BioNet Species Names data standard

Version 1.3

Department of Climate Change, Energy, the Environment and Water

NSW GOVERNMENT

Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

Artist and designer Nikita Ridgeway from Aboriginal design agency Boss Lady Creative Designs created the People and Community symbol.

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1. Introduction

The BioNet Species Names Web Service provides an open application programming interface (API). It enables IT developers to integrate the BioNet species taxonomy within software applications.

This open data initiative has many potential uses. These range from mobile apps to organisational decision-management business systems.

The web service complements existing BioNet applications. It provides direct programmatic access to BioNet data holdings.

This document sets out detailed information on the data available via the BioNet Species Names Web Service. It can help you evaluate whether the web service will meet your data needs.

Please make sure the version of this data standard (1.3) matches the online data. Check the value in 'bioNet:dataStandardVersion' for 'EntitySet Name=SpeciesNames':

> <**EntitySet Name="SpeciesNames"** EntityType="BioSvcApp.Models.vwCUBE_SpeciesTaxonomy" bioNet:bioNetOpenAPIVersion="4.0.2" **bioNet:dataStandardVersion="1.3"** bioNet:dateLastBulkUpdate="01/02/2025"/>

2. Overview of the web service and standard

The web service is an OASIS Open Data (OData) v4.0-based web service.

OData provides a standardised RESTful protocol for querying and retrieving data.

The BioNet Web Service developer guide provides more background information about the protocol. OData makes data available via 'entity sets' structured as tables of data.

Table 1 gives a high-level overview of the categories of data communicated in the entity set.

Section 3 sets out detailed descriptions of the data fields available within each category.

Table 1 Overview of the categories of data shared via the SpeciesNames entity set

Category	Description
Metadata	Metadata associated with the record
Taxonomy	Detailed taxonomic data including whether the species name is currently or not currently in use
Additional Attributes	Additional attributes useful for grouping species in search results. For instance, the growth form of the species or a common term for a group of species such as 'Birds'
Legislative Status	Information on the legislative status of the species. For example, whether it is: listed as threatened in New South Wales, covered by a migratory bird agreement, or listed on the *Sensitive species data policy*

3. Specifications for the SpeciesNames entity set

Tables 2 to 5 provide the specifications of the data fields available in each category of the SpeciesNames entity set available via the BioNet Species Names Web Service. Each table presents the group of terms that fall within the specified category.

Table 2 Available 'metadata' fields in the SpeciesNames entity set

Property name	Occurrence	Definition	Format	Example	Data type
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	'en'	"Edm.String"
dcterms_modified	1	The most recent datetime on which the resource was changed based on ISO 8601:2004(E).	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	'15/03/2011 4:42 PM +11:00' 2025-01-30T11:22:24.77+11:00	"Edm.DateTimeOffset"
dcterms_available	1	Date that the resource became or will become available.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	'16/04/2010 4:02:29 PM +11:00' 2023-08-21T10:49:25.007+10:00	"Edm.DateTimeOffset"
dcterms_rights	1	Information about rights held in and over the resource. Typically, rights information includes a statement about various property rights	Always: CC-BY 4.0	'CC-BY 4.0'	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
		associated with the resource, including intellectual property rights.			
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: NSW Department of Planning, Industry and Environment	‘NSW Dept of Planning, Industry and Environment’	"Edm.String"
dcterms_type	1	The nature or genre of the resource based on the Dublin Core recommended best practice controlled vocabulary (DCMI Type Vocabulary).	Always: service	‘service’	"Edm.String"

Table 3 Available ‘taxonomy’ fields in the SpeciesNames entity set

Property name	Occurrence	Definition	Format	Example	Data type
speciesID	1	The unique identifier within BioNet.	Integer	‘32’	"Edm.Int32" Nullable ="false"
taxonRank	1	The taxonomic rank of the most specific name in the scientific name.	Text	‘Species’	"Edm.String" Nullable ="false"
kingdomID	1	The unique identifier within BioNet associated with the kingdom.	Integer	‘138’	"Edm.Int32"
kingdom	1	The full scientific name of the kingdom in which the taxon is classified.	1 item from the following controlled vocabulary: • Animalia • Plantae • Fungi	‘Animalia’	"Edm.String" Nullable ="false"
classID	1	The unique identifier within BioNet associated with the class.	Integer	‘35’	"Edm.Int32"
class	1	The full scientific name of the class in which the taxon is classified.	Text	‘Reptilia’	"Edm.String" Nullable ="false"

