

GBIF GNA Profile Reference Guide for Darwin Core Archive Core Terms and Extensions

Version 1.2



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About GBIF

The Global Biodiversity Information Facility (GBIF) was established as a global mega-science initiative to address one of the great challenges of the 21st century - harnessing knowledge of the Earth's biological diversity. GBIF envisions 'a world in which biodiversity information is freely and universally available for science, society, and a sustainable future'. GBIF's mission is to be the foremost global resource for biodiversity information, and engender smart solutions for environmental and human well-being¹. To achieve this mission, GBIF encourages a wide variety of data publishers across the globe to discover and publish data through its network.

¹ GBIF (2011). GBIF Strategic Plan 2012-16: Seizing the future. Copenhagen: Global Biodiversity Information Facility. 7pp. ISBN: 87-92020-18-6. Accessible at http://links.gbif.org/sp2012_2016.pdf

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Introduction

The Darwin Core is body of standards. For the purposes of this reference guide it can be thought of as a collection of terms. These terms are intended to facilitate the sharing of biodiversity information. The Darwin Core is primarily based on taxa, their occurrence in nature as documented by observations, specimens, and samples, and related information.² We use it here to share taxonomic information in the form of annotated species checklists.

Darwin Core Archive (DwC-A) is a biodiversity informatics data standard that makes use of the Darwin Core terms to produce a single, self-contained dataset for sharing both species-occurrence and species-level data. An archive is a set of one or more data files, easily generated from databases or spreadsheets as text files. An archive may also contain a descriptor file that serves as a map to inform others how your file or files are organized. GBIF provides tools for generating this XML file. A complete description of Darwin Core Archive can be found in the Darwin Core Text Guidelines³. ***It is the preferred format for publishing data through the GBIF network.***

The simplest checklist archive consists of a single data file, organised like a spreadsheet and saved as comma- or tab-delimited text (tab is simplest). The core elements of a checklist: species list, synonyms, classification, can be shared in this single file. Each line in this *core data file*, refers to a single taxon. The first column of each record should contain a unique ID for the taxon. This might be a single integer or it could be a globally unique identifier if they are used in the source database. This unique identifier is important, particularly if there are additional data elements to share with the core species spreadsheet.

The central idea of a Darwin Core Archive is that it can be used to share more than just the core elements of a checklist. In many cases, checklists are *annotated* with additional types of data. A good example is vernacular, or common names. In many cases, there may be more than one vernacular name for a single taxon, perhaps in multiple languages. In this case, sharing vernacular names in the core data file would be a problem because a taxon should only be recorded once per row (or line) in the data file. Fitting multiple vernacular names into this structure would require putting all the names into a single column (or *field*) in the core file. In addition, vernacular names may have other properties to be shared, such as the language of the name, the country where it is used,

² What is Darwin Core? <http://rs.tdwg.org/dwc/>

³ Darwin Core text guidelines - <http://rs.tdwg.org/dwc/terms/guides/text/index.htm>

etc. These can't all be forced into the same field in the core data file. Other types of data that may fall into this one-to-many category include

- References: such as a bibliography related to a species
- Distribution data: such as a list of countries where the taxon occurs
- Specimens: where references to multiple specimens may be stored.

Darwin Core Archive addresses this problem by allowing these types of data to be shared as separate data files. They are linked to the core data file by using the same unique identifier used to identify each taxon record. In this way, many records can exist for each single core record. If a taxon is known by, for example, three vernacular names, they would occupy three lines in a separate file for vernacular names. Each line would also start with the same unique identifier used for the taxon in the core data file. Like the core data file, these *extensions*, as they are known, are in the same spreadsheet-style text format. Each extension is represented by a separate extension file.

This reference guide provides an overview of the set of terms and extensions that are supported by GBIF. This collection is sometimes referred to as the "GNA Profile." The acronym "GNA" refers to the "Global Names Architecture": an effort among a group of partnering biodiversity informatics initiatives including GBIF to develop standardised methods, practices and shared resources for taxonomic data. This guide presents the core terms for describing a species checklist followed by a list of extensions that extend the data profile to publish rich annotations to the core taxonomic data record.

The terms are organised into core and extension listings. Each extension description includes a title, a brief description. Most importantly, it provides a link to the extension definition in the GBIF repository, which is always the most up-to-date reference to the terms and extensions.

The publication "Best Practices in Publishing Species Checklists" provides recommendations on how to use the profile described here to share classification, synonymy, citation and other components of species checklists. It is available online at:

http://links.gbif.org/checklist_best_practices

The Core Taxon File

Use this set of terms to provide the fundamental information for a species checklist including classification, synonymy and other key elements. Each row in this list represents a taxon name, either an accepted name or a synonym. The terms in this class support different methods for representing classification information. Classifications can be shared “spreadsheet-style” with columns for Kingdom, Phylum, Class, etc. or they can be shared “database-style” with each taxon row possessing a field containing the ID of its immediate parent. Please note that the tables contain the complete list of acceptable terms. The minimum requirement for sharing a checklist is as little as a list of species although an accompanying ID is highly recommended. Use this list of terms to identify the terms that best match the data to be shared. Don’t be daunted by the term names. Read the description to locate relevant terms.

