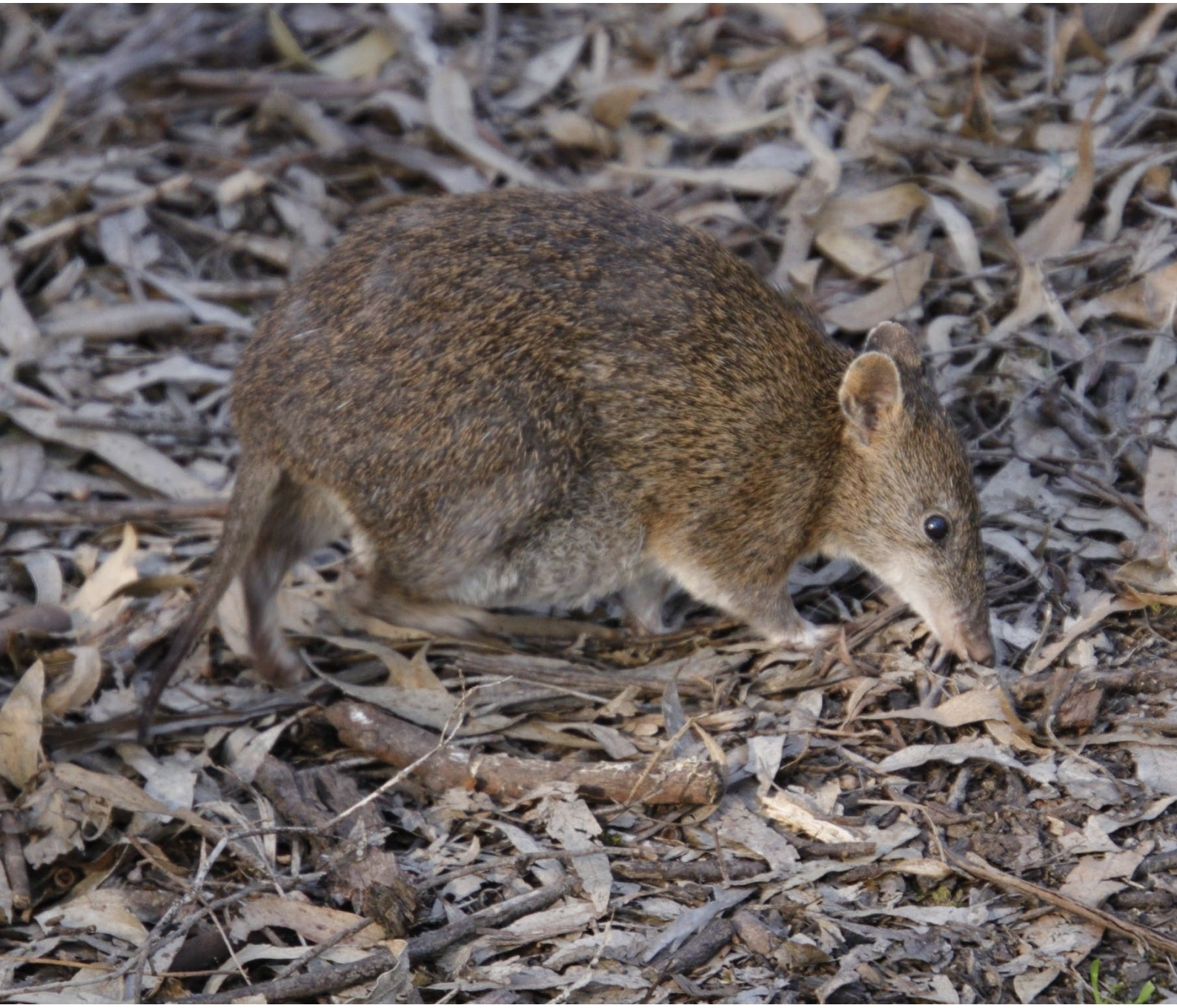

BioNet Threatened Biodiversity data standard

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This resource may contain images or names of deceased persons in photographs or historical content.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 Threatened Biodiversity Web Service provides an open application programming interface (API). It enables IT developers to integrate BioNet's profile data on threatened species, populations, ecological communities and key threatening processes with 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 Threatened Biodiversity 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 metadata. Check the value in 'bioNet:dataStandardVersion' for 'EntitySetName=ThreatenedBiodiversity_Species':

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

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

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

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

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

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

<**EntitySet Name="ThreatenedBiodiversity_TPGeographicData**" EntityType="BioSvcApp.Models.vwCUBE_ThreatenedEntities_TPGeograhpicData" 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.

The Threatened Biodiversity Web Service consists of 7 entity sets linked by profileID.

Tables 1 to 7 give a high-level overview of the categories of data communicated in each of the entity sets. Sections 3 to 9 provide detailed descriptions of the data fields available within each category.

Table 1 Overview of the categories of data in the ThreatenedBiodiversity_Species entity set

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including taxonomic details, legislative status, descriptive data and the status of the profile.
Threats	Information on activities that pose a threat to the ongoing survival of the species.
Habitat & Ecology	Information on the places that the species is likely to occur.
Multimedia	Multimedia resources associated with the profile.
Documentation	References to source information used to compile the profile.
Fire Data	Information on the impact of fire on the species as well as management data for hazard reduction burns.
Assessment Data	Data used in the Biodiversity Assessment Method (BAM) to determine biodiversity values and the impacts of regulated activities for calculating offset requirements.

Table 2 **Overview of the categories of data in the ThreatenedBiodiversity_TSGeographicData entity set**

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including taxonomic details, legislative status, descriptive data and the status of the profile.
Geographic data	Information on the occurrence of the species by IBRA Subregion.

Table 3 **Overview of the categories of data in the ThreatenedBiodiversity_EcologicalCommunities entity set**

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including taxonomic details, legislative status, descriptive data and the status of the profile.
Threats	Information on activities that pose a threat to the ongoing survival of the ecological community.
Habitat & Ecology	Information on the places that the ecological community is likely to occur.
Multimedia	Multimedia resources associated with the profile.
Documentation	References to source information used to compile the profile.
Fire Data	Information on the impact of fire on the ecological community as well as management data for hazard reduction burns.
Assessment Data	Data used in the Biodiversity Assessment Method (BAM) to determine biodiversity values and the impacts of regulated activities for calculating offset requirements.

Table 4 **Overview of the categories of data in the ThreatenedBiodiversity_TECGeographicData entity set**

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including classification details, legislative status, descriptive data and the status of the profile.
Geographic Data	Information on the occurrence of the ecological community by IBRA Subregion.

Table 5 **Overview of the categories of data in the ThreatenedBiodiversity_Populations entity set**

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including classification details, legislative status, descriptive data and the status of the profile.
Threats	Information on activities that pose a threat to the ongoing survival of the population.
Habitat & Ecology	Information on the places that the population is likely to occur.
Multimedia	Multimedia resources associated with the profile.
Documentation	References to source information used to compile the profile.
Fire Data	Information on the impact of fire on the population as well as management data for hazard reduction burns.
Assessment Data	Data used in the Biodiversity Assessment Method (BAM) to determine biodiversity values and the impacts of regulated activities for calculating offset requirements.

Table 6 **Overview of the categories of data in the ThreatenedBiodiversity_TPGeographicData entity set**

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including taxonomic details, legislative status, descriptive data and the status of the profile.
Geographic data	Information on the occurrence of the population by IBRA Subregion.

Table 7 **Overview of the categories of data in the ThreatenedBiodiversity_Key ThreateningProcesses entity set**

Category	Description
Metadata	Metadata associated with the record.
Profile Details	Information on the threatened entity itself, including classification details, legislative status, descriptive data and the status of the profile.
Multimedia	Multimedia resources associated with the profile.
Documentation	References to source information used to compile the profile.

3. Specifications for the ThreatenedBiodiversity_Species entity set

Tables 8 to 15 provide the specifications of the data fields available in each category of the ThreatenedBiodiversity_Species entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Table 8 Available 'metadata' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, CODEN or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Threatened Species	"Edm.String"
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
dcterms_rights	1	Information about rights held in and over the	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		resource. Typically, rights information includes a statement about various property rights associated with the resource, including intellectual property rights.		
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"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: dataset	"Edm.String"
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how this record should be cited (attributed) when used. Note: the date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data (AtlasDB).	BioNet Threatened Species YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"

Table 9 Available 'profile details' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
profileID	1	The unique identifier for the threatened species profile as stored in the Threatened Biodiversity Data Collection. Provides a linking key to ThreatenedBiodiversity_TSGeographicData.	Integer	"Edm.Int32" Nullable="false"
scientificName	1	The full scientific name of the species.	<genus> <specific epithet> <connecting term> <infraspecifc epithet> where the connecting term can be one of the following: subsp. = subspecies var. = variety	"Edm.String"
vernacularName	0–1	The common name or vernacular name of the species (if any).	Text	"Edm.String"
displayNameHTML	1	The name of the species including HTML tags for rendering in HTML applications.	Text with HTML tags	"Edm.String"
stateConservation	1–n	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* (BC	Controlled Vocabulary – see Appendix 1.1	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		Act 2016) or the *Fisheries Management Act 1994* No. 38 (FM Act 1994).		
countryConservation	1	The legal status of the species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Controlled Vocabulary – see Appendix 1.2	"Edm.String"
kingdom	1	The full scientific name of the kingdom in which the taxon is classified.	One item from the following controlled vocabulary: Animalia Plantae Fungi	"Edm.String"
family	1	The full scientific name of the family in which the taxon is classified.	Text	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest.	Controlled vocabulary – see Appendix 1.3	"Edm.String"
dateOfFinalGazettal	1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"
description	0–1	Description of the species.	Text with HTML tags	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
distribution	0–1	Description of where the species occurs.	Text with HTML tags	"Edm.String"
profileStatus	1	Indicates if all the attributes for the entity have been evaluated and populated in the system.	One item from the following controlled vocabulary: • Complete • Incomplete	"Edm.String"

