BioNet Systematic Flora Survey data standard

Version 1.1

Department of Climate Change, Energy, the Environment and Water

Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.
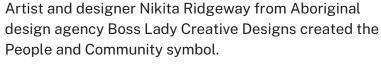
We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

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1. Introduction

The <u>BioNet Systematic Flora Survey Web Service</u> is an open application programming interface (API). It enables IT application developers to integrate Systematic Flora Survey data held in the BioNet Systematic Flora Survey data collection with software applications. This open data initiative has many potential uses. These range from mobile apps to organisational decision-management business systems.

The BioNet Systematic Flora Survey Web Service is designed to align (as best as possible) to the Australian Biodiversity Information Standard. All fields defined within this national standard are presented in the SiteData tables of the BioNet Systematic Flora Survey Web Service. Other NSW-specific fields are included and have been highlighted within the definition.

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

This document provides detailed information on the data that are available through the BioNet Systematic Flora Survey 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 (1.1) matches the <u>online metadata</u>. Check the value in 'bioNet:dataStandardVersion' for 'EntitySet Name=SystematicFloraSurvey_SiteData':

> **<EntitySet Name="SystematicFloraSurvey_SiteData**" EntityType="BioSvcApp. Models.tblFloraSurvey_SiteData" bioNet:bioNetOpenAPIVersion="4.0.2" **bioNet: dataStandardVersion="1.1"** bioNet:dateLastBulkUpdate="23/04/2020"/>

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 data standard for the SiteData entity sets is based on the National Vegetation Plot data standard and the Darwin Core standard.

Where data provided by the department do not fit into an existing term in the National Vegetation Plot data standard or Darwin Core, we used terms already in use in the Atlas of Living Australia or new proprietary terms. Table 1 provides a high-level overview of the type of data communicated in the SiteData entity set.

Table 1   **Overview of the categories of data shared via the SystematicFloraSurvey_SiteData entity set**

Category	Description
Metadata	Metadata associated with the record.
Survey	Information relating to the overall survey activity. Defined as part of the National Vegetation Plot standard.
Site	Information relating to the site that the survey was conducted at including geographic information. Defined as part of the National Vegetation Plot standard. Additional fields for New South Wales included.
Visit	Information relating to the specific visit to a site including temporal information and the observers conducting the survey. Defined as part of the National Vegetation Plot standard. Additional fields for New South Wales included.
Additional attributes	Information relating to the vegetation condition, structure and classification for a site/visit. Defined as part of the National Vegetation Plot standard.
Sampling unit	Information relating to the specific sampling unit implemented and the site/visit. Defined as part of the National Vegetation Plot standard.

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3. Specifications for the SystematicFloraSurvey_SiteData entity set

Tables 2 to 7 provide the exact specifications of the data fields available in each category of the SystematicFloraSurvey_SiteData entity set available via the BioNet Systematic Flora Survey Web Service. Each table presents the group of terms that fall within the specified category.

All data published in version 1.1 of the BioNet Systematic Survey Web Service is publicly available. No data needing to be withheld or obfuscated in accordance with the department's Sensitive species data policy will be published. No access restrictions are defined or required.

Table 2   **Available 'metadata' fields in the SystematicFloraSurvey_SiteData entity set**