Repository URL: http://rs.gbif.org/core/dwc_taxon.xml

taxonID	<p>The unique identifier used for a name or taxon reference in the core data file. Each row in the core data file has a unique taxonID and it should be the first column in the data file. Synonyms occupy separate lines and therefore also have unique taxonIDs. TaxonIDs may be simple integers or more complex globally unique identifiers.</p> <p>Examples: 101; “8fa58e08-08de-4ac1-b69c-1235340b7001”; Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: false</p>
acceptedNameUsageID	<p>This represents a second column in a synonym record that points to the record representing the valid (zoological) or accepted (botanical) name using the taxonID of that record as the “pointer.”</p> <p>Example: 8fa58e08-08de-4ac1-b69c-1235340b7001 Qualified Name: http://rs.tdwg.org/dwc/terms/acceptedNameUsageID Data Type: string Required: false</p>
acceptedNameUsage	<p>The scientificName of the taxon considered to be the valid (zoological) or accepted (botanical) name for this nameUsage. Example: "Tamias minimus" valid name for "Eutamias minimus" Qualified Name: http://rs.tdwg.org/dwc/terms/acceptedNameUsage Data Type: string Required: false</p>
parentNameUsageID	<p>The taxonID of the immediate higher-rank parent taxon (in a classification). Using the ID is preferred over using the name (listed as the next term).</p> <p>Example: “101” 8fa58e08-08de-4ac1-b69c-1235340b7001 Qualified Name: http://rs.tdwg.org/dwc/terms/parentNameUsageID Data Type: string Required: false</p>
parentNameUsage	<p>The scientificName of the immediate higher-rank parent taxon (in a classification). This name must match the name used in the row representing the parent taxon. Using IDs (using parentNameUsage) is preferred to this method. Example: "Rubiaceae", "Gruiformes", "Testudinae" Qualified Name: http://rs.tdwg.org/dwc/terms/parentNameUsage Data Type: string</p>

	Required: false
originalNameUsageID	The taxonID of the record representing the name that was originally established under the rules of the associated nomenclaturalCode (i.e., within the namePublishedIn reference). This may be known as the basionym (botany) or basonym (bacteriology) of the scientificName or the senior/earlier homonym for replaced names. Example: "101" 8fa58e08-08de-4ac1-b69c-1235340b7001 Qualified Name: http://rs.tdwg.org/dwc/terms/originalNameUsageID Data Type: string Required: false
originalNameUsage	The equivalent of the scientificName as it originally appeared when the name was first established under the rules of the associated nomenclaturalCode (i.e., within the namePublishedIn reference). The basionym (botany) or basonym (bacteriology) of the scientificName or the senior/earlier homonym for replaced names. Example: "Pinus abies", "Gasterosteus saltatrix Linnaeus 1768" Qualified Name: http://rs.tdwg.org/dwc/terms/originalNameUsage Data Type: string Required: false
nameAccordingTo	A bibliographic citation representing the concept or sense in which the name is used. Traditionally, in botany, the Latin "sensu" or "sec". (for secundum - according to) have been used. For taxa that result from identifications a reference to the keys used, monographs, online source or experts should be given. Example: "Werner Greuter 2008; Lilljeborg 1861, Upsala Univ. Arsskrift, Math. Naturvet., pp. 4, 5", "McCranie, J. R., D. B. Wake, and L. D. Wilson. 1996. The taxonomic status of <i>Bolitoglossa schmidti</i> , with comments on the biology of the Mesoamerican salamander <i>Bolitoglossa dofleini</i> (Caudata: Plethodontidae). Carib. J. Sci. 32:395-398." Qualified Name: http://rs.tdwg.org/dwc/terms/nameAccordingTo Data Type: string Required: false
nameAccordingToID	A unique identifier that returns the details of a nameAccordingTo (see above) reference. Example: "doi:10.1016/S0269-915X(97)80026-2" Qualified Name: http://rs.tdwg.org/dwc/terms/nameAccordingToID Data Type: string Required: false
namePublishedIn	Reference to a publication representing the original publication of the name. Example: "Forel, Auguste, Diagnosies provisoires de quelques espèces nouvelles de fourmis de Madagascar, récoltées par M. Grandidier., Annales de la Societe Entomologique de de Belgique, Comptes-rendus des Seances 30, 1886" Qualified Name: http://rs.tdwg.org/dwc/terms/namePublishedIn Data Type: string Required: false
namePublishedInID	A preferably resolvable, globally unique identifier that refers to namePublishedIn (see above). http://hdl.handle.net/10199/7 Qualified Name: http://rs.tdwg.org/dwc/terms/namePublishedInID Data Type: string Required: false
scientificName	The scientific name of taxon with or without authorship information depending on the format of the source database. Examples: "Coleoptera", "Vespertilionidae", "Manis", "Ctenomys sociabilis", "Ambystoma tigrinum diaboli", "Quercus agrifolia var. oxyadenia (Torr.)" Qualified Name: http://rs.tdwg.org/dwc/terms/scientificName Data Type: string Required: false
scientificNameID	Exclusively used to reference an external and resolvable identifier

	<p>that returns nomenclatural (not taxonomic) details of a name. Use <code>taxonID</code> to refer to taxa. Use to explicitly refer to an external nomenclatural record.</p> <p>Example: "urn:lsid:ipni.org:names:37829-1:1.3"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/scientificNameID</p> <p>Data Type: string</p> <p>Required: false</p>
scientificNameAuthorship	<p>The authorship information for the scientificName formatted according to the conventions of the applicable nomenclaturalCode. If authorship is included in the scientificName field, this field is optional.</p> <p>Example: "(Torr.) J.T. Howell", "(Martinovsk) Tzvelev", "(Linnaeus 1768)"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/scientificNameAuthorship</p> <p>Data Type: string</p> <p>Required: false</p>
higherClassification	<p>A list (concatenated and separated) of taxon names terminating at the rank immediately superior to the taxon referenced in the taxon record. This is used to fit the entire higher classification for a taxon into a single field. Recommended best practice is to order the list starting with the highest rank and separating the names for each rank with a semi-colon (";").</p> <p>Example: "Animalia;Chordata;Vertebrata;Mammalia;Theria;Eutheria;Rodentia;Hystricognatha;Hystricognathi;Ctenomyidae;Ctenomyini;Ctenomys"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/higherClassification</p> <p>Data Type: string</p> <p>Required: false</p>
kingdom	<p>The full scientific name of the kingdom in which the taxon is classified.</p> <p>Example: "Animalia", "Plantae"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/kingdom</p> <p>Data Type: string</p> <p>Required: false</p>
phylum	<p>The full scientific name of the phylum in which the taxon is classified.</p> <p>Example: "Chordata" (phylum), "Bryophyta" (division)</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/phylum</p> <p>Data Type: string</p> <p>Required: false</p>
class	<p>The full scientific name of the class in which the taxon is classified.</p> <p>Example: "Mammalia", "Hepaticopsida"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/class</p> <p>Data Type: string</p> <p>Required: false</p>
order	<p>The full scientific name of the order in which the taxon is classified.</p> <p>Example: "Carnivora", "Monocleales"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/order</p> <p>Data Type: string</p> <p>Required: false</p>
family	<p>The full scientific name of the family in which the taxon is classified.</p> <p>Example: "Felidae", "Monocleaceae"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/family</p> <p>Data Type: string</p> <p>Required: false</p>
genus	<p>The full scientific name of the genus in which the taxon is classified.</p> <p>Example: "Puma", "Monoclea"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/genus</p> <p>Data Type: string</p> <p>Required: false</p>
subgenus	<p>The full scientific name of the subgenus in which the taxon is classified. Values should include the genus to avoid homonym confusion.</p> <p>Example: Puma (Puma); Loligo (Amerigo); Hieracium subgen. Pilosella</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/subgenus</p> <p>Data Type: string</p>