Table 10 Available 'threats' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
threats	1–n	Describes the kind of activities that would harm the sustenance of the species.	<Threat Category 1>;<Threat Category 2>;<Threat>|<Threat Category 1>;<Threat Category 2>;<Threat>	"Edm.String"

Table 11 Available 'habitat and ecology' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
habitatAndEcology	1–n	Describes the places where the species is likely to occur or grow and the ecological environment surrounding these places.	<habitat>;<order>|<habitat>;<order>| Where any given element is text with HTML tags	"Edm.String"

Table 12 Available 'multimedia' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
associatedMedia	0–n	The unique identifier for multimedia resources (such as photos and sounds) associated with the profile listed in order of display. The actual resource can be retrieved via the BioNet Multimedia web service.	<identifier>;<identifier>	"Edm.String"

Table 13 Available 'documentation' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
fullReference	0–n	Documentation associated with the profile.	<document key>;<title>;<authors>;<year>;<URI>|<document key>;<title>;<authors>;<year>;<URI>| Where any given element is text with HTML tags	"Edm.String"

Table 14 Available 'fire' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
mechanicalHRDescription	1	Information on any restrictions on the use of mechanical hazard reduction techniques within 100 metres of the occurrence record. Otherwise this field gives the value 'N/A'.	Free text	"Edm.String"
potentialImpact	1	A categorisation of the information recorded in speciesFireDescription into one of 3 broad categories related to the use of fire as hazard reduction techniques.	Controlled vocabulary – see Appendix 1.8. Otherwise this field gives the value 'N/A'.	"Edm.String"
speciesFireDescription	1	Information on any restrictions on the use of controlled burning as a hazard reduction technique within 100 metres of the occurrence record. Otherwise this field gives the value 'N/A'.	Free text	"Edm.String"
fireCodeStatus	1	Indicates if the species is included on the fire code.	Controlled vocabulary – see Appendix 1.9. Otherwise this field gives the value 'N/A.'	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
reasonForExclusion	0–1	Optional comments on why the species was not included on the fire code.	Free text	"Edm.String"

Table 15 Available 'assessment' fields in the ThreatenedBiodiversity_Species entity set

Property name	Occurrence	Definition	Format	Data type
classOfCredit	1	Biodiversity credits are the currency used to assess biodiversity loss and gain in the Biodiversity Assessment Method. Credit class indicates whether the species is assessed for ecosystem credits or species credits. Some species have been split, with species credits applying to some components of their habitat requirements and ecosystem credits applying to the remaining components. For example, cave roosting bats may have species credits applying to breeding habitat and ecosystem credits applying to foraging and shelter habitat. Note: Where classOfCredit does not apply, null is given.	Controlled vocabulary – see Appendix 1.4	"Edm.String"
patchSize	1	The minimum area of vegetated habitat that a	Controlled Vocabulary – see Appendix 1.5	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		species would be expected to occupy or periodically use. Note this applies only to fauna.		
nativeVegetationCover	1	The proportion of native vegetation a species requires in the landscape to occupy or periodically use a site. Note: This field only applies to fauna, N/A is given for flora and fungi	Controlled vocabulary – see Appendix 1.6	"Edm.String"
associatedPCTs	1–n	List of PCTIDs associated with the species.	List of PCTIDs separated by semicolon	"Edm.String"
habitatConstraints	1–n	A habitat constraint is an element of habitat that must be present on a site for the species to occupy or periodically use the site. For example, species dependent on rocky areas will not occupy or use sites without rocks. Additional details on the habitat constraint may be provided in the comments. For example, a habitat constraint of 'rocky areas'	<constraint>;<comment>|<constraint>;<comment>| where • constraint is a controlled vocabulary as per Appendix 1.7 • comment is free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		might be further qualified with a comment ‘within 200 m of a gibber’. Note: Where habitat constraints have been split between foraging and breeding, they are given separately in the habitatConstraintsForaging and habitatConstraintsBreeding fields. In this case a value of N/A is given here.		
habitatConstraintsForaging	1–n	A habitat constraint (foraging) is an element of habitat that must be present on a site for the species to occupy or periodically use the site. For example, species dependent on rocky areas will not occupy or use sites without rocks. Additional details on the habitat constraint may be provided in the comments. For example, a habitat constraint of ‘rocky areas’ might be further qualified	<constraint>;<comment>|<constraint>;<comment>| where • constraint is a controlled vocabulary as per Appendix 1.7 • comment is free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		with a comment ‘within 200 m of gibber’. Note: Where habitat constraints have not been split between foraging and breeding, they are given in the habitatConstraints field. In this case a value of N/A is given here.		
habitatConstraintsBreeding	1–n	A habitat constraint (breeding) is an element of habitat that must be present on a site for the species to breed on the site. For example, hollow breeding species will not breed on sites where tree hollow area absent. Additional details on the habitat constraint may be provided in the comments. For example, a habitat constraint of ‘tree hollow’ might be further qualified with a comment ‘living or dead trees with hollows greater than 20 metres in diameter and 4 metres above ground’.	<constraint>;<comment>|<constraint>;<comment>| where • constraint is a controlled vocabulary as per Appendix 1.7 • comment is free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		Note: Where habitat constraints have not been split between foraging and breeding, they are given in the habitatConstraints field. In this case a value of N/A is given here.		
monthsOfSurvey	1–12	Indicates the optimum months to detect a species using survey. Note: Where the survey months have been split between foraging and breeding, they are given in the monthsOfSurveyForaging and monthsOfSurveyBreeding fields. In this case a value of N/A is given here.	List of months separated by semicolon	"Edm.String"
monthsOfSurveyForaging	1–12	Indicates the optimum months to detect foraging individuals using survey. Note: Where the survey months have not been split between foraging and breeding, they are given in the monthsOfSurvey field.	List of months separated by semicolon	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		In this case a value of N/A is given here.		
monthsOfSurveyBreeding	1–12	Indicates the optimum months to detect breeding individuals using survey. Note: Where the survey months have not been split between foraging and breeding, they are given in the monthsOfSurvey field. In this case a value of N/A is given here.	List of months separated by semicolon	"Edm.String"
surveyComments	0–1	Specific information to assist in the survey for a species, to describe survey effort required or to define the appropriate method for developing a species polygon.	Free text	"Edm.String"
occupyPaddockTrees	1	Indicates if paddock trees are important habitat (e.g. breeding habitat, connectivity) for the species. Note: Most flora will score 'false' for this field. However, this field can be true where paddock trees	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		are important habitat for some epiphytes, or if the species itself can be a paddock tree.		
occupyPaddockTreesComment	0–1	Additional comments to describe the types of, or situations when the paddock trees might be used by the species.	Free text	"Edm.String"
geographicDistribution	1	Identifies the number of known locations of the species in NSW. If present, it is used to determine sensitivity to loss. This field is only populated when: • the number of locations will result in a higher sensitive to loss category than provided by the current listing status • it is supported by quantitative data.	Controlled Vocabulary – see Appendix 1.10	"Edm.String"
populationSize	1	Identifies number of individuals (taken as the total number of known mature individuals) in NSW. If present, it is used to determine the sensitivity to	Controlled Vocabulary – see Appendix 1.11	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		loss. The field is only populated when: • the number of individuals will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.		
rateOfDecline	1	Identifies the rate of decline of the species within NSW. If present it is used to determine the sensitivity to loss. The field is only populated when: • the rate of decline will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.	Controlled Vocabulary – see Appendix 1.12	"Edm.String"
ecologyIsPoorlyKnown	1	Whether the species life history and/or ecology is poorly known and thus renders it difficult to determine effective	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		management actions and/or anticipate the likely response of the species to management applied at an offset site. Species that meet this criterion will generally be those for which there is little to no published literature and any conservation actions would be targeted towards research rather than management. Examples include the green-thighed frog.		
effectivenessOfManagement	1	The ability to control the most difficult to control threat on a stewardship site (i.e. based on the ability of management actions to overcome this threat).	Controlled Vocabulary – see Appendix 1.13	"Edm.String"
effectivenessOfManagementComments	0–1	A brief description of the key threat driving the selection of the value for the effectivnessOfManagement field. Comments should be provided where 'Threats beyond control' or 'Limited	Free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		ability to control threats' have been selected.		
speciesDependOnHabitatAttribute	1	Indicates if a critical component of the species lifecycle is dependent on a feature/s that takes considerable time to respond to management actions at a stewardship site. Non-responding attributes are those that cannot be improved or increased at a stewardship site (e.g. caves). Notes: • This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given. • Where the habitat dependency data have been split between foraging and breeding, they are given in the speciesDependOnHabitatAttributeBreeding and speciesDependOnHabitatAttributeForaging fields. In this case a	Controlled Vocabulary – see Appendix 1.14	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		value of N/A is given here.		
speciesDependOnHabitatAttributeComment	0–1	A brief description of the habitat feature driving the value selected for speciesDependOnHabitatAttribute.	Free text	"Edm.String"
speciesDependOnHabitatAttributeBreeding	1	Indicates if a critical component of the **species breeding-cycle** is dependent on a feature/s that takes considerable time to respond to management actions at a stewardship site. Non-responding attributes are those that cannot be improved or increased at a stewardship site (e.g. caves). Notes: • This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given. • Where the habitat dependency data have not been split between foraging and breeding,	Controlled Vocabulary – see Appendix 1.14	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		they are given in the speciesDependOnHabitatAttribute field. In this case a value of N/A is given here.		
speciesDependOnHabitatAttributeBreedingComments	0–1	A brief description of the habitat feature driving the value selected for speciesDependOnHabitatAttributeBreeding.	Free text	"Edm.String"
speciesDependOnHabitatAttributeForaging	1	Indicates if a critical component of the **species foraging habitat** is dependent on a feature/s that takes considerable time to respond to management actions at a stewardship site. Non-responding attributes are those that cannot be improved or increased at a stewardship site (e.g. caves). Notes: • This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	Controlled Vocabulary – see Appendix 1.14	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		• Where the habitat dependency data have not been split between foraging and breeding, they are given in the speciesDependOnHabitatAttribute field. In this case a value of N/A is given here.		
speciesDependOnHabitatAttributeForagingComments	0–1	A brief description of the habitat feature driving the value selected for speciesDependOnHabitatAttributeForaging.	Free text	"Edm.String"
dependOnNonRespondingAttributes	1	The species depends on highly specific habitat requirements that cannot be recreated (e.g. symbiotic relationships required by some plant species to persist).	True or False	"Edm.String"
colonisationAbility	1	An evaluation of the dispersal ability of a species (taken as passive or active movement, usually one way, from the point of origin, to another location where the individual will reproduce) with a view to	Categories differ between fauna and flora. For **fauna** the following controlled vocabulary is used: • disperse < 100 m and/or specific dispersal corridor or vector requirements	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		estimating its ability to recolonise stewardship sites in landscapes likely to have been subject to clearing.	• disperse between 100m and 10km • disperse > 10 km. For **flora** the following controlled vocabulary is used: • disperse near the adult plant • disperse beyond the adult plant but within the population • wide dispersal – outside the population	
ageFemalesFirstProduce	1	The average age at which females are first able to produce offspring. Note: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	Controlled Vocabulary – see Appendix 1.16	"Edm.String"
averageNumberOfOffspring	1	The average number of offspring produced annually per adult female. Note: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	Controlled Vocabulary – see Appendix 1.16	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
reproductiveStrategy	1	The recruitment strategy used by the species. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.17	"Edm.String"
lifespan	1	The average lifespan of the species. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.18	"Edm.String"
ageAtFirstFlowering	1	The average age at which the first significant flowering event occurs. Estimated from the time at which the species can be expected to start producing quantities of seed that are likely to be sufficient to enable recruitment to occur under suitable conditions. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.19	"Edm.String"
seedProduction	1	The estimated average quantity of seed produced	Controlled Vocabulary – see Appendix 1.20	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		per year per mature individual in a population. Note: This field does not apply to fauna; where the species is an animal N/A is given.		
seedbank	1	The ability of seed to persist in the seedbank. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.21	"Edm.String"
isPredator	1	Indicates if the majority of the species diet is vertebrate prey. Note: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	True or False	"Edm.String"
unitOfMeasure	1	The unit by which the carrying capacity of a site for a species is measured. Estimates are used in credit calculations.	Area or Count	"Edm.String"
sensitivityToLoss	1	An assessment of the vulnerability of the species to the Biodiversity Offsets Scheme. Considers the	Controlled Vocabulary – see Appendix 1.22	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		impacts on the species that will likely lead to, or increase the risk of, extinction should a population be lost through development impacts and the increased extinction risk posed to a species during the time lag between the loss of habitat at that site and the realisation of ecological improvement in habitat condition at a stewardship site. The sensitivity to loss class is taken from either: the threatened status of the species from relevant legislation quantitative assessment against extinction risk criteria (see Population Size, Geographic Distribution and Rate of Decline criteria) leading to a higher sensitivity to loss class than provided by point 1 above.		