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
institutionCode	1	The name (or acronym) in use by the institution having custody of the object(s) or information referred to in the record.	Text	'NSW Department of Planning, Industry and Environment'	"Edm.String"	None
ownerInstitutionCode	1	The name (or acronym) in use by the institution having ownership of the object(s) or	Text	'NSW Dept of Planning and Environment', 'Birds Australia',	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		information referred to in the record.		'Australian Museum'		
collectionCode	1	The name, acronym, code or initialism identifying the collection or data set from which the record was derived.	Always 'BioNet Atlas of NSW Wildlife'	'BioNet Atlas of NSW Wildlife'	"Edm.String"	None
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.	Text	'CC-BY 4.0'	"Edm.String"	None
dcterms_rightsHolder	1	A person or organisation owning or	Text	'NSW Dept of Planning and Environment, 'Birds Australia',	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		managing rights over the resource.		'Australian Museum'		
dcterms_bibliographicCitation	1	A bibliographic reference for the resource as a statement indicating how this record should be cited (attributed) when used.	BioNet Atlas of NSW Wildlife <current date> <HH:MM> <AM/PM> +<HH:MM offset from UTC>. Note: the date and time are AEST adjusted for daylight saving and reflect the data and time that the web service data was last refreshed from the source data (BioNet Atlas of NSW Wildlife database).	'BioNet Atlas of NSW Wildlife 7/02/2025 2:14 AM +11:00'	"Edm.String"	None
dcterms_available	1	Date that the resource became or will become available.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	'2022-07-07T14:29:59.167+10:00'	"Edm.DateTimeOffset"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
dcterms_modified	1	The most recent date-time on which the resource was changed.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC Note: The date modified relates to any change made in the source system (BioNet Vegetation Classification). It is thus possible that the date modified is updated but no actual changes are carried through into the data fields presented via the web service.	'2010-08-17T16:03:34.507+10:00'	"Edm.DateTimeOffset"	None
informationWithheld	0–1	Additional information that exists, but that has not been shared in the given record. [Systematic Flora Survey Web Service v1.1 does not publish any	Text	'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		data subject to the sensitive species data policy, so informationWithheld does not require population.]				
dataGeneralizations	0–1	Actions taken to make the shared data less specific or complete than in its original form. [Systematic Flora Survey Web Service v1.0 will not publish any data subject to the sensitive species data policy, so dataGeneralization field does not require population. Future releases of the web service may publish data subject to sensitive species data policy and the dataGeneralization	Text		"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		field will be populated at this time.]				
dcterms_language	1	The language of the resource.	RFC 4646 [RFC4646]	'en' for English	"Edm.String"	None
SFSSDID	1	An indexing primary key	Integer	'208577970'	"Edm.Int32" Nullable="false"	

Table 3   Available 'survey' fields in the SystematicFloraSurvey_SiteData entity set

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
surveyID	1	A unique ID that provides a link to attributes of a specified survey. A survey being an activity to undertake observations at one or more sites.	Integer	'2986'	"Edm.Int32" Nullable="false"	None
surveyName	1	Name of the survey.	Text	'Botany Wetland Vegetation Survey'	"Edm.String"	None
surveyOrganisation	0–1	Name of organisation or individual for whom survey is being conducted.	Text	'NSW Dept of Planning and Environment', 'Bankstown City Council'	"Edm.String"	None
surveyType	1	Description of type of survey conducted.	Text	'Vegetation Survey'	"Edm.String"	None
surveyMethodology	1	Formal name of the survey methodology utilised.	Text	'Native Vegetation Interim Type Standard – January 2010'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
studyMethodology Description	1	Further description or information regarding the survey methodology utilised.	Either text description or URL link	'www.environment.nsw.gov.au/publications/native-vegetation-interim-type-standard'	"Edm.String"	None

Table 4   **Available 'site' fields in the SystematicFloraSurvey_SiteData entity set**