	Required: false
specificEpithet	The name of the species epithet of the scientificName. Example: "concolor", "gottschei" Qualified Name: http://rs.tdwg.org/dwc/terms/specificEpithet Data Type: string Required: false
infraspecificEpithet	The name of the lowest or terminal infraspecific epithet of the scientificName, excluding any rank marker. Example: "concolor", "oxyadenia", "sayi" Qualified Name: http://rs.tdwg.org/dwc/terms/infraspecificEpithet Data Type: string Required: false
taxonRank	The taxonomic rank of the most specific name in the scientificName. Recommended vocabulary: http://rs.gbif.org/vocabulary/gbif/rank.xml Example: "subspecies", "varietas", "forma", "species", "genus" Qualified Name: http://rs.tdwg.org/dwc/terms/taxonRank Data Type: string Required: false
verbatimTaxonRank	The taxonomic rank of the most specific name in the scientificName as it appears in the original record or the rank designator within the verbatim original name itself. May include abbreviations for example. Example: "Agamospecies", "sub-lesus", "prole", "apomict", "nothogrex", "sp.", "subsp.", "var." Qualified Name: http://rs.tdwg.org/dwc/terms/verbatimTaxonRank Data Type: string Required: false
vernacularName	A common or vernacular name. Use this in the core file when there is only a single common name to share per taxon record. Example: "Andean Condor", "Condor Andino", "American Eagle", "Gänsegeier" Qualified Name: http://rs.tdwg.org/dwc/terms/vernacularName Data Type: string Required: false
nomenclaturalCode	The nomenclatural code under which the scientificName is constructed. Example: ICBN; ICZN Qualified Name: http://rs.tdwg.org/dwc/terms/nomenclaturalCode Data Type: http://rs.gbif.org/vocabulary/gbif/nomenclatural_code Required: false
taxonomicStatus	The status of the use of the scientificName as a label for a taxon. Requires taxonomic opinion to define the scope of a taxon. Rules of priority then are used to define the taxonomic status of the nomenclature contained in that scope, combined with the experts opinion. It must be linked to a specific taxonomic reference that defines the concept. Recommended vocabulary: http://rs.gbif.org/vocabulary/gbif/taxonomic_status.xml Example: "invalid", "misapplied", "homotypic synonym", "accepted" Qualified Name: http://rs.tdwg.org/dwc/terms/taxonomicStatus Data Type: string Required: false
nomenclaturalStatus	The status related to the original publication of the name and its conformance to the relevant rules of nomenclature. It is based essentially on an algorithm according to the business rules of the code. It requires no taxonomic opinion. Recommended vocabulary: http://rs.gbif.org/vocabulary/gbif/nomenclatural_status.xml Example: "nom. ambig.", "nom. illeg.", "nom. subnud." Qualified Name: http://rs.tdwg.org/dwc/terms/nomenclaturalStatus Data Type: string Required: false
taxonRemarks	Comments or notes about the taxon or name. Example: "Type consists of a skull and skeletal fragments". Qualified Name: http://rs.tdwg.org/dwc/terms/taxonRemarks Data Type: string Required: false