Property name	Occurrence	Definition	Format	Data type
sensitivityToLossJustification	0–1	Provides the justification for the category of sensitivityToLoss assigned to the species.	Free text	"Edm.String"
sensitivityToPotentialGain	1	An estimate of the species ability to respond to improvements in habitat condition through active management actions applied at a specific site. A series of quantitative and qualitative criteria relating to life history characteristics, threat management and knowledge of the species are used to allocate species to a sensitivity to potential gain class. Note: Where the sensitivity to gain has been split between the foraging and breeding activities of an animal, they are given separately in the sensitivityToPotentialGainForgaing and sensitivityToPotentialGainB	Controlled Vocabulary – see Appendix 1.23	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		reeding fields. In this case a value of N/A is given here.		
sensitivityToPotentialGainJustification	0–1	Provides the justification for the category of senstivityToPotentialGain assigned to the species.	Free text	"Edm.String"
sensitivityToPotentialGainForaging	1	An estimate of the species ability to respond to improvements in habitat condition, where that habitat is used for foraging, through active management actions applied at a specific site. A series of quantitative and qualitative criteria relating to life history characteristics, threat management and knowledge of the species are used to allocate species to a sensitivity to potential gain class. Note: Where the sensitivity to gain has not been split between the foraging and breeding activities of an animal, it is given in the sensitivityToPotentialGain	Controlled Vocabulary – see Appendix 1.23	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		field. In this case a value of N/A is given here.		
sensitivityToPotentialGainForagingJustification	0–1	Provides the justification for the category of senstivityToPotentialGainForagning assigned to the species.	Free text	"Edm.String"
sensitivityToPotentialGainBreeding	1	An estimate of the species ability to respond to improvements in habitat condition, where that habitat is used for breeding, through active management actions applied at a specific site. A series of quantitative and qualitative criteria relating to life history characteristics, threat management and knowledge of the species are used to allocate species to a sensitivity to potential gain class. Note: Where the sensitivity to gain has not been split between the foraging and breeding activities of an animal, it is given in the	Controlled Vocabulary – see Appendix 1.23	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		sensitivityToPotentialGain field. In this case a value of N/A is given here.		
sensitivityToPotentialGainBreedingJustification	0–1	Provides the justification for the category of senstivityToPotentialGainBreeding assigned to the species.	Free text	"Edm.String"
levelOfBiodiversityConcern	1	The level of biodiversity concern is an overall evaluation of the risks involved in impacting on and offsetting habitat for a species, considering both the sensitivity to loss and sensitivity to potential gain. Note: where the level of biodiversity concern has been split between the foraging and breeding activities of an animal, they are given in the levelOfBiodiversityConcern Foraging and levelOfBiodiversityConcern Breeding fields. In this case a value of N/A is given here.	Controlled Vocabulary – see Appendix 1.24	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
levelOfBiodiversityConcern Foraging	1	The level of biodiversity concern is an overall evaluation of the risks involved in impacting on and offsetting foraging habitat for a species, considering both the sensitivity to loss and sensitivity to potential gain. Note: Where the level of biodiversity concern has not been split between the foraging and breeding activities of an animal, it is given in the levelOfBiodiversityConcern field. In this case a value of N/A is given here.	Controlled Vocabulary – see Appendix 1.24	"Edm.String"
levelOfBiodiversityConcern Breeding	1	The level of biodiversity concern is an overall evaluation of the risks involved in impacting on and offsetting breeding habitat for a species, considering both the sensitivity to loss and sensitivity to potential gain. Note: Where the level of biodiversity concern has not	Controlled Vocabulary – see Appendix 1.24	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		been split between the foraging and breeding activities of an animal, it is given in the levelOfBiodiversityConcern field. In this case a value of N/A is given here.		
SAII	1	Identifies species that, if impacted by development, are likely to trigger a 'Serious or Irreversible Impact' (SAII). These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or irreversible impact* published by NSW Department of Climate Change, Energy, the Environment and Water. Note: where the SAII flag has been split between the breeding and foraging habitats of an animal, it is given in the SAIIFlagBreeding and SAIIFlagForaging fields. In	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		this case a value of N/A is given here.		
SAIIBreeding	1	Identifies species breeding habitat that, if impacted by development, are likely to trigger a Serious or Irreversible Impact (SAII). These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or irreversible impact* published by NSW Department of Climate Change, Energy, the Environment and Water. Note: Where the SAII flag has not been split between the breeding and foraging habitats of an animal, it is given in the SAII field. In this case a value of N/A is given here.	True or False	"Edm.String"
SAIIForaging	1	Identifies species foraging habitat that, if impacted by development, are likely to trigger a Serious or	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		Irreversible Impact (SAII). These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or irreversible impact* published by NSW Department of Climate Change, Energy, the Environment and Water. Note: Where the SAII flag has not been split between the breeding and foraging habitats of an animal, it is given in the SAII field. In this case a value of N/A is given here.		
generalNotes	0–1	Additional information about the species including references.	Free text	"Edm.String"
offsetMultiplier	0–1	The biodiversity risk weighting is based on the level of biodiversity concern and is used to calculate biodiversity credits from the impacts of development.	Numeric with 2 decimal places	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		Notes: Where the biodiversity risk weighting has been split between the breeding and foraging habitats of an animal, it is given in the offsetMultiplierBreeding and offsetMultiplierForaging fields. In this case a value of N/A is given here. For ecosystem species, Biodiversity risk weighting will not be populated. This is because it is calculated based on site context and assessment.		
offsetMultiplierForaging	1	The biodiversity risk weighting is based on the level of biodiversity concern and is used to calculate species credits generated from the impacts of development on a species foraging habitat. Note: Where the biodiversity risk weighting has not been split between the breeding and foraging	Numeric with 2 decimal places	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		habitats of an animal, it is given in the offsetMultiplier field. In this case a value of N/A is given here.		
offsetMultiplierBreeding	1	The biodiversity risk weighting is based on the level of biodiversity concern and is used to calculate species credits generated from the impacts of development on a species breeding habitat. Note: Where the biodiversity risk weighting has not been split between the breeding and foraging habitats of an animal, it is given in the offsetMultiplier field. In this case a value of N/A is given here.	Numeric with 2 decimal places	"Edm.String"

4. Specifications for the ThreatenedBiodiversity_TSGeographicData entity set

Tables 16 to 18 provide the specifications of the data fields available in each category of the ThreatenedBiodiversity_ TSGeographicData entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Unlike the ThreatenedBiodiversity_Species entity set, where there is only one row per profileID, there are multiple rows per profileID in the geographic data. However, for any given profileID, there will only be one unique row per profileID and IBRASubregion combination. This enables the specific occurrence of any given species in an IBRASubregion to be conveyed.