Property name	Occurrence	Definition	Format	Example	Data type
orderID	1	The unique identifier within BioNet associated with the order.	Integer	‘129’	"Edm.Int32"
order	1	The full scientific name of the order in which the taxon is classified.	Text	‘Squamata’	"Edm.String" Nullable ="false"
familyID	1	The unique identifier within BioNet associated with the family.	Integer	‘16’	"Edm.Int32"
family	1	The full scientific name of the family in which the taxon is classified.	Text	‘Elapidae’	"Edm.String" Nullable ="false"
sortOrder	1	An integer used to sort species in a sensible taxonomic order.	Integer	‘1371’	"Edm.Int32"
genusID	1	The unique identifier within BioNet associated with the genus.	Integer	‘356’	"Edm.Int32"
Genus	1	The full scientific name of the genus in which the taxon is classified.	Text	‘Demansia‘	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
parentSpeciesID	1	The identifier that links varieties and subspecies with their parent species.	Integer. Note: Where the parentSpeciesID does not match the scientificNameID for a given record then: • to retrieve details of the parent species, create a new query filtering by scientificNameID where the value for scientificNameID equals the value found in parentSpeciesID of the original record • to see all related species, create a new query filtering by parentSpeciesID using the code found in parentSpeciesID of the original record.	'19519'	"Edm.Int32"
specificEpithet	1	The name of the first or species epithet of the scientificName.	Text	'rimicola'	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
infraspecificEpithet	0–1	The name of the lowest or terminal infraspecific epithet of the scientificName, excluding any rank designation.	Text	‘null’	"Edm.String"
scientificNameAuthorship	1	The authorship information for the scientificName formatted according to the conventions of the applicable nomenclaturalCode.	Text	‘Scanlon, 2007’	"Edm.String"
scientificNameID	1	The unique identifier within BioNet associated with the scientificName.	Integer	‘32’	"Edm.Int32"
speciesCode_Synonym	1	Unique alphanumeric code within a kingdom for the scientific name.	Alphanumeric code as follows: • for flora and fungi, the unique code managed by the department • for fauna the Census of Australian Vertebrate Species (CAVS) codes.	‘2658’	"Edm.String" Nullable ="false"

Property name	Occurrence	Definition	Format	Example	Data type
scientificName	1	The full scientific name. When forming part of an identification, this should be the name in the lowest level taxonomic rank that can be determined.	Text	‘Demansia torquata’	"Edm.String" Nullable ="false"
scientificNameHTML	1	The full scientific name including HTML tags for use by HTML applications to correctly format the scientific name.	Text	‘ Demansia torquata‘	"Edm.String" Nullable ="false"
vernacularName	1	The recognised common or vernacular name.	Text	‘Collared Whip Snake’	"Edm.String"
otherVernacularNames	0–n	This gives a list of other common names in addition to the recognised common or vernacular name	List of common names separated by commas	‘Collared Whipsnake, Collared Whip Snake’	"Edm.String"
taxonID	1	The unique identifier within BioNet associated with the currentScientificName .	Integer	‘19519’	"Edm.Int32"

Property name	Occurrence	Definition	Format	Example	Data type
currentScientificNameCode	1	The current scientific name code is a unique code within BioNet associated with the currentScientificName.	Alphanumeric. Notes: When current the value in this field is equal to the value given in the speciesCode field. This field will not be unique across rows. By filtering on this code, you can generate a list of species names previously applied to this.	'5139'	"Edm.String" Nullable="false"
currentScientificName	1	The current scientific name.	Text	'Demansia rimicola'	"Edm.String" Nullable="false"
currentVernacularName	1	The current vernacular name.	Text	'a whip snake'	"Edm.String"
isCurrent	1	Indicates if the name is the current name for the taxon.	True/false	'false'	"Edm.String"

Table 4 Available 'additional attribute' fields in the SpeciesNames entity set

Property name	Occurrence	Definition	Format	Example	Data type
generalTypeID	1	The unique identifier within BioNet associated with the generalType.	Integer	'182'	"Edm.Int32"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest.	Controlled vocabulary – see Appendix 1.1	'Reptiles'	"Edm.String"
establishmentMeans	1	The process by which the biological individual(s) represented in the Occurrence became established at the location.	One item from the following controlled vocabulary: • Alive in NSW, Native • Extinct in NSW, Native • Introduced • Not Known from NSW • Hybrid	'Alive in NSW, Native'	"Edm.String"
primaryGrowthForm	1	The primary growth form of the species.	One item from the following controlled vocabulary: • Chenopod	'Heath shrub'	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
			• Cycad • Epiphyte • Fern and fern allies • Forb • Heath shrub • Hummock Grass • Mallee shrub • Mallee tree • Other Grass • Palm & palmlike • Rush • Sedge • Tree • Tree fern • Tussock Grass • Vine • Shrub • Xanthorrhoea Note: this field does not apply to animals or fungi.		
primaryGrowthFormGroup	1	The growth form group corresponding to the primary growth form.	One item from the following controlled vocabulary: • Fern (EG) • Forb (FG) • Grass and Grass-like (GG)	'Shrub (SG)'	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
			• Other (OG) • Shrub (SG) • Tree (TG) Note: this field does not apply to animals or fungi.		
secondaryGrowthForms	0–n	The secondary growth form(s) of the species.	One or more item from the following controlled vocabulary: • Chenopod • Cycad • Epiphyte • Fern and fern allies • Forb • Heath shrub • Hummock Grass • Mallee shrub • Mallee tree • Other Grass • Palm & palmlike • Rush • Sedge • Tree • Tree fern • Tussock Grass • Vine • Shrub • Xanthorrhoea	‘Shrub; Tree’	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
			Notes: Where more than one item is given, it is separated by a semicolon. This field does not apply to animals or fungi.		
secondaryGrowthFormGroups	0–n	The secondary growth form group(s) corresponding to the secondary growth form.	One or more item from the following controlled vocabulary: • Fern (EG) • Forb (FG) • Grass and Grass-like (GG) • Other (OG) • Shrub (SG) • Tree (TG) Notes: Where more than one item is given, it is separated by a semicolon and the order of the items corresponds the with order of growth forms given in the	‘Shrub (SG); Tree (TG)’	"Edm.String"

Property name	Occurrence	Definition	Format	Example	Data type
			secondaryGrowthForm field. This field does not apply to animals or fungi.		

