Systematic Survey Site data template instructions

Overview

Use this template to record site data; that is the presence or absence of an organism at a particular site locality at a point in time.

This Systematic Survey Site template must be used in combinations with the Systematic Survey Occurrence template and the Systematic Survey Metadata template.

Templates have been provided to facilitate integration of your data into the Biodiversity Data Repository database. Not all types of data have been catered for in the available templates at this stage; therefore, if you are unable to find a suitable template, please contact bdr-support@gaiaresources.com.au to make us aware of your data needs.

NEED TO KNOW:

For data validation, you will need your data file to:

- be the correct **file format**,
- have **matching template fields** to the template downloaded with provision to add extra fields (do not remove, or change the order of fields),
- have populated the relevant fields using the correct data type (for example dates for date fields),
- have values in **mandatory fields** (see Table 1), and
- comply with data **value constraints** for example the geographic coordinates are consistent with a geodeticDatum type of the four available options and latitude and longitude values fall within Australia.

File format

The systematic survey site data template is a **UTF-8** encoded comma separated value (csv) file (not Microsoft Excel Spreadsheet (xlsx)). Be sure to save this file with your data as a .csv (UTF-8) otherwise it will not pass the in-browser csv validation step upon upload. **Do not include empty rows**.

Template fields

The template file contains the field names in the top row. Table 1 will assist you in transferring your data to the template with the information:

- **Field name** in the template (and an external link to the Darwin Core standard for that field where available);
- **Description** of the field;
- **Required** whether the field is **mandatory or optional**;
- **Format** (datatype) required for the data values for example text (string), number (integer, float), or date; and

- **Example** of an entry for that field.
- **Vocabulary** links within this document (for example pick list values) where relevant. The fields that have suggested values are highlighted in Table 1 and the options for those fields are listed in Table 2 in alphabetical order of field name.

Table 1: Systematic Survey Site data template fields with descriptions, conditions, datatype format, and examples.

Field name	Description	Mandatory / Optional	Datatype Format	Examples / Vocabulary
siteID	A unique within dataset string identifier for the site. Valid values include strings that are used specifically for this survey or URIs from BDR Sites that have been established in previous surveys.	**Mandatory**	String	P1
siteType	The type of site that relates to its sampling type and/or dimensions.	**Optional**	String	Plot
siteName	A name for the site that may be more descriptive than the SiteID.	**Optional**	String	Plot 1
siteDescription	The site (plot) description covers important aspects of the site (generally of the land surface). Some overlap in collected information does occur due to the modular nature of the survey processes. The description provides significant background information to gain an appreciation of the plot history, topography, position in the landscape and for understanding the likely relationship between the soils, vegetation and fauna.	**Optional**	String	Fine woody debris.

Field name	Description	Mandatory / Optional	Datatype Format	Examples / Vocabulary
decimalLatitude	The geographic latitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic origin of a Site. Positive values are north of the Equator, negative values are south of it. Legal values lie between -90 and 0, inclusive for the Southern hemisphere. Valid coordinate ranges for the BDR system apply- see Further information section.	**Optional**	Number	-34.036
decimalLongitude	The geographic longitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic origin of a Site. Positive values are east of the Greenwich Meridian, negative values are west of it. Legal values lie between 0 and 180, inclusive for the BDR use case. Valid coordinate ranges for the BDR system apply- see Further information section.	**Optional**	Number	146.363
footprintWKT	A Well-Known Text (WKT) representation of the shape (footprint, geometry) that defines the Site. A Site may have both a point-radius representation and a footprint representation, and they may differ from each other.	**Optional**	WKT	LINESTRING (146.363 -34.036, 146.363 -34.037)
geodeticDatum	The geodetic datum, or spatial reference system (SRS) upon which the geographic coordinates given for the Site are based.	**Mandatory**	String	WGS84 (Vocabulary link)