Table 16 Available 'metadata' fields in the ThreatenedBiodiversity_TSGeographicData entity set

Property name	Occurrence	Description	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, coden or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Threatened Species	"Edm.String"

Property name	Occurrence	Description	Format	Data type
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how this record should be cited (attributed) when used. Note: the date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data (AtlasDB).	BioNet TS Geographic Data DD/MM/YYYY HH:MM AM/PM +HH:MM offset from UTC	"Edm.String"
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"Edm.String"
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"
dcterms_rights	1	Information about rights held in and over the resource. Typically, rights information includes a statement about various property rights associated with the	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		resource, including intellectual property rights.		
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: 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: dataset	"Edm.String"

Table 17 Available 'profile details' fields in the ThreatenedBiodiversity_TSGeographicData entity set

Property name	Occurrence	Description	Format	Data type
profileID	1	The unique identifier for the threatened species profile as stored in the Threatened Species Profile Data Collection. Provides a linking key to ThreatenedBiodiversity_Species.	Integer	"Edm.Int32" Nullable="false"
scientificName	1	The full scientific name of the species.	<genus> <specific epithet> <connecting term> <infraspecifc epithet>; where the connecting term can be one of the following: subsp. = subspecies	"Edm.String"

Property name	Occurrence	Description	Format	Data type
			var. = variety	
vernacularName	1	The common name of the species.	Text	"Edm.String"
stateConservation	1	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* (BC Act 2016) or the *Fisheries Management Act 1994* no. 38 (FM Act 1994).	Controlled Vocabulary – see Appendix 1.1	"Edm.String"
countryConservation	1	The legal status of the species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Controlled Vocabulary – see Appendix 1.2	"Edm.String"
kingdom	1	The full scientific name of the kingdom in which the taxon is classified.	One item from the following controlled vocabulary: • Animalia • Plantae • Fungi	"Edm.String"
family	1	The full scientific name of the family in which the taxon is classified.	Text	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable	Controlled vocabulary – see Appendix 1.3	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		software developers to filter records based on communities of interest.		
dateOfFinalGazettal	1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"

Table 18 Available 'geographic' fields in the ThreatenedBiodiversity_TSGeographicData entity set

Property name	Occurrence	Description	Format	Data type
IBRASubregion	1	The name of the IBRA7 subregion. Refer to Australia's bioregions (IBRA) – The National Reserve –System (NRS) for more information on the IBRA framework. Note: Where a subregion occurs outside of NSW then the subregion name is not given, just the name of the state (e.g. QLD).	Controlled vocabulary using IBRA Version 7 subregion names.	"Edm.String"
IBRASubregionID	1	The unique ID associated with the IBRA subregion.	Alphanumeric code	"Edm.String" Nullable="false"
occurrence	1	If the threatened entity is known or predicted to occur within the IBRA subregion.	One item from the following controlled vocabulary: Known Predicted	"Edm.String"

Property name	Occurrence	Description	Format	Data type
geographicalConstraints	0–1	Describes any special conditions for distribution of the species in the IBRA subregion.	Free text	"Edm.String"

5. Specifications for the ThreatenedBiodiversity_EcologicalCommunities entity set

Tables 19 to 26 provide the specifications of the data fields available in each category of the ThreatenedBiodiversity_EcologicalCommunities entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Table 19 Available 'metadata' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, CODEN or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Threatened Ecological Communities	"Edm.String"
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how	BioNet Threatened Ecological Communities DD/MM/YYYY HH:MM	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		this record should be cited (attributed) when used. Note: The date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data (AtlasDB).	AM/PM +HH:MM offset from UTC	
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"Edm.String"
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"
dcterms_rights	1	Information about rights held in and over the resource. Typically, rights information includes a statement about various property rights associated	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		with the resource, including intellectual property rights.		
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: 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: dataset	"Edm.String"

Table 20 Available 'profile details' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
profileID	1	The unique identifier for the threatened ecological community profile as stored in the Threatened Species Profile Data Collection. Provides a linking key to ThreatenedBiodiversity_TECGeographicData.	Integer	"Edm.Int32" Nullable="false"
TECName	1	The full name of the community.	Free text	"Edm.String"
displayNameHTML	1	The name of the community including HTML tags for	Text with HTML tags	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		rendering in HTML applications.		
stateConservation	1	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* (BC Act 2016) or the *Fisheries Management Act 1994* no. 38 (FM Act 1994).	Controlled Vocabulary – see Appendix 1.1	"Edm.String"
countryConservation	1	The legal status of the species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Controlled Vocabulary – see Appendix 1.2	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest. Note: For the Threatened Ecological Communities dataset this field will only return 'Threatened Ecological Communities'	Controlled vocabulary – see Appendix 1.3	"Edm.String"
dateOfFinalGazettal	1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"

Property name	Occurrence	Description	Format	Data type
description	0–1	Description of the community.	Text with HTML tags	"Edm.String"
distribution	0–1	Description of where the community occurs.	Text with HTML tags	"Edm.String"
profileStatus	1	Indicates if all the attributes for the entity have been evaluated and populated in the system.	One item from the following controlled vocabulary: • Complete • Incomplete	"Edm.String"

Table 21 Available 'threats' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
threats	1–n	Describes the kind of activities that would harm the sustenance of the species.	<Threat Category 1>;<Threat Category 2>;<Threat>|<Threat Category 1>;<Threat Category 2>;<Threat>	"Edm.String"

Table 22 Available 'habitat and ecology' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
habitatAndEcology	1–n	Describes the places where the species is likely to occur or grow and the ecological environment surrounding these places.	<habitat>;<order>|<habitat>;<order>|	"Edm.String"

Table 23 Available 'multimedia' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
associatedMedia	0–n	The unique identifier for multimedia resources (such as photos and sounds) associated with the profile listed in order of display. The actual resource can be retrieved via the BioNet Multimedia web service.	<identifier>;<identifier>	"Edm.String"

Table 24 Available 'documentation' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
fullReference	1–n	Documentation associated with the profile.	<document key>;<title>;<authors>;<year>;<URI>|<document key>;<title>;<authors>;<year>;<URI>. Where any given element is text with HTML tags	"Edm.String"

Table 25 Available 'fire' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description and format	Format	Data type
mechanicalHRDescription	1	Information on any restrictions on the use of mechanical hazard reduction techniques within	Free text	"Edm.String"

Property name	Occurrence	Description and format	Format	Data type
		100 metres of the occurrence record. Otherwise, this field gives the value ‘N/A’.		
potentialImpact	1	A categorisation of the information recorded in speciesFireDescription into one of 3 broad categories related to the use of fire as hazard reduction techniques.	Controlled vocabulary – see Appendix 1.8; otherwise this field gives the value ‘N/A’	"Edm.String"
speciesFireDescription	0–1	Information on any restrictions on the use of controlled burning as a hazard reduction technique within 100 metres of the occurrence record.	Free text	"Edm.String"
fireCodeStatus	1	Indicates if the ecological community is included on the fire code.	Controlled vocabulary – see Appendix 1.9; otherwise this field gives the value ‘N/A’	"Edm.String"
reasonForExclusion	0–1	Optional comments on why the community was not included on the fire code.	Free text	"Edm.String"

Table 26 Available 'assessment' fields in the ThreatenedBiodiversity_EcologicalCommunities entity set

Property name	Occurrence	Description	Format	Data type
classOfCredit	1	Biodiversity credits are the currency used to assess biodiversity loss and gain in the Biodiversity Assessment Method. Credit class indicates whether the species is assessed for ecosystem credits or species credits. Some species have been split, with species credits applying to some components of their habitat requirements and ecosystem credits applying to the remaining components. For example, cave roosting bats may have species credits applying to breeding habitat and ecosystem credits applying to foraging and shelter habitat. Note: where classOfCredit does not apply, null is given.	Controlled vocabulary – see Appendix 1.4	"Edm.String"
associatedPCTs	0–n	List of PCTIDs associated with the species.	List of PCTIDs separated by semicolon	"Edm.String"

Property name	Occurrence	Description	Format	Data type
geographicDistribution	1	Identifies continuing decline of the ecological communities are of occupancy or extent of occurrence in NSW. If present, it is used to determine the sensitivity to loss. The field is generally (but not always) populated when: • the declines will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.	Controlled Vocabulary – see Appendix 1.10	"Edm.String"
populationSize	1	Identifies ecological communities that are considered to have a very large degree of environmental degradation or disruption of biotic process or interactions in NSW. If present, it is used to determine the sensitivity to loss. The field is	Controlled Vocabulary – see Appendix 1.11	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		generally (but not always) populated when: • the extent and severity will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.		
rateOfDecline	1	Identifies the rate of decline as a reduction in distribution within NSW. If present it is used to determine the sensitivity to loss. The field is generally (but not always) populated when: • the reduction in distribution will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.	Controlled Vocabulary – see Appendix 1.12	"Edm.String"
sensitivityToLoss	1	An assessment of the vulnerability of the ecological community to	Controlled Vocabulary – see Appendix 1.22	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		the Biodiversity Offsets Scheme. Considers the impacts on the ecological community that will likely lead to, or increase the risk of, extinction should an area be lost through development impacts and the increased extinction risk posed to an ecological community during the time lag between the loss of area at that site and the realisation of ecological improvement in condition at a stewardship site. The sensitivity to loss class is taken from either: • the threatened status of the ecological community from relevant legislation • quantitative assessment against extinction risk criteria leading to a higher sensitivity to loss class than provided by point 1 above.		