modified	Date when the record was last updated Example: "2009-08-21" Qualified Name: http://purl.org/dc/terms/modified Data Type: date Required: false
language	The language of the parent resource. Recommended best practice is to use a controlled vocabulary such as ISO 693 Example: "eng" Qualified Name: http://purl.org/dc/terms/language Data Type: string Required: false
rights	Information about rights held in and over the resource. Typically, rights information includes a statement about various property rights associated with the resource, including intellectual property rights. Example: "Content licensed under Creative Commons Attribution 3.0 United States License", "CC BY-SA" Qualified Name: http://purl.org/dc/terms/rights Data Type: string Required: false
rightsHolder	A person or organization owning or managing rights over the resource. Qualified Name: http://purl.org/dc/terms/rightsHolder Data Type: string Required: false
accessRights	Information about who can access the resource or an indication of its security status. Access Rights may include information regarding access or restrictions based on privacy, security, or other policies. Example: "not-for-profit use only" Qualified Name: http://purl.org/dc/terms/accessRights Data Type: string Required: false
bibliographicCitation	Citation information specified by the data publisher. Citation information is inherited downward by all child taxa if no other citation is included. Citation information is NOT accumulated upward. For example, one citation may be linked to a Mammalia entry and generally applies to all mammal species but a different citation for a child taxon, Primates, applies to all child primate taxa. Example: "van Soest, R. (2009). <i>Leucandra fistulosa</i> (Johnston, 1842). In: Van Soest, R.W.M, Boury-Esnault, N., Hooper, J.N.A., Rützler, K, de Voogd, N.J., Alvarez, B., Hajdu, E., Pisera, A.B., Vacelet, J. Manconi, R., Schoenberg, C., Janussen, D., Tabachnick, K.R., Klautau, M. (Eds) (2009). World Porifera database" Qualified Name: http://purl.org/dc/terms/bibliographicCitation Data Type: string Required: false
informationWithheld	Additional remarks as to information not published, but available Example: "hybrid parents information available" Qualified Name: http://rs.tdwg.org/dwc/terms/informationWithheld Data Type: string Required: false
datasetID	An identifier for a (sub) dataset. Ideally globally unique, but any id allowed Example: "13" Qualified Name: http://rs.tdwg.org/dwc/terms/datasetID Data Type: string Required: false
datasetName	The title of the (sub)dataset optionally also referenced via datasetID Example: "World Register of Marine Species" "Fauna Europaea" Qualified Name: http://rs.tdwg.org/dwc/terms/datasetName Data Type: string Required: false
source	Used to link to an external representation of the data record such as in a source web database. A URI link or reference to the source of this record. A link to a webpage or RESTful webservice is recommended. URI is mandatory format. Example: " http://www.catalogueoflife.org/annual-

	checklist/show_species_details.php?record_id=6197868” Qualified Name: http://purl.org/dc/terms/source Data Type: uri Required: false
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Vernacular Names Extension

This extension provides the means to share information related to common (vernacular) names linked to taxa in the core data file. Multiple vernacular names can be linked to the same taxon via the taxonID.

Repository: <http://rs.gbif.org/extension/gbif/1.0/vernacular.xml>

taxonID	<p>The first field in the data file should be the taxonID representing the taxon in the core data file to which this vernacular name points. This identifier provides the link between the core data record and the extension record.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true</p>
vernacularName	<p>A common or vernacular name.</p> <p>Example: "Andean Condor", "Condor Andino", "American Eagle", "Gönsegeier"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/vernacularName Data Type: string Required: true</p>
source	<p>Bibliographic citation referencing a source where the vernacular name refers to the cited species.</p> <p>Example: "Peterson Field Guide to the Eastern Seashore, Houghton Mifflin Co, 1961, p131"</p> <p>Qualified Name: http://purl.org/dc/terms/source Data Type: string Required: false</p>
language	<p>ISO 639-1 language code used for the vernacular name value.</p> <p>Example: "ES", "Spanish", "Español"</p> <p>Qualified Name: http://purl.org/dc/terms/language Data Type: http://iso.org/639-1 Required: false</p>
temporal	<p>temporal context when name is/was used</p> <p>Example: "19th Century"; 1950</p> <p>Qualified Name: http://purl.org/dc/terms/temporal Data Type: string Required: false</p>
locationID	<p>An identifier for the set of location information (data associated with dcterms:Location). May be a global unique identifier or an identifier specific to the data set.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/locationID Data Type: string Required: false</p>
locality	<p>The specific description of the area from which the vernacular name usage originates. Vernacular names may have very specific regional contexts. A name used for a species in one area may refer to a different species in another.</p> <p>Example: "Southeastern coastal New England from Buzzards Bay through Rhode Island"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/locality Data Type: string Required: false</p>
countryCode	<p>The standard code for the country in which the vernacular name is used. Recommended best practice is to use the ISO 3166-1-alpha-2 country codes available as a vocabulary at http://rs.gbif.org/vocabulary/iso/3166-1_alpha2.xml. For multiple countries separate values with a comma ","</p> <p>Example: "AR" for Argentina, "SV" for El Salvador. "AR,CR,SV" for Argentina, Costa Rica, and El Salvador combined.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/countryCode</p>

	Data Type: string Required: false
sex	The sex (gender) of the taxon for which the vernacular name applies when the vernacular name is limited to a specific gender of a species. If not limited sex should be empty. For example the vernacular name "Buck" applies to the "Male" gender of the species, <i>Odocoileus virginianus</i> . Example: "male" Qualified Name: http://rs.tdwg.org/dwc/terms/sex Data Type: http://rs.gbif.org/vocabulary/gbif/sex Required: false
lifeStage	The age class or life stage of the species for which the vernacular name applies. Best practice is to utilise a controlled list of terms for this value. Example: 'juvenile' is the life stage of the fish <i>Pomatomus saltatrix</i> for which the name "snapper blue" refers.' Qualified Name: http://rs.tdwg.org/dwc/terms/lifeStage Data Type: http://rs.gbif.org/vocabulary/gbif/life_stage Required: false
isPlural	This value is true if the vernacular name it qualifies refers to a plural form of the name. Example: The term "Schoolies" is the plural form of a name used along the coastal Northeastern U.S. for groups of juvenile fish of the species, <i>Morone saxatilis</i> . Qualified Name: http://rs.gbif.org/terms/1.0/isPlural Data Type: http://rs.gbif.org/vocab/boolean/ Required: false
isPreferredName	This term is true if the source citing the use of this vernacular name indicates the usage has some preference or specific standing over other possible vernacular names used for the species. Some organisations have attempted to assign specific and unique vernacular names for particular taxon groups in a systematic attempt to bring order and consistency to the use of these names. For example, the American Ornithological Union assigns the name "Pearl Kite" for the taxon, <i>Gampsonyx swainsonii</i> . The value of isPreferredName for this record would be true. Example: "True" "False" Qualified Name: http://rs.gbif.org/terms/1.0/isPreferredName Data Type: http://rs.gbif.org/vocab/boolean/ Required: false
organismPart	The part of the organism to which the vernacular name refers. Best practice is to utilise a controlled vocabulary for this term although it is likely that multiple controlled lists for different organism groups may be the best implementation for this term. The spice "Mace", is derived from the "aril" of the plant <i>Myristica fragrans</i> while the spice "nutmeg" is derived from the "seed." "Seed" and "Aril" represent two different values for organismPart. Qualified Name: http://rs.gbif.org/terms/1.0/organismPart Data Type: string Required: false
taxonRemarks	A description of any context that qualify the specific usage of the vernacular name. Example: "This name applies only when the fruit has been blessed by a tribal shaman" Qualified Name: http://rs.tdwg.org/dwc/terms/taxonRemarks Data Type: string Required: false

References Extension

Use this extension to describe one or more bibliographic references related to a taxon in the core data file. Use the type field to qualify the references. This extension supports the sharing of referenced synonymic checklists.

