BioData Taxonomic System

The BioData taxonomic system is organized as a hierarchically nested set of three naming systems.

Published Taxon Names

BioData Taxon Names

Bench Concepts

*This system is used to report taxonomic data in a **standard** taxonomic system that resolves nomenclatural synonyms.

**Each version is numbered and archived using standard conventions. The current version of the taxonomic system is applied to all data, whether collected in 2014 or 1993.

Quick Links

Download BioData Taxonomy

Compare **your** list of taxonomic names with the downloaded USGS BioData Taxonomy using a contributed R script available at https://github.com /bishopia/biodata_check

Request a NEW Taxon

Naming Conventions for Conditional and Provisional Taxa

Saving files in a Unicode file format for international character support

Versioning of the BioData Taxonomic System

Published Taxon Names:

The highest level of organization is called the Published Taxon Name. Every BioData Taxon Name must be linked to a Published Taxon Name. This also ensures that every Bench Concept is also linked to a Published Taxon Name. Published Taxon Names have been validly published and should conform to the standards of the International Commission on Zoological Nomenclature (ICZN) and International Association for Plant Taxonomy (IAPT), so they allow us to report data according to internationally accepted standards.

Published Taxon Names can be edited and even deleted, but not without creating a new version of the taxonomic system and only if associated BioData Taxon Names and Bench Concepts will not be orphaned (unlinked from a published name)...

- Published Taxon Names must be assigned a hierarchical rank (e.g. genus or species)...
- Published Taxon Names can be linked to ITIS; these matches to ITIS do not need to be exact. This allows us to include validly published names that are not in ITIS and still link to an existing parent taxon that is in ITIS.
- Published Taxon Names - except at the highest levels (i.e. Phylum) - also need to have a Hierarchical Parent. The sort order of the parents can be controlled by the system, so we can output data phylogenetically and alphabetically...

This a screen shot of a portion of the taxonomic management system showing the editable and fixed elements of an invertebrate BioData Taxon Name

Biological Community: Invertebrates

  (*) required field

Hierarchy Parent

Parent Published Taxon Name: Ceratopsyche

Parent Taxonomic Rank: Genus

Parent ITIS TSN: 115570

Parent ITIS TSN Match Code: Automated Exact Match

                          View Parent in ITIS

Published Taxon Name

Published Taxon Name: * Ceratopsyche bronta

Published Taxon Name Authority: (Ross)

Taxonomic Rank: * Species

ITIS TSN: 115577

ITIS TSN Match Code: Automated Exact Match

                           View in ITIS

BioData Taxon Names:

The next level is called the BioData Taxon Name. Every Bench Concept must be linked to a BioData Taxon Name. Since Bench Concepts cannot be edited or deleted, BioData Taxon Names allow us to provide data using a standard nomenclatural system, correct errors, and deal with synonomies.

BioData Taxon Names can be edited and even deleted, but not without creating a new version of the taxonomic system..

- Every Bench Concept is linked to one and only one BioData Taxon Name
- BioData Taxon Names must be linked to a Published Taxon Name...
- BioData Taxon Names can be associated with a common name. This is useful for icthyologists...
- BioData Taxon Names can be associated with unique short names that are useful when doing statistical analysis...
- BioData Taxon Names can - like Bench Concepts - be defined as hybrids or as conditional /provisional names...

A portion of the taxonomic management system showing the editable and fixed elements of an invertebrate BioData Taxon Name

Biological Community: Invertebrates

 (*) required field

┌─ **Published Taxon Name** ───┐

Published Taxon Name: Ceratopsyche bronta

Published Taxon Authority: (Ross)

Published Taxonomic Rank: Species

Published Taxon ITIS TSN: 115577

Published Taxon ITIS TSN Match Code: Automated Exact Match

                          View in ITIS

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┌─ **BioData Taxon Name** ───┐

BioData Taxon Name: * Ceratopsyche bronta

Biodata Taxon Common Name:

BioData Taxon Short Name: Ce_bron512

Is Provisional/Conditional?:   * ○ Yes   ⊙ No

Is Hybrid?:   * ○ Yes   ⊙ No

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Bench Concepts:

The foundation of the BioData taxonomic system is called a Bench Concept. Every Bench Concept is linked to a BioData Taxon Name. A Bench Concept always contains a Bench Taxon Name, but in addition to that it can be more completely defined by optionally adding one or more of the following data elements: 1) Bench Taxon Authority or 2) Bench Taxon Name Reference Code. Bench Taxon Name Reference Codes are linked to a complete citation.

The four potential fields that may be used to select a **Bench Concept**:

- **Bench Taxon Name** (*required for all taxa*)
- **Bench Taxon Authority** (*optional*)
- **Bench Taxon Name Reference Code** (*optional*)
- **BioData Taxon Common Name** (fish ONLY)

Although theoretically all four fields could be used to define a **Bench Concept**:

- For **algal data** it is currently customary to use **Bench Taxon Name** with an optional **Bench Taxon Authority** appended to the end of the string
- For **fish data** it is currently customary to use **BioData Taxon Common Name**
- For **invertebrate data** it is customary to use **Bench Taxon Name** with an optional **Bench Taxon Name Reference Code** in a separate column

*when taxonomic ambiguity exist among Bench Concepts, we may require otherwise optional fields to more thoroughly define the Bench Concept

Once a Bench Concept has been created and published in an active (i.e. not a draft) version of the taxonomic system, it cannot be deleted and the 3 key fields that define the concept cannot be edited; we preserve the true original record as it was entered or uploaded with data.

The concept itself cannot be edited, but...

- A Bench Concept can be associated with different BioData Concepts...
- A Bench Concept can have multiple states ...
- A Bench Concept can be a hybrid...
- A Bench Concept can be conditional or provisional...
- A Bench Concept can have specific comments associated with it...
- A Bench Concept can be linked to unique identifiers used by other taxonomic systems...
- A Bench Concept without a Reference Code is referred to a "nominal"...

*if any of these changes are made, the original values are archived in the previous versions

A portion of the taxonomic management system showing the editable and fixed elements of an invertebrate Bench Concept

Biological Community: Invertebrates

(*****) required field

BioData Taxon Name

BioData Taxon Name: ***** Ceratopsyche bronta

BioData Taxon Common Name:

Bench Taxon Concept

Bench Taxon Name: ***** Ceratopsyche bronta

Bench Taxon Name Reference Code: Nimmo, 1987

Status

Bench Taxon Concept State: ***** Current

Is Provisional/Conditional?:   ***** ○ Yes   ⦿ No

Is Hybrid?:   ***** ○ Yes   ⦿ No

Comments:

External Mappings

BU_ID: ***** Ceratopsyche bronta (Ross) sensu Nim

States of Bench Taxon Concepts

Bench Taxon Concepts can have one of three states (**TaxonConceptState**)

1. **Current** - the concept is considered up-to-date and will be accepted in data
2. **Deprecated** - the concept will be accepted in data but may be rejected in the near future
3. **Retired** - the concept has been retired from use and will be rejected if used in incoming data