Property name	Occurrence	Description	Format	Data type
sensitivityToLossJustification	1	Provides the justification for the category of senstivityToLoss assigned to the ecological community.	Free text	"Edm.String"
SAII	1	Identifies species that, if impacted by development, are likely to trigger a Serious or Irreversible Impact (SAII). These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or irreversible impact* published by NSW Department of Climate Change, Energy, the Environment and Water.	True or False	"Edm.String"
generalNotes	1	Additional information about the species including references.	Free text	"Edm.String"

6. Specifications for the ThreatenedBiodiversity_TECGeographicData entity set

Tables 27 to 29 provide the specifications of the data fields available in each category of the ThreatenedBiodiversity_TECGeographicData entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Unlike the ThreatenedBiodiversity_EcologicalCommunity entity set, where there is only one row per profileID, there are multiple rows per profileID in the geographic data. However, for any given profileID, there will only be one unique row per profileID and IBRASubregion combination. This enables the specific occurrence of any given ecological community in an IBRA subregion to be conveyed.

Table 27 Available 'metadata' fields in the ThreatenedBiodiversity_TECGeographicData entity set

Property name	Occurrence	Definition	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, CODEN or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Threatened Ecological Communities	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how this record should be cited (attributed) when used. Note: the date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data.	BioNet TEC Geographic Data DD/MM/YYYY HH:MM AM/PM +HH:MM offset from UTC	"Edm.String"
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"Edm.String"
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"
dcterms_rights	1	Information about rights held in and over the resource. Typically, rights information includes a	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		statement about various property rights associated with the resource, including intellectual property rights.		
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: 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: dataset	"Edm.String"

Table 28 Available 'metadata' fields in the ThreatenedBiodiversity_TECGeographicData entity set

Property name	Occurrence	Definition	Format	Data type
profileID	1	The unique identifier for the threatened ecological community profile as stored in the Threatened Species Profile Data Collection. Provides a linking key to ThreatenedBiodiversity_EcologicalCommunities.	Integer	"Edm.Int32" Nullable="false"
TECName	1	The name of the threatened ecological community.	Text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
stateConservation	1	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* (BC Act 2016) or the *Fisheries Management Act 1994* no. 38 (FM Act 1994).	Controlled Vocabulary – see Appendix 1.1	"Edm.String"
countryConservation	1	The legal status of the species under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Controlled Vocabulary – see Appendix 1.2	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest.	Controlled vocabulary – see Appendix 1.3	"Edm.String"
dateOfFinalGazettal	0-1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"

Table 29 Available 'geographic' fields in the ThreatenedBiodiversity_TECGeographicData entity set

Property name	Occurrence	Definition	Format	Data type
IBRASubregion	1	The name of the IBRA7 subregion. Refer to Australia's bioregions (IBRA) for more information on the IBRA framework.	Controlled vocabulary using IBRA Version 7 subregion names. Where a subregion occurs outside of NSW then the subregion	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
			name is not given, just the name of the state (e.g. QLD)	
IBRASubregionID	1	The unique ID associated with the IBRA subregion.	Alphanumeric code	"Edm.String" Nullable="false"
occurrence	1	If the threatened entity is known or predicted to occur within the IBRA subregion.	One item from the following controlled vocabulary: Known Predicted	"Edm.String"
geographicalConstraints	0–1	Describes any special conditions for distribution of the species in the IBRA subregion (e.g. within 100 metres of river bank). Entered via Mapping tool, it is visible only in TS Web App. Defined at IBRA subregion level for each profile.	Text	"Edm.String"

7. Specifications for the ThreatenedBiodiversity_Populations entity set

Tables 30 to 37 provide the exact specifications of the data fields available in each category of the ThreatenedBiodiversity_Populations entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Table 30 Available 'metadata' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, CODEN or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Threatened Populations	"Edm.String"
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how	BioNet Threatened Populations DD/MM/YYYY	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		this record should be cited (attributed) when used. Note: The date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data (AtlasDB).	HH:MM AM/PM +HH:MM offset from UTC	
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"Edm.String"
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"
dcterms_rights	1	Information about rights held in and over the resource. Typically, rights information includes a statement about various property rights associated	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		with the resource, including intellectual property rights.		
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: 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: dataset	"Edm.String"

Table 31 Available 'profile details' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
profileID	1	The unique identifier for the threatened species profile as stored in the Threatened Biodiversity Data Collection. Provides a linking key to ThreatenedBiodiversity_TP GeographicData.	Integer	"Edm.Int32" Nullable="false"
scientificName	1	The full scientific name of the species.	<genus> <specific epithet> <connecting term> <infraspecifc epithet>; where the connecting term can be one of the following:	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
			subsp. = subspecies var. = variety	
vernacularName	0–1	The common name or vernacular name of the species (if any).	Text	"Edm.String"
populationName	1	The name of the endangered population as listed under the *Biodiversity Conservation Act 2016* (BC Act 2016).	Free text	"Edm.String"
displayNameHTML	1	The name of the species including HTML tags for rendering in HTML applications.	Text with HTML tags	"Edm.String"
stateConservation	1	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* (BC Act 2016) or the *Fisheries Management Act 1994* no. 38 (FM Act 1994).	Controlled Vocabulary – see Appendix 1.1	"Edm.String"
countryConservation	1	The legal status of the species under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Controlled Vocabulary – see Appendix 1.2	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
kingdom	1	The full scientific name of the kingdom in which the taxon is classified.	One item from the following controlled vocabulary: Animalia Plantae Fungi	"Edm.String"
family	1	The full scientific name of the family in which the taxon is classified.	Text	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest.	Controlled vocabulary – see Appendix 1.3	"Edm.String"
dateOfFinalGazettal	1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"
description	1	Description of the species.	Text with HTML tags	"Edm.String"
distribution	1	Description of where the species occurs.	Text with HTML tags	"Edm.String"
profileStatus	1	Indicates if all the attributes for the entity have been evaluated and populated in the system.	One item from the following controlled vocabulary: Complete Incomplete	"Edm.String"

Table 32 Available 'threats' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
threats	0-n	Describes the kind of activities which would harm the sustenance of the species.	<Threat Category 1>;<Threat Category 2>;<Threat>|<Threat Category 1>;<Threat Category 2>;<Threat>	"Edm.String"

Table 33 Available 'habitat and ecology' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
habitatAndEcology	0–n	Describes the places where the species is likely to occur or grow and the ecological environment surrounding these places.	<habitat>;<order>|<habitat>;<order>|, where any given element is text with HTML tags	"Edm.String"

Table 34 Available 'multimedia' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
associatedMedia	0–n	The unique identifier for multimedia resources (such as photos and sounds) associated with the profile listed in order of display. The actual resource can be retrieved via the BioNet Multimedia web service.	<identifier>;<identifier>	"Edm.String"

Table 35 Available 'documentation' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
fullReference	0–n	Documentation associated with the profile.	<document key>;<title>;<authors>;<year>;<URI>|<document key>;<title>;<authors>;<year>;<URI>| where any given element is text with HTML tags	"Edm.String"

Table 36 Available 'fire' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
mechanicalHRDescription	1	Information on any restrictions on the use of mechanical hazard reduction techniques within 100 metres of the occurrence record. Otherwise this field gives the value 'N/A'.	Free text	"Edm.String"
potentialImpact	1	A categorisation of the information recorded in speciesFireDescription into one of 3 broad categories related to the use of fire as hazard reduction techniques.	Controlled vocabulary – see Appendix 1.8. Otherwise this field gives the value 'N/A'	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
speciesFireDescription	1	Information on any restrictions on the use of controlled burning as a hazard reduction technique within 100 metres of the occurrence record. Otherwise this field gives the value 'N/A'.	Free text	"Edm.String"
fireCodeStatus	1	Indicates if the population is included on the fire code.	Controlled vocabulary – see Appendix 1.9. Otherwise this field gives the value 'N/A'	"Edm.String"
reasonForExclusion	0–1	Optional comments on why the population was not included on the fire code.	Free text	"Edm.String"

Table 37 Available 'assessment' fields in the ThreatenedBiodiversity_Populations entity set