RowType: <http://rs.gbif.org/terms/1.0/Reference>

Repository: <http://rs.gbif.org/extension/gbif/1.0/references.xml>

taxonID	The first field in the data file should be the taxonID representing the taxon in the core data file to which this reference record points. This identifier provides the link between the core data record and the extension record. Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true
identifier	DOI, ISBN, URI, etc referring to the reference. This can be repeated in multiple rows to include multiple identifiers, e.g. a DOI and a URL pointing to a pdf of the article. Example: doi:10.1038/ng0609-637; http://www.nature.com/ng/journal/v41/n6/pdf/ng0609-637.pdf Qualified Name: http://purl.org/dc/terms/identifier Data Type: string Required: false
bibliographicCitation	A text string referring to an un-parsed bibliographic citation. Example: "Hartge, P., Genetics of reproductive lifespan. Nature Genetics 41, 637 - 638 (2009)" Qualified Name: http://purl.org/dc/terms/bibliographicCitation Data Type: string Required: false
title	Title of book or article Example: "Genetics of reproductive lifespan", "Field Guide to Moths of Eastern North America" Qualified Name: http://purl.org/dc/terms/title Data Type: string Required: false
creator	The author or authors of the referenced work Example: "Patricia Hartge" Qualified Name: http://purl.org/dc/terms/creator Data Type: string Required: false
date	Date of publication, recommended ISO format YYYY or YYYY-MM-DD Example: "6/1/2009"; "2009" Qualified Name: http://purl.org/dc/terms/date Data Type: string Required: false
source	If the reference is part of a larger work, this can be cited here. In case of articles this is the journal, for parts of books the book itself Example: Nature Genetics 41, 635 (2009) Qualified Name: http://purl.org/dc/terms/source Data Type: string Required: false
description	Abstracts, remarks, notes Example: "Five genome-wide association studies of the timing of menarche and menopause have now taken us beyond the range of candidate gene and linkage studies. The list of new genetic associations identified for these two traits should shed light on the mechanisms of ovarian aging, as well as breast cancer and other diseases associated with reproductive lifespan."

	<p>Qualified Name: http://purl.org/dc/terms/description Data Type: string Required: false</p>
subject	<p>Semicolon separated list of keywords. Can include a resource qualifier that specifies the relation of this reference to the taxon, e.g namePublishedIn Example: genomics; epidemiology Qualified Name: http://purl.org/dc/terms/subject Data Type: string Required: false</p>
language	<p>ISO 639-1 language code indicating the source language of the referent publication Example: "en" Qualified Name: http://purl.org/dc/terms/language Data Type: http://iso.org/639-1 Required: false</p>
rights	<p>copyright information relating to the referenced publication Example: "Copyright © 2009 Wiley-Liss, Inc., A Wiley Company" Qualified Name: http://purl.org/dc/terms/rights Data Type: string Required: false</p>
taxonRemarks	<p>Annotation of taxon-specific information related to the referenced publication. Example: "transferred H. nigritarsus to Acanolonia"; "Type specimen is a skeleton" Qualified Name: http://rs.tdwg.org/dwc/terms/taxonRemarks Data Type: string Required: false</p>
type	<p>Used to assign a bibliographic reference to list of taxonomic or nomenclatural categories. Best practice is to use a controlled vocabulary. See an example below in data type. Example: "Original publication of new combination (comb nov.)" Qualified Name: http://purl.org/dc/terms/type Data Type: http://rs.gbif.org/vocabulary/gbif/referenceType Required: false</p>

Species Distribution Extension

Use this extension to share information on one or more distribution references for a taxon. One or more locality records may be linked to the same taxon. For example multiple localities, regions, or countries may be listed. Use this extension to describe the threat status for a taxon, seasonal distribution changes, and other properties linked to a taxon in a particular region.

Repository: <http://rs.gbif.org/extension/gbif/1.0/distribution.xml>

taxonID	<p>The first field in the data file should be the taxonID representing the taxon in the core data file to which this distribution record points. This identifier provides the link between the core data record and the extension record.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true</p>
locality	<p>The verbatim name of the area this distributon record is about.</p> <p>Example: "Patagonia"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/locality Data Type: string Required: false</p>
locationID	<p>A code for the named area this distributon record is about. See http://en.wikipedia.org/wiki/ISO_3166-2 for state codes within a country, otherwise use a prefix for each code to indicate the source of the code. See http://rs.gbif.org/areas/ for GBIF recommended area vocabularies</p> <p>Example: "TDWG:AGS-TF; ISO3166:AR; WOEID:564721"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/locationID Data Type: string Required: false</p>
countryCode	<p>ISO3166 alpha 2 (3 is permissable) country codes the area belongs to or as an alternative for a lcoationID if the area is a country. For multiple countries separate values with a comma "," Use country name if necessary.</p> <p>Example: "AR" "US;CA;MX"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/countryCode Data Type: string Required: false</p>
lifeStage	<p>The distribution information pertains solely to a specific life stage of the taxon. See the Life Stage vocabulary at http://rs.gbif.org/vocabulary/gbif/life_stage.xml for recommended values.</p> <p>Example: "adult"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/lifeStage Data Type: http://rs.gbif.org/vocabulary/gbif/life_stage Required: false</p>
occurrenceStatus	<p>Term describing the status of the organism in the given area based on how frequent the species occurs. See the Occurrence status vocabulary at http://rs.gbif.org/vocabulary/gbif/occurrence_status.xml for recommended values.</p> <p>Example: "Absent" "present"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/occurrenceStatus Data Type: http://rs.gbif.org/vocabulary/gbif/occurrence_status/ Required: false</p>
threatStatus	<p>Threat status of a species as defined by IUCN:</p> <p>http://www.iucnredlist.org/static/categories_criteria_3_1 - categories</p> <p>Example: "EX" "EW" "CR"</p> <p>Qualified Name: http://rs.gbif.org/terms/1.0/threatStatus</p>