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
siteID	1	A unique ID to identify a sampling feature (O&M), such as a site, transect, station.	Alphabetic code	'GIR04S7M'	"Edm.String"	None
originalSiteCode	0–1	A site identifier defined or maintained by the original owner of the data (where available).	Alphabetic code	'GIR04S7M'	"Edm.String"	None
stateProvince	1	The name of the next smaller administrative region than country (state, province, canton, department, region, etc.) in which the location occurs.	3-letter code for state. Note: Where the record does not overlap a valid Australian state, this field gives the value 'N/A'.	'NSW'	"Edm.String"	None
county	1	The full, unabbreviated name of the next smaller administrative	Text. Note: Where the record does not occur in a NSW	'Clarence Valley', 'Dubbo', 'Tumut'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		region than stateProvince (county, shire, department, etc.) in which the Location occurs. In the context of NSW, the local government area.	LGA this field give the value 'N/A'.			
IBRAID	1	The unique ID associated with the IBRA region.	Alphabetic code Marine records attributed with N/A.	'NET'	"Edm.String"	None
IBRA	1	The name of the IRBA (Interim Biogeographic Regionalisation for Australia) Region within which the record occurs. This is based on IBRA version 7.0.	Controlled vocabulary as per Australia's bioregions (IBRA). Note: If 'N/A' is given, this indicates that this field does not apply to the record.	'New England Tablelands'	"Edm.String"	None
IBRASubregionID	1	The unique ID associated with the IBRA subregion.	Alphanumeric code	'NET02'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
			Marine records attributed with N/A.			
IBRASubregion	1	The name of the IRBA (Interim Biogeographic Regionalisation for Australia) Subregion within which the record occurs. This is based on IBRA version 7.0.	Controlled vocabulary as per Australia's bioregions (IBRA). Note: where a subregion occurs outside of NSW then the subregion name is not given, just the name of the state e.g. QLD. Note: If 'N/A' is given, this indicates that this field does not apply to the record.	'Beardy River Hills'	"Edm.String"	None
geodeticDatum	1	The ellipsoid, geodetic datum, or spatial reference system (SRS) upon which the geographic coordinates given in decimalLatitude	Alphanumeric code	'GDA94'	"Edm.Decimal" Scale="variable"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		and decimalLongitude are based.				
decimalLatitude	1	The geographic latitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic centre of a location. Positive values are north of the Equator, negative values are south of the Equator. Legal values lie between -90 and 90, inclusive.	Decimal number	'-36.864246125'	"Edm.Decimal" Scale="variable"	None
decimalLongitude	1	The geographic longitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic	Decimal number	'149.927962884'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		centre of a location. Positive values are east of the Greenwich Meridian, negative values are west of it. Legal values lie between -180 and 180, inclusive.				
locationDescription	0–1	Description of the location associated with the site.	Text	'Saltwater Creek at Kincumber'	"Edm.String"	.
aspect	0–1	The aspect of the location where the observations was made measured in degrees clockwise from true north.	Integer	'30'	"Edm.Int32"	None
slope	0–1	The slope of the location where the observation was made measured in degrees from horizontal.	Integer	'15'	"Edm.Int32"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
landformPattern	0–1	A description of landform at a broad scale (best mapped at 1:200,000) based on slope, morphological type, dimensions, mode of geomorphological activity and geomorphological agent.	Text Controlled vocab: Refer to Appendix A1.1 below	'FLOOD PLAIN', 'DUNEFIELD', 'HILLS'	"Edm.String"	None
landformElement	0–1	A description of landform at a finer scale (best mapped at 1:15,000) based on slope, morphological type, dimensions, mode of geomorphological activity and geomorphological agent.	Text Controlled vocab: Refer to Appendix A1.2 below	'cliff', 'footslope', 'valley flat'	"Edm.String"	None
ElevationInMeters	0–1	The estimated elevation of the	Decimal number	'150.68'	"Edm.Decimal" Scale="variable"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		location where the observation was made measured in metres above sea level. Sourced from ANUCLIM.				
annualRainfallInMillimeters	1	The estimated annual rainfall of the location where the observation was made measured in millimetres. Sourced from ANUCLIM.	Decimal number	'1205.51'	"Edm.Decimal" Scale="variable"	None
annualMeanTemperatureInCelsius	1	The estimated annual mean temperature of the location where the observation was made measured in degrees Celsius. Sourced from ANUCLIM.	Decimal number	'17.52'	"Edm.Decimal" Scale="variable"	None

Table 5   **Available 'visit' fields in the SystematicFloraSurvey_SiteData entity set**