Property name	Occurrence	Definition	Format	Data type
classOfCredit	1	Biodiversity credits are the currency used to assess biodiversity loss and gain in the Biodiversity Assessment Method. Credit class indicates whether the species is assessed for ecosystem credits or species credits. Some	Controlled vocabulary – see Appendix 1.4	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		species have been split, with species credits applying to some components of their habitat requirements and ecosystem credits applying to the remaining components. For example, cave roosting bats may have species credits applying to breeding habitat and ecosystem credits applying to foraging and shelter habitat. Note: Where classOfCredit does not apply, null is given.		
patchSize	1	The minimum area of vegetated habitat that a species would be expected to occupy or periodically use. Note this applies only to fauna.	Controlled Vocabulary – see Appendix 1.5	"Edm.String"
nativeVegetationCover	1	The proportion of native vegetation a species requires in the landscape to occupy or periodically use a site.	Controlled vocabulary – see Appendix 1.6	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		Note: this field only applies to fauna, N/A is given for flora and fungi.		
associatedPCTs	1–n	List of PCTIDs associated with the species.	List of PCTIDs separated by semicolon	"Edm.String"
habitatConstraints	1–n	A habitat constraint is an element of habitat that must be present on a site for the species to occupy or periodically use the site. For example, species dependent on rocky areas will not occupy or use sites without rocks. Additional details on the habitat constraint may be provided in the 'comments' field. For example, a habitat constraint of 'rocky areas' might be further qualified with a comment 'within 200 m of a gibber'. Note: where habitat constraints have been split between foraging and breeding, they are given separately in the habitatConstraintsForaging and	<constraint>;<comment>|<constraint>;<comment>|, where constraint is a controlled vocabulary as per Appendix 1.7 comment is free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		habitatConstraintsBreeding fields. In this case a value of N/A is given here.		
habitatConstraintsForaging	1–n	A habitat constraint (foraging) is an element of habitat that must be present on a site for the species to occupy or periodically use the site. For example, species dependent on rocky areas will not occupy or use sites without rocks. Additional details on the habitat constraint may be provided in the 'comments' field. For example, a habitat constraint of 'rocky areas' might be further qualified with a comment 'within 200 m of gibber'. Note: Where habitat constraints have not been split between foraging and breeding, they are given in the habitatConstraints field. In this case a value of N/A is given here.	<constraint>;<comment>|<constraint>;<comment>|, where constraint is a controlled vocabulary as per Appendix 1.7 comment is free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
habitatConstraintsBreeding	1–n	A habitat constraint (breeding) is an element of habitat that must be present on a site for the species to breed on the site. For example, hollow breeding species will not breed on sites where tree hollow area absent. Additional details on the habitat constraint may be provided in the 'comments' field. For example, a habitat constraint of 'tree hollow' might be further qualified with a comment 'living or dead trees with hollows greater than 20 cm in diameter and 4 metres above ground'. Note: where habitat constraints have not been split between foraging and breeding, they are given in the habitatConstraints field. In this case a value of N/A is given here.	<constraint>;<comment>|<constraint>;<comment>|, where constraint is a controlled vocabulary as per Appendix 1.7 comment is free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
monthsOfSurvey	1–12	Indicates the optimum months to detect a species using survey. Note: Where the survey months have been split between foraging and breeding, they are given in the monthsOfSurveyForaging and monthsOfSurveyBreeding fields. In this case a value of N/A is given here.	List of months separated by semicolon	"Edm.String"
monthsOfSurveyForaging	1–12	Indicates the optimum months to detect foraging individuals using survey. Note: where the survey months have not been split between foraging and breeding, they are given in the monthsOfSurvey field. In this case a value of N/A is given here.	List of months separated by semicolon	"Edm.String"
monthsOfSurveyBreeding	1–12	Indicates the optimum months to detect breeding individuals using survey. Note: Where the survey months have not been split	List of months separated by semicolon	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		between foraging and breeding, they are given in the monthsOfSurvey field. In this case a value of N/A is given here.		
surveyComments	0–1	Specific information to assist in the survey for a species, to describe survey effort required or to define the appropriate method for developing a species polygon.	Free text	"Edm.String"
occupyPaddockTrees	1	Indicates if paddock trees are important habitat (e.g. breeding habitat, connectivity) for the species.	True or False. Note: Most flora will score 'false' for this field. However, this field can be true where paddock trees are important habitat for some epiphytes, or if the species itself can be a paddock tree.	"Edm.String"
occupyPaddockTreesComment	0–1	Additional comments to describe the types of, or situations when the paddock trees might be used by the species.	Free text	"Edm.String"
geographicDistribution	1	Identifies the number of known locations of the	Controlled Vocabulary – see Appendix 1.10	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		species in NSW. If present, it is used to determine sensitivity to loss. This field is only populated when: • the number of locations will result in a higher sensitive to loss category than provided by the current listing status • it is supported by quantitative data.		
populationSize	1	Identifies number of individuals (taken as the total number of known mature individuals) in NSW. If present, it is used to determine the sensitivity to loss. The field is only populated when: • the number of individuals will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.	Controlled Vocabulary – see Appendix 1.11	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
rateOfDecline	1	Identifies the rate of decline of the species within NSW. If present it is used to determine the sensitivity to loss. The field is only populated when: • the rates of decline will result in a higher sensitivity to loss category than provided by the current listing status • it is supported by quantitative data.	Controlled Vocabulary – see Appendix 1.12	"Edm.String"
ecologyIsPoorlyKnown	1	Whether the species life history and/or ecology is poorly known and thus renders it difficult to determine effective management actions and/or anticipate the likely response of the species to management applied at an offset site. Species that meet this criterion will generally be those for which there is little to no published literature and any conservation actions	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		would be targeted towards research rather than management. Examples include the green-thighed frog.		
effectivenessOfManagement	1	The ability to control the most difficult to control threat on a stewardship site (i.e. based on the ability of management actions to overcome this threat).	Controlled Vocabulary – see Appendix 1.13	"Edm.String"
effectivenessOfManagementComments	0–1	A brief description of the key threat driving the selection of the value for the effectivnessOfManagement field. Comments should be provided where 'Threats beyond control' or 'Limited ability to control threats' have been selected.	Free text	"Edm.String"
speciesDependOnHabitatAttribute	1	Indicates if a critical component of the species lifecycle is dependent on a feature/s that takes considerable time to respond to management actions at a stewardship site. Non-responding	Controlled Vocabulary – see Appendix 1.14	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		attributes are those that cannot be improved or increased at a stewardship site (e.g. caves). Notes: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given. Where the habitat dependency data have been split between foraging and breeding, they are given in the speciesDependOnHabitatAttributeBreeding and speciesDependOnHabitatAttributeForaging fields. In this case a value of N/A is given here.		
speciesDependOnHabitatAttributeComment	0–1	A brief description of the habitat feature driving the value selected for speciesDependOnHabiatAttribute.	Free text	"Edm.String"
speciesDependOnHabitatAttributeBreeding	1	Indicates if a critical component of the species breeding-cycle is dependent on a feature/s that takes considerable	Controlled Vocabulary – see Appendix 1.14	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		time to respond to management actions at a stewardship site. Non-responding attributes are those that cannot be improved or increased at a stewardship site (e.g. caves). Notes: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given. Where the habitat dependency data have not been split between foraging and breeding, they are given in the speciesDependOnHabitatAttribute field. In this case a value of N/A is given here.		
speciesDependOnHabitatAttributeBreedingComments	0–1	A brief description of the habitat feature driving the value selected for speciesDependOnHabitatAttributeBreeding.	Free text	"Edm.String"
speciesDependOnHabitatAttributeForaging	1	Indicates if a critical component of the species foraging habitat is	Controlled Vocabulary – see Appendix 1.14	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		dependent on a feature/s that takes considerable time to respond to management actions at a stewardship site. Non-responding attributes are those that cannot be improved or increased at a stewardship site (e.g. caves). Notes: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given. Where the habitat dependency data have not been split between foraging and breeding, they are given in the speciesDependOnHabitatAttribute field. In this case a value of N/A is given here.		
speciesDependOnHabitatAttributeForagingComments	0–1	A brief description of the habitat feature driving the value selected for speciesDependOnHabitatAttributeForaging.	Free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
speciesDependentOnNonRespondingAttributes	1	The species depends on highly specific habitat requirements that cannot be recreated (e.g. symbiotic relationships required by some plant species to persist). Note: This field does not apply to fauna; where the species is an animal N/A is given.	True or False	"Edm.String"