Field name	Description	Mandatory / Optional	Datatype Format	Examples / Vocabulary
coordinateUncertaintyInMeters	The horizontal distance (in metres) from the given decimalLatitude and decimalLongitude describing the smallest circle containing the whole of the Site. Leave the value empty if the uncertainty is unknown, cannot be estimated, or is not applicable (because there are no coordinates). Zero is not a valid value for this term.	**Optional**	Integer	50
siteVisitStart	The temporal start of when the Site was being used to collect data for the survey. Expected values include date, dateTime, dateTimeStamp.	**Mandatory**	Timestamp	2016-02-28
siteVisitEnd	The temporal end of when the Site was being used to collect data for the survey. Expected values include date, dateTime, dateTimeStamp.	**Optional**	Timestamp	2016-02-28

Vocabulary lists

Apart from geodeticDatum, the data validation does not require adherence to the below vocabularies for each of the fields indicated as having vocabularies. These vocabularies are provided as a means of assistance in developing consistent language within the database. New terms can be added to more appropriately describe your data that goes beyond the current list. Table 2 provides some suggested values from existing sources such as: Biodiversity Information Standard (TDWG), EPSG.io Coordinate systems worldwide, the Global Biodiversity Information Facility, and Open Nomenclature in the biodiversity era.

Table 2: Suggested values for controlled vocabulary fields in the template. Each term has a preferred label with a definition to aid understanding of its meaning. For some terms, alternative labels are provided that mean the same sort of thing.
Note: **geodeticDatum value must come from one of the four options in this table**.

Template field name	Preferred label	Definition	Alternate label
geodeticDatum	AGD84	Australian Geodetic Datum 1984	EPSG:4203
	GDA2020	Geocentric Datum of Australia 2020	EPSG:7844
	GDA94	Geocentric Datum of Australia 1994	EPSG:4283
	WGS84	World Geodetic System 1984, used in GPS	EPSG:4326

Well Known Text (WKT) notes

The length of a WKT string or of its components is not prescribed. However the following maximum lengths are recommended for implementations writing CRS WKT strings:

- The total length of a keyword should not exceed 24 characters.
- The total length of a <name> should not exceed 80 characters.
- The total length of a <quoted Latin text> string should not exceed 255 characters.
- The total length of a <quoted Unicode text> string should not exceed 255 characters.
- The total length of a CRS WKT string should not exceed 4096 characters.

- Furthermore, MS Excel has a 32,767 (32K) character limit on individual cells in a spreadsheet.
- It is possible to edit CSV files outside of Excel in order to include more than 32K characters.

Further information

The valid latitude and longitude coordinates range in the BDR system is based on information from Geoscience Australia. The **Australian Continent** coordinate extremities can be found on this site:
https://www.ga.gov.au/scientific-topics/national-location-information/dimensions/continental-extremities

The coordinates range for the seven **Australian External and Offshore territories** can be found on these sites:
https://d28rz98at9flks.cloudfront.net/70562/AustraliaAndExternalTerritories.pdf

https://www.ga.gov.au/scientific-topics/national-location-information/dimensions/remote-offshore-territories)

In summary:

- **Australian continent**
  Latitude range: -10.689167 and -43.644444
  Longitude range: 153.637222 and 113.155000
- **Heard and McDonalds Island**
  Latitude range: -52.902770 and -53.195018
  Longitude range: 73.872715 and 72.577376
- **Lord Howe Island**
  Latitude range: -31.486129 and -31.787767
  Longitude range: 159.280368 and 159.036807
- **Macquarie Island**
  Latitude range: -54.355874 and -55.123198
  Longitude range: 158.998625 and 158.674929
- **Norfolk Island**
  Latitude range: -29.136568 and -28.994170
  Longitude range: 167.998035 and 167.913770
- **Ashmore and Cartier Islands**
  Latitude range: -12.184700 and -12.547300
  Longitude range: 123.581854 and 122.927010
- **Christmas Island**
  Latitude range: -10.412390 and -10.570559
  Longitude range: 105.712810 and 105.533149
- **Cocos Islands**
  Latitude range: -11.822133 and -12.211000
  Longitude range: 96.930763 and 96.815497
- **Coral Sea Islands**
  Latitude range: -15.721024 and -29.982747
  Longitude range: 159.140729 and 147.839456
- **Australian Antarctic Territory**
  Latitude range: -64.928558 to -90.000026
  Longitude range: 167.724334 to 45.000000

For assistance, please contact: bdr-support@gaiaresources.com.au