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
visitID	1	The unique key assigned to a census. A census is a time distinct assessment conducted within a survey at a designated site.	Alphanumeric	'CPXEI0000001'	"Edm.String"	None
visitNo	1	The replicate number for the visit.	Text	'1'	"Edm.String"	None
visitDate	1	The datetime which an observation occurred.	YYYY-MM-DDTHH:MM:SS.000+HH:MM offset from UTC	'2010-08-17T00:00:00+10:00	"Edm.DateTimeOffset"	None
visitOrg	0–n	The name of the organisations responsible for recording the original occurrence.	Text	'NSW Dept of Planning and Environment'	"Edm.String"	None
visitObservers	0–n	A list (concatenated and separated) of names of people, groups, or	Text	'Oliver P. Pearson, Anita K. Pearson'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		organisations responsible for recording the original occurrence.				
siteDescription	0-1	Description of the site.	Text	'Grey/white Sand soil. Previously cleared.'	"Edm.String"	None

Table 6   **Available 'additional attributes' fields in the SystematicFloraSurvey_SiteData entity set**

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
condition	0–1	The state of a patch of vegetation at the time of sampling relative to some specified standard or benchmark (where available).	Text Controlled vocab: Refer to Appendix A1.3 below		"Edm.String"	None
structuralForm	0–1	Shorthand structural formation codes representing the second level of vegetation classification in the hierarchical system (where available).	Text Controlled vocab: Refer to Appendix A1.4 below	'Woody: rainforest'	"Edm.String"	None
ownersClassification	0–1	The original identifier for the vegetation classification of the site used by the data owner.	Alphanumeric	'1512'	"Edm.String"	None
currentClassification	1	The unique identifier for the	Integer	'1512'	"Edm.Int32"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		vegetation classification of the site. Note: BioNet Systematic Flora Survey Web Service (v1) presents PCTID in this field.				
currentClassificationDescription	1	A colloquial plant community description that can be understood by non-botanists. It may include common names of dominant plant species, or names of a geographical region, a substrate, a soil type or a climatic zone. Note: NSW specific field. BioNet Systematic Flora Survey Web Service (v1)	Text	'River Red Gum open woodland wetland of intermittent watercourses mainly of the arid climate zone'	"Edm.String"	None

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
		presents PCTName in this field.				
PCTAssignmentCategory	1	Classification indicating the confidence with which a replicate has been assigned to a PCT via the quantitative classification method.

'Primary' indicates that the replicates classification centroid is within a threshold distance of the PCT classification centroid.

Secondary indicates that the replicates classification centroid is outside a threshold distance of the PCT classification centroid. | Controlled vocab: either 'Primary' or 'Secondary' | 'Primary' | "Edm.String" | None |

Table 7   Available 'sampling unit' fields in the SystematicFloraSurvey_SiteData entity set

Note: samplingUnit fields are not explicitly captured in BioNet at present and are not populated in the version 1.1 release.

Field name	Occurrence	Definition	Format	Example	Data type	Access restrictions
samplingUnitID	0–1	Identifier associated with the sample plot employed at the site/visit (where available).	Alphanumeric		"Edm.String"	None
samplingUnitArea	0–1	The area (m²) covered by the sample plot (where available).	Integer	'4'	"Edm.String"	None
samplingUnitShape	0–1	The geometrical shape; usually square, rectangular, circular or point or transect (plotless) (where available).	Controlled vocab: Refer to Appendix A1.5	'square'	"Edm.String"	None

Appendix 1 Controlled vocabularies

A1.1 landformPattern

Sourced from *Australian soil and land survey field handbook* (2009). See Landform Pattern Glossary (pp. 55–72).

A1.2 landformElement

Sourced from *Australian soil and land survey field handbook* (2009). See Landform Element Key and Glossary (pp. 44–54).

A1.3 condition

Sourced from *Field survey for vegetation classification* (2008) (to be confirmed).

Note: Definition of the condition field (and associated controlled vocabularies) are in draft and to be developed as part of further work on a National Veg Plot standard. This field is not populated in this version of the BioNet Systematic Flora Survey Web Service.

A1.4 structuralForm

Sourced from *Field survey for vegetation classification* (2008) (to be confirmed).

Note: Definition of the structural form field (and associated controlled vocabularies) are in draft and to be developed as part of further work on a National Veg Plot standard. This field is not populated in this version of the BioNet Systematic Flora Survey Web Service release.

A1.5 samplingUnitShape

square

rectangle

transect

circle

point

plotless