colonisationAbility	1	An evaluation of the dispersal ability of a species (taken as passive or active movement, usually one way, from the point of origin, to another location where the individual will reproduce) with a view to estimating its ability to recolonise stewardship sites in landscapes likely to have been subject to clearing.	Categories differ between fauna and flora. For fauna the following controlled vocabulary is used: Disperse < 100 m and/or specific dispersal corridor or vector requirements Disperse between 100 m and 10 km Disperse > 10 km For flora the following controlled vocabulary is used: • Disperse near the adult plant	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
			• Disperse beyond the adult plant but within the population • Wide dispersal – outside the population	
ageFemalesFirstProduce	1	The average age at which females are first able to produce offspring. Note: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	Controlled Vocabulary – see Appendix 1.16	"Edm.String"
averageNumberOfOffspring	1	The average number of offspring produced annually per adult female. Note: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	Controlled Vocabulary – see Appendix 1.16	"Edm.String"
reproductiveStrategy	1	The recruitment strategy used by the species. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.17	"Edm.String"
lifespan	1	The average lifespan of the species.	Controlled Vocabulary – see Appendix 1.18	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		Note: This field does not apply to fauna; where the species is an animal N/A is given.		
ageAtFirstFlowering	1	The average age at which the first significant flowering event occurs. Estimated from the time at which the species can be expected to start producing quantities of seed that are likely to be sufficient to enable recruitment to occur under suitable conditions. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.19	"Edm.String"
seedProduction	1	The estimated average quantity of seed produced per year per mature individual in a population. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.20	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
seedbank	1	The ability of seed to persist in the seedbank. Note: This field does not apply to fauna; where the species is an animal N/A is given.	Controlled Vocabulary – see Appendix 1.21	"Edm.String"
isPredator	1	Indicates if most of the species diet is vertebrate prey. Note: This field does not apply to flora or fungi; where the species is a plant or fungi N/A is given.	True or False	"Edm.String"
unitOfMeasure	1	The unit by which the carrying capacity of a site for a species is measured. Estimates are used in credit calculations.	Area or Count	"Edm.String"
sensitivityToLoss	1	An assessment of the vulnerability of the species to the Biodiversity Offsets Scheme. Considers the impacts on the species that will likely lead to, or increase the risk of, extinction should a population be lost through development impacts and	Controlled Vocabulary – see Appendix 1.22	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		the increased extinction risk posed to a species during the time lag between the loss of habitat at that site and the realisation of ecological improvement in habitat condition at a stewardship site. The sensitivity to loss class is taken from either: • the threatened status of the species from relevant legislation • quantitative assessment against extinction risk criteria (see Population Size, Geographic Distribution and Rate of Decline criteria) leading to a higher sensitivity to loss class than provided by point 1 above.		
sensitivityToLossJustification	0–1	Provides the justification for the category of senstivityToLoss assigned to the species.	Free text	"Edm.String"
sensitivityToPotentialGain	1	An estimate of the species ability to respond to improvements in habitat	Controlled Vocabulary – see Appendix 1.23	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		condition through active management actions applied at a specific site. A series of quantitative and qualitative criteria relating to life history characteristics, threat management and knowledge of the species are used to allocate species to a sensitivity to potential gain class. Note: where the sensitivity to gain has been split between the foraging and breeding activities of an animal, they are given separately in the sensitivityToPotentialGainForagaing and sensitivityToPotentialGainBreeding fields. In this case a value of N/A is given here.		
sensitivityToPotentialGainJustification	0–1	Provides the justification for the category of sensitivityToPotentialGain assigned to the species.	Free text	"Edm.String"
sensitivityToPotentialGainForaging	1	An estimate of the species ability to respond to	Controlled Vocabulary – see Appendix 1.23	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		improvements in habitat condition, where that habitat is used for foraging, through active management actions applied at a specific site. A series of quantitative and qualitative criteria relating to life history characteristics, threat management and knowledge of the species are used to allocate species to a sensitivity to potential gain class. Note: where the sensitivity to gain has not been split between the foraging and breeding activities of an animal, it is given in the sensitivityToPotentialGain field. In this case a value of N/A is given here.		
sensitivityToPotentialGainForagingJustification	0–1	Provides the justification for the category of sensitivityToPotentialGainForaging assigned to the species.	Free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
sensitivityToPotentialGainBreeding	1	An estimate of the species ability to respond to improvements in habitat condition, where that habitat is used for breeding, through active management actions applied at a specific site. A series of quantitative and qualitative criteria relating to life history characteristics, threat management and knowledge of the species are used to allocate species to a sensitivity to potential gain class. Note: where the sensitivity to gain has not been split between the foraging and breeding activities of an animal, it is given in the sensitivityToPotentialGain field. In this case a value of N/A is given here.	Controlled Vocabulary – see Appendix 1.23	"Edm.String"
sensitivityToPotentialGainBreedingJustification	0–1	Provides the justification for the category of sensitivityToPotentialGainB	Free text	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		reeding assigned to the species.		
levelOfBiodiversityConcern	1	The level of biodiversity concern is an overall evaluation of the risks involved in impacting on and offsetting habitat for a species, considering both the sensitivity to loss and sensitivity to potential gain. Note: where the level of biodiversity concern has been split between the foraging and breeding activities of an animal, they are given in the levelOfBiodiversityConcern Foraging and levelOfBiodiversityConcern Breeding fields. In this case a value of N/A is given here.	Controlled Vocabulary – see Appendix 1.24	"Edm.String"
levelOfBiodiversityConcern Foraging	1	The level of biodiversity concern is an overall evaluation of the risks involved in impacting on and offsetting foraging habitat for a species, considering both the	Controlled Vocabulary – see Appendix 1.24	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		sensitivity to loss and sensitivity to potential gain. Note: where the level of biodiversity concern has not been split between the foraging and breeding activities of an animal, it is given in the levelOfBiodiversityConcern field. In this case a value of N/A is given here.		
levelOfBiodiversityConcernBreeding	1	The level of biodiversity concern is an overall evaluation of the risks involved in impacting on and offsetting breeding habitat for a species, considering both the sensitivity to loss and sensitivity to potential gain. Note: where the level of biodiversity concern has not been split between the foraging and breeding activities of an animal, it is given in the levelOfBiodiversityConcern field. In this case a value of N/A is given here.	Controlled Vocabulary – see Appendix 1.24	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
SAII	1	Identifies species that, if impacted by development, are likely to trigger a Serious or Irreversible Impact (SAII). These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or irreversible impact* published by NSW Department of Climate Change, Energy, the Environment and Water. Note: where the SAII flag has been split between the breeding and foraging habitats of an animal, it is given in the SAIIFlagBreeding and SAIIFlagForaging fields. In this case a value of N/A is given here.	True or False	"Edm.String"
SAIIBreeding	1	Identifies species breeding habitat that, if impacted by development, are likely to trigger a Serious or Irreversible Impact (SAII).	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or irreversible impact* published by NSW Department of Climate Change, Energy, the Environment and Water. Note: where the SAII flag has not been split between the breeding and foraging habitats of an animal, it is given in the SAII field. In this case a value of N/A is given here.		
SAIIForaging	1	Identifies species foraging habitat that, if impacted by development, are likely to trigger a Serious or Irreversible Impact (SAII). These species meet one of the 4 principles for determining SAII, as listed in *Guidance and criteria to assist a decision-maker to determine a serious or*	True or False	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		*irreversible impac*t published by NSW Department of Climate Change, Energy, the Environment and Water. Note: where the SAII flag has not been split between the breeding and foraging habitats of an animal, it is given in the SAII field. In this case a value of N/A is given here.		
generalNotes	0–1	Additional information about the species including references.	Free text	"Edm.String"
offsetMultiplier	0–1	The biodiversity risk weighting is based on the level of biodiversity concern and is used to calculate biodiversity credits from the impacts of development. Notes: Where the biodiversity risk weighting has been split between the breeding and foraging habitats of an animal, it is given in the offsetMultiplierBreeding	Numeric with 2 decimal places	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		and offsetMultiplierForaging fields. In this case a value of N/A is given here. For ecosystem species, biodiversity risk weighting will not be populated. This is because it is calculated based on site context and assessment.		
offsetMultiplierForaging	1	The biodiversity risk weighting is based on the level of biodiversity concern and is used to calculate species credits generated from the impacts of development on a species foraging habitat. Note: Where the biodiversity risk weighting has not been split between the breeding and foraging habitats of an animal, it is given in the offsetMultiplier field. In this case a value of N/A is given here.	Numeric with 2 decimal places	"Edm.String"
offsetMultiplierBreeding	1	The biodiversity risk weighting is based on the level of biodiversity	Numeric with 2 decimal places	"Edm.String"