	Data Type: http://rs.gbif.org/vocabulary/iucn/threat_status/ Required: false
establishmentMeans	Term describing whether the organism occurs natively, is introduced or cultivated. Example: "introduced" Qualified Name: http://rs.tdwg.org/dwc/terms/establishmentMeans Data Type: http://rs.gbif.org/vocabulary/gbif/establishment_means/ Required: false
appendixCITES	The CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix number the taxa is listed. It is possible to have different appendix numbers for different areas, but "global" as an area is also valid if its the same worldwide Example: "II" Qualified Name: http://rs.gbif.org/terms/1.0/appendixCITES Data Type: http://rs.gbif.org/vocab/cites/ Required: false
eventDate	Relevant temporal context for the distribution record. Preferably given as a year range or single year on which the distribution record is valid. For the same area and taxon there could therefore be several records with different temporal context, e.g. in 5 year intervals for invasive species. Example: "1930"; "1939-1945" Qualified Name: http://rs.tdwg.org/dwc/terms/eventDate Data Type: string Required: false
startDayOfYear	Seasonal temporal subcontext within the eventDate context. Useful for migratory species. The earliest ordinal day of the year on which the distribution record is valid. Numbering starts with 1 for January 1 and ends with 365 for December 31. Example: "90" Qualified Name: http://rs.tdwg.org/dwc/terms/startDayOfYear Data Type: string Required: false
endDayOfYear	Seasonal temporal subcontext within the eventDate context. The latest ordinal day of the year on which the distribution record is valid Example: "120" Qualified Name: http://rs.tdwg.org/dwc/terms/endDayOfYear Data Type: string Required: false
source	Source reference for this distribution record. Can be proper publication citation, a webpage URL, etc. Example: "Euro+Med Plantbase - the information resource for Euro-Mediterranean plant diversity (2006-). Published on the Internet http://ww2.bgbm.org/EuroPlusMed/ July, 2009" Qualified Name: http://purl.org/dc/terms/source Data Type: string Required: false
occurrenceRemarks	Comments or notes about the distribution Example: "Excluded because of misidentification" Qualified Name: http://rs.tdwg.org/dwc/terms/occurrenceRemarks Data Type: string Required: false

Species Description Extension

Use this extension to provide descriptive text for a taxon. This is typically in the form of a single paragraph per record as would be normally stored in a database. Descriptions can be qualified by a type to indicate, for example that the description is related to, for example, the morphology conservation, reproduction, etc. Multiple descriptions equal multiple records in a descriptions file.

Repository: <http://rs.gbif.org/extension/gbif/1.0/description.xml>

taxonID	<p>The first field in the data file should be the taxonID representing the taxon in the core data file to which this description record points. This identifier provides the link between the core data record and the extension record.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true</p>
type	<p>The kind of description given. See the Description Type vocabulary at http://rs.gbif.org/vocabulary/gbif/description_type.xml for a possible list of description types.</p> <p>Example: “morphology”, “distribution”, “diagnostic”</p> <p>Qualified Name: http://purl.org/dc/terms/type Data Type: http://rs.gbif.org/vocabulary/gbif/descriptionType Required: true</p>
description	<p>Any descriptive free text matching the category given by the type (described above)</p> <p>Qualified Name: http://purl.org/dc/terms/description Data Type: string Required: true</p>
source	<p>Source reference of this description; a URL or full publication citation</p> <p>Qualified Name: http://purl.org/dc/terms/source Data Type: string Required: false</p>
language	<p>ISO 639-1 language code used for the vernacular name value.</p> <p>Example: “ES”, “Spanish”, “Español”</p> <p>Qualified Name: http://purl.org/dc/terms/language Data Type: string Required: false</p>
creator	<p>The author(s) of the textual information provided for a description</p> <p>Example: “Hershkovitz, P.”</p> <p>Qualified Name: http://purl.org/dc/terms/creator Data Type: string Required: false</p>
contributor	<p>An entity responsible for making contributions to the textual information provided for a description</p> <p>Qualified Name: http://purl.org/dc/terms/contributor Data Type: string Required: false</p>
audience	<p>A class or description for whom the dwc:description is intended or useful</p> <p>Example: “experts”, “general public”, “children”</p> <p>Qualified Name: http://purl.org/dc/terms/audience Data Type: string Required: false</p>
license	<p>Official permission to do something with the resource. Please use Creative Commons URIs if you can.</p> <p>Example: CC-BY</p> <p>Qualified Name: http://purl.org/dc/terms/license Data Type: string Required: false</p>
rightsHolder	<p>A person or organization owning or managing rights over the resource.</p> <p>Qualified Name: http://purl.org/dc/terms/rightsHolder Data Type: string</p>

	Required: false
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Alternative Identifiers

Use this extension if you have more than one identifier or link to information about the taxon. A source database, may, for example provide access to the source data records through a web page, a web service, and a resolvable identifier such as LSID, DOI or other means.

