups - also at the genus level	Scott A Grotheer
10.1	<a href="#">Invertebrat es_10.1.xlsx</a>	September 23, 2016	change the state of Tricorythodes minutus from retired to deprecated	Scott A Grotheer
10.2	<a href="#">Invertebrat es_10.2.xlsx</a>	February 28, 2017	added a referenced version or Orthocladius annectans; added a referenced version of Polypedium beckae; added another referenced version of Ochrotrichia; added older "synonyms" for existing mayfly taxa based on the January 11, 2016 update from Mayfly Central	Scott A Grotheer
11.0	<a href="#">Invertebrat es_11.0.xlsx</a>	March 28, 2017	Add several taxa, so Fountain Creek project data can be loaded; rearranged some species within Tropisternum following ITIS; added a referenced version of Naididae, so that users can enter the taxon as a concept that includes both Naididae and the previous Tubificidae; two Agabus species level concepts were added that will require future research to determine which genera they should be placed in	Scott A Grotheer
12.0	<a href="#">Invertebrat es_12.0.xlsx</a>	January 10, 2018	Added several taxa; added a species group in Paraleptophlebia and moved one conditional designation into that group; added Galba (Gastropoda: Lymnaeidae) - this genus is evidently the genus that all the existing Fossaria are to be put in, but we have not researched it completely, so we just added Galba at the bench level, a future version may include changes to the Published and BioData names, but we may leave them as they are for now, since ITIS has not yet adopted this change; finally retired the nominal (i.e. without a reference) concept for Baetis, given all the splitting in Baetidae over the last few decades, this taxon has potentially become quite ambiguous, depending on the reference that is used, so it is best to have a reference, putting it in context, it may need to be moved and associated with Baetidae at the BioData level in the future - especially if the taxa domain is used for older data sets	Scott A. Grotheer
12.1	<a href="#">Invertebrat es_12.1.xlsx</a>	January 25, 2018	added Cricotopus (Isocladius) type 1, a conditional/provisional taxon used by labs in the Pacific NW	Scott A. Grotheer
12.2	<a href="#">Invertebrat es_12.2.xlsx</a>	March 5, 2018	none	Scott A. Grotheer
13.0	<a href="#">Invertebrat es_13.0.xlsx</a>	May 6, 2018	added several taxa; adjusted Cambarus bartonii and the related subspecies to align with the most up-to-date view of their taxonomy	Scott A. Grotheer
14.0	<a href="#">Invertebrat es_14.0.xlsx</a>	June 12, 2018	associated Sphaeriidae (Mollusca) with its ITIS TSN, even though ITIS currently lists Sphaeriidae as an invalid junior synonym of Pisidiidae; add several concepts with references for existing taxa; deprecated a few older concepts; added Rhyacophila grandis per a request from a biologist using the taxa domain in Oregon	Scott A. Grotheer
15.0	<a href="#">Invertebrat es_15.0.xlsx</a>	October 29, 2018	add new bench concepts; updated oligochaeta taxa to Kathman and Brinkhurst (1999) (the revised edition) and deprecated the Kathman and Brinkhurst (1998) concepts. Worked on adding Kathman and Brinkhurst (1999) concepts for the species level taxa as well. Added 100's of bench concept in order to upload data from PAI and made other modifications to the taxa domain that came up as a result to these extensive additions. Edited the authorship on several published taxa to delete the year, so that it is more consistent with the rest of the domain	Scott A. Grotheer
15.1	<a href="#">Invertebrat es_15.1.xlsx</a>	October 29, 2018	clean up and add any needed taxa after the the previous major version	Scott A. Grotheer
15.2	<a href="#">Invertebrat es_15.2.xlsx</a>	November 5, 2018	Added BioData short names to several taxa	Scott A. Grotheer
15.3	<a href="#">Invertebrat es_15.3.xlsx</a>	December 6, 2018	add new taxon concepts	Scott A. Grotheer
15.4	<a href="#">Invertebrat es_15.4.xlsx</a>	December 6, 2018	adding new bench concepts	Scott A. Grotheer
15.5	<a href="#">Invertebrat es_15.5.xlsx</a>	March 5, 2019	corrected the authority associated with Helopicus subvarians from '(Banks)' to '(Banks)'; added a new bench concept	Scott A. Grotheer
15.6	<a href="#">Invertebrat es_15.6.xlsx</a>	April 18, 2019	adding bench concepts associated with published and/or biodata names to facilitate mapping to Aquarius Samples	Scott A. Grotheer
15.7	<a href="#">Invertebrat es_15.7.xlsx</a>	April 24, 2019	correct issues related to line feeds in comments and edited comments to remove some quotation marks and commas to make for greater compatibility with csv files	Scott A. Grotheer
15.8	<a href="#">Invertebrat es_15.8.xlsx</a>	January 27, 2020	added a new referenced concept for Oroperala barbara	Scott A. Grotheer
16.0	<a href="#">Invertebrat es_16.0.xlsx</a>	June 1, 2020	adding taxa for legacy MMSD samples; even though this is not a major version (i.e. there were only additions), BioData does not handle a "15.10" version very well, so I used 16.0 on this one just in case I forget when I make the next version	Scott A. Grotheer
16.1	<a href="#">Invertebrat es_16.1.xlsx</a>	July 7, 2020		Scott A. Grotheer

16.2	<a href="#">Invertebrates_16.2.xlsx</a>	September 8, 2020	adding new taxa	Scott A. Grotheer
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