Property name	Occurrence	Definition	Format	Data type
		concern and is used to calculate species credits generated from the impacts of development on a species breeding habitat. Note: where the biodiversity risk weighting has not been split between the breeding and foraging habitats of an animal, it is given in the offsetMultiplier field. In this case a value of N/A is given here.		

8. Specifications for the ThreatenedBiodiversity_TPGeographicData entity set

Tables 38 to 40 provide the specifications of the data fields available in each category of theThreatenedBiodiversity_TPGeographicData entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Unlike the ThreatenedBiodiversity_Populations entity set, where there is only one row per profileID, there are multiple rows per profileID in the geographic data. However, for any given profileID there will only be one unique row per profileID and IBRASubregion combination. This enables the specific occurrence of any given population in an IBRASubregion to be conveyed.

Table 38 Available 'metadata' fields in the ThreatenedBiodiversity_TPGeographicData entity set

Property name	Occurrence	Description	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, CODEN or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Threatened Populations	"Edm.String"

Property name	Occurrence	Description	Format	Data type
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how this record should be cited (attributed) when used. Note: The date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data (AtlasDB).	BioNet TP Geographic Data DD/MM/YYYY HH:MM AM/PM +HH:MM offset from UTC	"Edm.String"
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"Edm.String"
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"
dcterms_rights	1	Information about rights held in and over the resource. Typically, rights information includes a	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		statement about various property rights associated with the resource, including intellectual property rights.		
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: 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: dataset	"Edm.String"

Table 39 Available 'profile details' fields in the ThreatenedBiodiversity_TPGeographicData entity set

Property name	Occurrence	Description	Format	Data type
profileID	1	The unique identifier for the threatened species profile as stored in the Threatened Species Profile Data Collection. Provides a linking key to ThreatenedBiodiversity_Populations.	Integer	"Edm.Int32" Nullable="false"
scientificName	1	The full scientific name of the species.	<genus> <specific epithet> <connecting term> <infraspecifc epithet>;	"Edm.String"

Property name	Occurrence	Description	Format	Data type
			where the connecting term can be one of the following: subsp. = subspecies var. = variety	
vernacularName	1	The common name of the species.	Text	"Edm.String"
populationName	1	The name of the endangered population as listed under the *Biodiversity Conservation Act 2016*.	Free text	"Edm.String"
stateConservation	1	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* (BC Act 2016) or the *Fisheries Management Act 1994* no. 38 (FM Act 1994).	Controlled Vocabulary – see Appendix 1.1	"Edm.String"
countryConservation	1	The legal status of the species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Controlled Vocabulary – see Appendix 1.2	"Edm.String"
kingdom	1	The full scientific name of the kingdom in which the taxon is classified.	One item from the following controlled vocabulary: Animalia	"Edm.String"

Property name	Occurrence	Description	Format	Data type
			Plantae Fungi	
family	1	The full scientific name of the family in which the taxon is classified.	Text	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest.	Controlled vocabulary – see Appendix 1.3	"Edm.String"
dateOfFinalGazettal	0–1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"

Table 40 Available 'geographic' fields in the ThreatenedBiodiversity_TPGeographicData entity set

Property name	Occurrence	Description	Format	Data type
IBRASubregion	1	The name of the IBRA7 subregion. Refer to Australia's bioregions (IBRA) for more information on the IBRA framework. Note: Where a subregion occurs outside of NSW then the subregion name is not given, just the name of the state (e.g. QLD).	Controlled vocabulary using IBRA Version 7 subregion names	"Edm.String"
IBRASubregionID	1	The unique ID associated with the IBRA subregion.	Alphanumeric code	"Edm.String" Nullable="false"

Property name	Occurrence	Description	Format	Data type
occurrence	1	If the threatened entity is known or predicted to occur within the IBRA subregion.	One item from the following controlled vocabulary: Known Predicted	"Edm.String"
geographicalConstraints	0–1	Describes any special conditions for distribution of the species in the IBRA subregion.	Free text	"Edm.String"

9. Specifications for the ThreatenedBiodiversity_KeyThreateningProcesses entity set

Tables 41 to 44 provide the specifications of the data fields available in each category of the ThreatenedBiodiversity_KeyThreateningProcesses entity set available via the BioNet Threatened Biodiversity Web Service. Each table presents the group of terms that fall within the specified category.

Table 41 Available 'metadata' fields in the ThreatenedBiodiversity_KeyThreateningProcesses entity set

Property name	Occurrence	Description	Format	Data type
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Always: NSW Dept of Planning, Industry and Environment	"Edm.String"
collectionCode	1	The name, acronym, CODEN or initialism identifying the collection or dataset from which the record was derived.	Always: BioNet Threatened Biodiversity	"Edm.String"
datasetName	1	The name identifying the dataset from which the record was derived.	Always: NSW Key Threatening Processes	"Edm.String"
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how	BioNet Key Threatening Processes DD/MM/YYYY HH:MM AM/PM +HH:MM offset from UTC. Note: the	"Edm.String"

Property name	Occurrence	Description	Format	Data type
		this record should be cited (attributed) when used.	date and time are AEST adjusted for daylight saving and reflect the date and time that the web service data was last refreshed from the source data (AtlasDB).	
dcterms_language	1	The language of the resource based on RFC 4646 [RFC4646].	Always: en	"Edm.String"
dcterms_modified	1	The most recent datetime on which resource was the changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	"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	"Edm.DateTimeOffset"
dcterms_rights	1	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.	Always: CC-BY 4.0	"Edm.String"

Property name	Occurrence	Description	Format	Data type
dcterms_rightsHolder	1	A person or organisation owning or managing rights over the resource.	Always: 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: dataset	"Edm.String"

Table 42 Available 'profile details' fields in the ThreatenedBiodiversity_KeyThreateningProcesses entity set

Property name	Occurrence	Description	Format	Data type
profileID	1	The unique identifier for the key threatening process as stored in the Threatened Species Profile Data Collection.	Integer	"Edm.Int32" Nullable="false"
KTPName	1	The name of the key threatening process as listed under the *Biodiversity Conservation Act 2016* (BC Act 2016).	Free text	"Edm.String"
displayNameHTML	1	The common name of the species including HTML tags for rendering in HTML applications.	Text with HTML tags	"Edm.String"

Property name	Occurrence	Description	Format	Data type
stateConservation	1	The legal status of the species within NSW under the *Biodiversity Conservation Act 2016* or the *Fisheries Management Act 1994* No. 38.	Controlled Vocabulary – see Appendix 1.1	"Edm.String"
countryConservation	1	The legal status under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.	Controlled Vocabulary – see Appendix 1.2	"Edm.String"
generalType	1	Grouping of species using vernacular terms to enable software developers to filter records based on communities of interest.	Controlled vocabulary – see Appendix 1.3	"Edm.String"
dateOfFinalGazettal	1	The date of final gazettal.	DD/MM/YYYY	"Edm.String"
description	0–1	Description of the key threatening process.	Text with HTML tags	"Edm.String"
distribution	0–1	Description of where the key threatening process occurs.	Text with HTML tags	"Edm.String"
profileStatus	1	Indicates if all the attributes for the entity have been evaluated and populated in the system.	One item from the following controlled vocabulary: Complete Incomplete	"Edm.String"

Table 43 Available 'multimedia' fields in the ThreatenedBiodiversity_KeyThreateningProcesses entity set

Property name	Occurrence	Description	Format	Data type
associatedMedia	0–1	The unique identifier for multimedia resources (such as photos and sounds) associated with the profile listed in order of display. The actual resource can be retrieved via the BioNet Multimedia web service.	<identifier>;<identifier>	"Edm.String"

Table 44 Available 'documentation' fields in the ThreatenedBiodiversity_KeyThreateningProcesses entity set

Property name	Occurrence	Description	Format	Data type
fullReference	0–n	Documentation associated with the profile.	<document key>;<title>;<authors>;<year>;<URI>|<document key>;<title>;<authors>;<year>;<URI>|, where any given element is text with HTML tags	"Edm.String"

Appendix 1 Lists of controlled vocabularies

A1.1 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

A1.2 countryConservation

Conservation Dependent

Critically Endangered

Endangered

Extinct

Extinct in the Wild

Key Threatening Process

Vulnerable

Not Listed

A1.3 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

A1.4 classOfCredit

Species

Ecosystem

Species/Ecosystem

EEC/Marine

A1.5 patchSize

< 5 ha

5– < 25 ha

25– < 100 ha

>= 100 ha

N/A

A1.6 nativeVegetationCover

intact (> 70% natural habitat retained)

variegated (between 31 and 70% habitat retained)

fragmented (between 11 and 30% habitat retained)

relictual (with 10% or less habitat retained)

N/A

A1.7 habitatConstraints

Burrows

Caves

Claypans

Cliffs

Dunes

Epiphytes

Escarpments

Fallen/standing dead timber including logs

Hollow bearing trees

Intertidal zones

Other

Rocky areas

Semi-permanent/ephemeral wet areas

Swamps

Termite mounds

Waterbodies

N/A

A1.8 potentialImpact

Exclude Bush Fire

Restrict Bush Fire

No Conditions

A1.9 fireCodeStatus

Include on Fire Code

New Profile for Assessment

Not on Fire Code

A1.10 geographicDistribution

Known from <= 3 locations and/or an AOO < 10 km^2 or an EOO of < 100 km^2

Known from 4– < 6 locations and/or an AOO < 500 km^2 or an EOO of < 5000 km^2

Known from 6– <= 10 locations and/or an AOO 200 km^2 or an EOO < 20 000 km^2

None

A1.11 populationSize

< 50 individuals or < 250 individuals where threats are known

50– < 250 individuals or 250– < 2500 individuals where threats are known

250– < 1000 individuals or 2500 to < 10 000 individuals where threats are known

None

A1.12 rateOfDecline

Population reduction of >= 80% in 10 years or 3 generations

Population reduction of >= 50% in 10 years or 3 generations

Population reduction >= 30% in 10 years or 3 generations

None

A1.13 effectivenessOfManagement

Threats beyond control

Limited ability to control threats

Moderate ability to control threats

Good ability to control threats

N/A

A1.14 speciesDependOnHabitatAttribute

Non-responding attributes

Very slow developing attributes

Slow Developing attributes

Not dependant

N/A

A1.15 ageFemalesFirstProduce

> 4 years

2–4 years

< 2 years

N/A

A1.16 averageNumberOfOffspring

< 1

1–3

4–9

10–100

> 100

N/A

A1.17 reproductiveStrategy

Sterile or primarily clonal

Resprouts and only occasionally sets seed

Primarily sets seeds

Resprouts and sets seeds

N/A

A1.18 lifespan

< 1 year

1–5 years

> 5 years

N/A

A1.19 ageAtFirstFlowering

> 10 years

5–10 years

< 5 years

N/A

A1.20 seedProduction

< 50

in the 100s

in the 1000s

N/A

A1.21 seedbank

Transient canopy seedbank (0–2 years)

Transient soil seedbank (0–2 years)

Persistent canopy or soil seedbank (> 2 years)

N/A

A1.22 sensitivityToLoss

Very High Sensitivity to Loss

High Sensitivity to Loss

Moderate Sensitivity to Loss

N/A

A1.23 sensitivityToPotentialGain

Very High Sensitivity to Potential Gain

High Sensitivity to Potential Gain

Moderate Sensitivity to Potential Gain

Low Sensitivity to Potential Gain

N/A

A1.24 levelOfBiodiversityConcern

Very High

High

Moderate

Low

N/A