RowType: <http://rs.gbif.org/terms/1.0/Identifier>

Repository: <http://rs.gbif.org/extension/gbif/1.0/identifier.xml>

taxonID	<p>The first field in the data file should be the taxonID representing the taxon in the core data file to which this identifier record points. This identifier provides the link between the core data record and the extension record.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true</p>
identifier	<p>External identifier used for the same taxon. Can be a URL pointing to a webpage, an xml or rdf document, a DOI, UUID or any other identifier Example: "urn:lsid:ipni.org:names:692570-1:1.4"</p> <p>Qualified Name: http://purl.org/dc/terms/identifier Data Type: string Required: true</p>
title	<p>An optional display label for the URL that the publisher may prefer be displayed with the identifier or link Example: "Danaus plexippus page", "COL Taxon LSID"</p> <p>Qualified Name: http://purl.org/dc/terms/title Data Type: string Required: false</p>
subject	<p>keywords qualifying the identifier</p> <p>Qualified Name: http://purl.org/dc/terms/subject Data Type: string Required: false</p>
format	<p>Optional <i>mime type</i> of content returned by identifier in case the identifier is resolvable. Plain UUIDs for example do not have a dc:format return type, as they are not resolvable on their own. For a list of MIME types see the list maintained by IANA: http://www.iana.org/assignments/media-types/index.html, in particular the text http://www.iana.org/assignments/media-types/text/ and application http://www.iana.org/assignments/media-types/application/ types. Frequently used values are text/html, text/xml, application/rdf+xml, application/json Example: application/rdf+xml</p> <p>Qualified Name: http://purl.org/dc/terms/format Data Type: string Required: false</p>

Types and Specimens Extension

Use this extension to share data relating to one or more specimens or type references linked to the core taxon

RowType: <http://rs.gbif.org/terms/1.0/Specimen>

Repository: http://rs.gbif.org/sandbox/extension/gbif_taxon_type_specimens.xml

taxonID	<p>The first field in the data file should be the taxonID representing the taxon in the core data file to which this specimen record points. This identifier provides the link between the core data record and the extension record.</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true</p>
bibliographicCitation	<p>A text string citing the described specimen. Often found in taxonomic treatments and frequently based on institution code and catalog number.</p> <p>Example: Iraq: Mosul: Jabal Khantur prope Sharanish N. Zakho, in fissures rupium calc., 1200 m, Rech. 12083 (W!).</p> <p>Qualified Name: http://purl.org/dc/terms/bibliographicCitation Data Type: string Required: false</p>
occurrenceID	<p>An identifier for the specimen, preferably a resolvable globally unique identifier.</p> <p>Example: http://sweetgum.nybg.org/vh/specimen.php?irn=793312</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/occurrenceID Data Type: string Required: false</p>
institutionCode	<p>The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.</p> <p>Examples: "MVZ", "FMNH", "AKN-CLO", "University of California Museum of Paleontology (UCMP)"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/institutionCode Data Type: string Required: false</p>
collectionCode	<p>The name, acronym, coden, or initialism identifying the collection or data set from which the record was derived.</p> <p>Examples: "Mammals", "Hildebrandt", "eBird"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/collectionCode Data Type: string Required: false</p>
catalogNumber	<p>An identifier (preferably unique) for the record within the data set or collection.</p> <p>Examples: "2008.1334", "145732a", "145732"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/catalogNumber Data Type: string Required: false</p>
typeStatus	<p>The type status of the specimen. Preferrably taken from a vocabulary like http://rs.gbif.org/vocabulary/gbif/type_status.xml</p> <p>Example: "holotype" "syntype" "lectotype"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/typeStatus Data Type: string Required: false</p>
scientificName	<p>The scientific name as which this specimen has been identified in the collection/source. Not necessarily the same as the scientific name in the core file.</p> <p>Example: "<i>Ctenomys sociabilis</i>" "<i>Roptrocerus typographi</i> (Györfi, 1952)"</p> <p>Qualified Name: http://rs.tdwg.org/dwc/terms/scientificName Data Type: string</p>

	Required: false
taxonRank	The rank of the taxon bearing the scientific name Example: "subspecies", "varietas", "forma", "species", "genus" Qualified Name: http://rs.tdwg.org/dwc/terms/taxonRank Data Type: string Required: false
identificationRemarks	Information regarding the basis of the identification or designation (in the case of type species and type genera) Example: by monotypy Qualified Name: http://rs.tdwg.org/dwc/terms/identificationRemarks Data Type: string Required: false
locality	The location where the the specimen was collected. In case of type specimens the type locality. Example: Iraq: Mosul: Jabal Khantur prope Sharanish N. Zakho, in fissures rupium calc., 1200 m Qualified Name: http://rs.tdwg.org/dwc/terms/locality Data Type: string Required: false
sex	The sex of the specimen being referenced. Example: male Qualified Name: http://rs.tdwg.org/dwc/terms/sex Data Type: string Required: false
recordedBy	The primary collector or observer, especially one who applies a personal identifier (recordNumber), should be listed first. Example: KH Reching Qualified Name: http://rs.tdwg.org/dwc/terms/recordedBy Data Type: string Required: false
source	Source reference for this type record. Can be proper publication citation, a webpage URL, etc. Qualified Name: http://purl.org/dc/terms/source Data Type: string Required: false
verbatimEventDate	The date when the specimen was collected Example: "spring 1910", "Marzo 2002", "1999-03-XX", "17IV1934" Qualified Name: http://rs.tdwg.org/dwc/terms/verbatimEventDate Data Type: string Required: false
verbatimLabel	The full, verbatim text from the specimen label Qualified Name: http://rs.gbif.org/terms/1.0/verbatimLabel Data Type: string Required: false
verbatimLongitude	The geographic longitude Example: 121d 10' 34 W Qualified Name: http://rs.tdwg.org/dwc/terms/verbatimLongitude Data Type: string Required: false
verbatimLatitude	The geographic latitude Example: 41 05 54.03S Qualified Name: http://rs.tdwg.org/dwc/terms/verbatimLatitude Data Type: string Required: false

Resource Relationship Extension

This extension is used to describe one or more relationships that the core taxon has with other taxa, either in the source list or included in the record. This extension could be used, for example, to provide a list of plant species (one record per species) pollinated by a bee species listed in the core species list.