Table 5 Available 'legislative status' fields in the SpeciesNames entity set

Property name	Occurrence	Definition	Form	Example	Data type
stateConservation	1	The Legal Status of the species within NSW under the *Biodiversity Conservation Act 2016*.	Controlled Vocabulary – see Appendix 1.2	'Vulnerable'	"Edm.String"
protectedInNSW	1	The Legal Status of the species within NSW under the *Biodiversity Conservation Act 2016*.	True/false	'true'	"Edm.String"
sensitivityClass	1	The category of the species in accordance with the department's Sensitive Species Data Policy (SSDP).	1 item from the following controlled vocabulary: • Category 1 • Category 2 • Category 3 • Not Sensitive	'Not Sensitive'	"Edm.String"
TSProfileID	1	The unique identifier for the related threatened species profile as stored in the Threatened Species Profile Database maintained by the department. Otherwise this field gives the value 'N/A'.	Integer or N/A	'10212'	"Edm.Int32"

Property name	Occurrence	Definition	Form	Example	Data type
countryConservation	1	The legal status of the species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act).	Controlled Vocabulary – see Appendix 1.3	'Not Listed'	"Edm.String"
highThreatWeed	0–1	High threat weed cover is plant cover composed of vascular non-native plants that, if not controlled, will invade and outcompete native plant species. Also referred to as high threat weeds (HTW) or high threat exotic vegetation. HTW '– manageable' are a subset of high threat weeds for which sufficient evidence demonstrates their abundance and impact can be effectively controlled with well-planned and implemented	1 item from the following controlled vocabulary: • High Threat Weed – manageable • High Threat Weed – not manageable • blank	'High Threat Weed – manageable'	"Edm.String"

Property name	Occurrence	Definition	Form	Example	Data type
		management actions. HTW '– not manageable' are a subset of high threat weeds for which evidence is not available to demonstrate their abundance and impact can be effectively controlled with appropriate management actions.			
widelyCultivatedNativeSpecies	0–1	A variety of a native species developed in cultivation, usually for the purposes of agriculture, forestry or horticulture, and which, when reproduced retains its distinguishing features, and any native species listed on the high threat weeds list published in the BAM-C.	1 item from the following controlled vocabulary: Widely Cultivated Native Species blank	'Widely Cultivated Native Species'	"Edm.String"
CAMBA	1	Indicates if the species is listed in the	True/false	'false'	"Edm.String"

Property name	Occurrence	Definition	Form	Example	Data type
		Bilateral China–Australia Migratory Bird Agreement (CAMBA) between the Government of Australia and the Government of the People's Republic of China for the protection of Migratory Birds and their Environment (Part 5, Commonwealth EPBC Act 1999).			
JAMBA	1	Indicates if the species is listed in the Bilateral Japan-Australia Migratory Bird Agreement (JAMBA) between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (Part 5,	True/false	'false'	"Edm.String"

Property name	Occurrence	Definition	Form	Example	Data type
		Commonwealth EPBC Act 1999).			
ROKAMBA	1	Indicates if the species is listed in the Bilateral Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA) between the Government of Australia and the Government of the Republic of Korea for the protection of Migratory Birds and their Environment (Part 5, Commonwealth EPBC Act 1999).	True/false	'false'	"Edm.String"

Appendix 1Lists of controlled vocabularies

A1.1 generalType

Algae, Mosses and Lichens

Amphibians

Aquatic Invertebrates

Aquatic Plants

Bats

Birds

Critical Habitat

Disease

Endangered Populations

Epiphytes and Climbers

Ferns and Cycads

Fish

Fungi

Habitat Loss/Change

Herbs and Forbs

Invertebrates

Key Threatening Process

Liverworts

Mallees

Marine Mammals

Marsupials

Monotremes

Orchids

Other Threat

Pest Animal

Reptiles

Rodents

Shrubs

Threatened Ecological Communities

Trees

Weed

A1.2 stateConservation

Vulnerable

Vulnerable Ecological Community

Endangered

Endangered Ecological Community

Endangered Population

Critical Habitat

Critically Endangered

Critically Endangered Ecological Community

Extinct

Extinct in the Wild

Key Threatening Process

Collapsed Ecological Community

Not Listed

A1.3 countryConservation

Conservation Dependent

Critically Endangered

Endangered

Extinct

Extinct in the Wild

Key Threatening Process

Not Listed

Vulnerable