RowType: <http://rs.tdwg.org/dwc/terms/ResourceRelationship>

Repository: http://rs.gbif.org/extension/dwc/resource_relation.xml

taxonID	The identifier used in the core data file representing the taxon for which the current record refers. This identifier provides the link between the core data record and the extension record. Qualified Name: http://rs.tdwg.org/dwc/terms/taxonID Data Type: string Required: true
relatedResourceID	When the related taxon occurs in the core data file, this is the taxonID of that taxon. Qualified Name: http://rs.tdwg.org/dwc/terms/relatedResourceID Data Type: string Required: false
scientificName	When the related taxon (the object) does not occur in the core data file, refer to it by scientific name. Example: "Quercus agrifolia var. oxyadenia (Torr.)" Qualified Name: http://rs.tdwg.org/dwc/terms/scientificName Data Type: string Required: false
relationshipOfResource	The relationship of the resource identified by relatedResourceID to the subject (optionally identified by the resourceID). Recommended best practice is to use a controlled vocabulary. Example: duplicate of", "mother of", "endoparasite of", "host to", "sibling of", "valid synonym of", "located within" Qualified Name: http://rs.tdwg.org/dwc/terms/relationshipOfResource Data Type: string Required: false
relationshipAccordingTo	The source (person, organization, publication, reference) establishing the relationship between the two resources. Example: "Julie Woodruff" Qualified Name: http://rs.tdwg.org/dwc/terms/relationshipAccordingTo Data Type: string Required: false
relationshipEstablishedDate	The date-time on which the relationship between the two resources was established. Recommended best practice is to use an encoding scheme, such as ISO 8601:2004(E). Example: 1963-03-08T14:07-0600 Qualified Name: http://rs.tdwg.org/dwc/terms/relationshipEstablishedDate Data Type: string Required: false
relationshipRemarks	Comments or notes about the relationship between the two resources. Example: "mother and offspring collected from the same nest" Qualified Name: http://rs.tdwg.org/dwc/terms/relationshipRemarks Data Type: string Required: false
resourceRelationshipID	An identifier for an instance of relationship between one resource (the subject) and another (relatedResource, the object). Example: "231" "urn:lsid:gbif.org:usages:32567" Qualified Name: http://rs.tdwg.org/dwc/terms/resourceRelationshipID Data Type: string Required: false

Summary: GNA Profile for Species Checklists

An abbreviated listing of the core terms and extensions with their terms is listed below.

Taxon

taxonID | acceptedNameUsageID | acceptedNameUsage | parentNameUsageID |
parentNameUsage | originalNameUsageID | originalNameUsage | nameAccordingToID |
nameAccordingTo | namePublishedInID | namePublishedIn | taxonConceptID |
scientificNameID | scientificName | scientificNameAuthorship | higherClassification |
kingdom | phylum | class | order | family | genus | subgenus | specificEpithet |
infraspecificEpithet | taxonRank | verbatimTaxonRank | vernacularName |
nomenclaturalCode | taxonomicStatus | nomenclaturalStatus | taxonRemarks | modified |
language | rights | rightsHolder | accessRights | bibliographicCitation |
informationWithheld | datasetID | datasetName | source

Extensions

Vernacular Names Extension

RowType: <http://rs.gbif.org/terms/1.0/VernacularName>

Repository: <http://rs.gbif.org/extension/gbif/1.0/vernacular.xml>

vernacularName | source | language | temporal | locationID | locality | countryCode | sex | lifeStage | isPlural | isPreferredName | organismPart | taxonRemarks

References Extension

RowType: <http://rs.gbif.org/terms/1.0/Reference>

Repository: <http://rs.gbif.org/extension/gbif/1.0/references.xml>

identifier | bibliographicCitation | title | creator | date | source | description | subject | language | rights | taxonRemarks | type

Species Distribution Extension

RowType: <http://rs.gbif.org/terms/1.0/Distribution>

Repository: <http://rs.gbif.org/extension/gbif/1.0/distribution.xml>

locationID | locality | countryCode | lifeStage | occurrenceStatus | threatStatus | establishmentMeans | appendixCITES | eventDate | startDayOfYear | endDayOfYear | source | occurrenceRemarks

Species Description Extension

RowType: <http://rs.gbif.org/terms/1.0/Description>

Repository: <http://rs.gbif.org/extension/gbif/1.0/description.xml>

| description | type | source | language | creator | contributor | audience | license | rightsHolder

Alternative Identifiers

RowType: <http://rs.gbif.org/terms/1.0/Identifier>

Repository: <http://rs.gbif.org/extension/gbif/1.0/identifier.xml>

identifier | title | subject | format |

Types and Specimens Extension

RowType: <http://rs.gbif.org/terms/1.0/Specimen>

Repository: http://rs.gbif.org/sandbox/extension/gbif_taxon_type_specimens.xml

bibliographicCitation | occurrenceID | institutionCode | collectionCode | catalogNumber |
typeStatus | scientificName | taxonRank | identificationRemarks | locality | sex |
recordedBy | source | verbatimEventDate | verbatimLabel | verbatimLongitude |
verbatimLatitude

Resource Relationship Extension

RowType: <http://rs.tdwg.org/dwc/terms/ResourceRelationship>

Repository: http://rs.gbif.org/extension/dwc/resource_relation.xml

resourceRelationshipID | relatedResourceID | relationshipOfResource |
relationshipAccordingTo | relationshipEstablishedDate | relationshipRemarks |
scientificName