

LPI data requirements and list of fields for data input users

About this guide

This guide contains a description of the type of data that can be added to the Living Planet Database (LPD) and an overview of the fields included in the data entry form system used for this purpose. It also provides a short explanation of each field and the various options to aid authorised users with data entry. If you have any queries or suggestions, please contact LivingPlanetIndex@ioz.ac.uk.

Data requirements

New population data can only be added to the Living Planet Database if they meet certain requirements, which are outlined in more detail below.

What is a population? The term 'population' is currently used to define each record in the database. We use it as a short-hand for 'population time-series' or 'time-series' and we define it as the data for a single species that has been monitored at a particular location over time. The use of the term 'population' here does not necessarily infer any ecological definition.

The LPI uses time-series to track trends in the abundance of a large number of populations of species globally. Specific types of population abundance data can be used for this purpose. These include:

- Full population count
- Estimate (e.g. where population size was estimated from measured parameters)
- Density
- Index
- Proxy (e.g. breeding pairs, nests, tracks)
- Measure per unit effort (e.g. the number of fish caught per net per hour)
- Biomass (e.g. spawning stock biomass)
- Sample (e.g. where a proportion of the population is regularly monitored)
- Occupancy

Data types that are not used in this database are:

- Data from experimental observations (testing different treatments to populations over time)
- Survival rate
- Recruitment data such as number of eggs or young
- Catch or hunting data unless there has been a measure of effort
- Data where changes in survey area or method has changed over time and this has not been corrected for

Abundance data need to have been collected from a single species of vertebrate (mammals, birds, fish, reptiles and amphibians) over a period of at least two years, which do not need to be consecutive. If multiple measurements are taken over the course of a year, these should be transformed into a single annual figure.

Information is also needed on the geographic location and method used. To present an accurate measure of abundance change, it is important that both of these are same in each year. If the

method changes within the study period, the data should be entered separately. If only part of the dataset is appropriate for entry, all other values should be excluded.

The data may come from a variety of sources, as long as these are referenced and traceable, including peer-reviewed scientific articles, books, government reports, online databases, stock assessments and grey literature.

Database Fields

Base Information

Audit table	This is a read-only table, for which no data entry is required. The user name and date/time is automatically recorded each time a record is edited or a new record created.
Data source reference	This is the formatted reference copied from EndNote.
Data source citation	This is the full reference copied from EndNote.
Source year	The year in which the data source was published or accessed (in the case of an online database or information source).
Confidential	Indicates whether the data are confidential. If data are marked as confidential, they will not be reproduced individually but will be included in larger scale analyses.
Is data collection continuing?	Indicates whether data collection on this population is continuing i.e. whether there will be regular data updates from the same data source. The default value is 'No' (e.g. for papers, unless a URL where the data is stored is specified).
Why were the data collected?	The reason the data were collected i.e. for conservation, ecological or general monitoring purposes.
Replicate	Indicates whether the record is a replicate, i.e. whether the data overlap with other populations of higher quality. Replicates are excluded from the global index but may be used in smaller scale analyses.

Taxonomy

Class	All taxonomic information is entered according to the latest authority for that class. These are: Birds Mammals Fish Amphibians Reptiles – freshwater turtles & tortoises ,
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	crocodilians, marine turtles and all other reptiles
Order	As above
Family	As above
Genus	As above
Species	As above
Authority	As above
Common Name	The English common name for the species (not subspecies) according to the taxonomic authority.
Subspecies	This is an optional field for subspecies information.
Notes	Enter any relevant taxonomic information in this field, including any differences in the nomenclature used by the author(s) or taxonomic uncertainties.
ED score	This is the Evolutionary Distinctiveness score, which is available for mammals, amphibians and birds only.
IUCN category	IUCN Red List threat category from the IUCN Red List website.
Year assessed	As above
Criteria	As above

Geography

Location of population	A brief description of the location of the population in this field.
Latitude and Longitude	Data in decimal degrees. For a large area, use the midpoint of the range. For
Is lat/long for a specific location?	Indicates if the lat/long is for a specific point location (e.g. a lake or National Park) as opposed to a midpoint of a large area (e.g. a region or country).
Country list	Select the country (or countries) that the population occurs in from the drop-down list. Marine data are allocated a country if it is within its EEZ (see map), or as International Waters if outside. Multiple countries are selected in order of proportion of the population it represents, starting with the greatest.
Region	This describes the political region a country is assigned to.
Estuarine population	This is selected if the population was sampled from an estuarine location. The type of estuary the population was sampled from, and any threats to this estuarine system are also recorded.
Located in Arctic	This is selected if the population was sampled from a location in the Arctic. The Arctic region, CAFF region, the trophic level of the species, and

	whether the species is Sea ice dependent are also recorded.
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Ecology

Terrestrial realm	These fields indicate the realm that a terrestrial population occurs in.
Freshwater realm	These fields indicate the realm that a freshwater population occurs in.
Marine realm/ocean	These fields indicate the realm and ocean that a marine population occurs in.
Terrestrial/Freshwater/Marine biome	These fields indicate the biome that a population occurs in.
Temperate or Tropical	This is selected according to the assigned realm.
Habitat list (Forest, Savanna, Shrubland, Grassland, Inland wetlands, Rocky areas, Caves, Desert, Marine neritic, Marine oceanic, Marine deep benthic, Marine intertidal, Marine coastal, Artificial terrestrial, Artificial aquatic)	A list of habitats the species occurs in according to the IUCN Red List website .
Range	Indicates whether the species is native or alien in the location in question.
Species restricted to	Indicates whether the species is restricted to Inland water, an Oceanic island or a Continental island.
Migratory population	Indicates whether some or all of the population undergoes true migration. If so, the Migratory activity, Secondary region and the GROMS migration type are recorded.
Resident population	Indicates whether some or all of the population is resident at the location in question.
Invasive population	Indicates whether the species is invasive in this location. If so, the type(s) of impact it has is/are selected.

Population Data

Units	A brief description of the units the population data were reported in.
Sampling method	A brief description of the main method used to collect the data.
Notes	Records the table or figure number the data were extracted from and any essential notes on the population data entered.
Data transformed	Indicates if the population data entered were transformed from the raw data in the data source.
Percentage of global population / Percentage based on	Indicates the proportion the population represents, based on global population size or the global range of the species.
Data quality measures (Scale, Data type, Measure of variation, Data source type, Number of sources)	The quality of data is measured using the scale at which the monitoring took place, the type of data, whether variation was measured in population estimate and the number and quality

	of the data source.
Reasons for Population Increase (Introduction, Recolonisation, Recruitment, Removal of threat, Rural to urban migration, Reintroduction, Range shift, Legal protection, Management, Other, Unknown)	Indicates the reasons given by the data source for any consistent increase in the population.
Population Data	The annual population value as it appears in the data source.

Protected Areas

Is population in a protected area?	The protected status of the population according to the definitions.
Protected area type	Selected according to the information in the World Database of Protected Areas (WDPA) .
International protected areas (WHS, Ramsar, UNESCO Biosphere, Other (Birds Directive, Habitats Directive, ASEAN))	Indicates whether the protected area has an international designation.
WDPA Information	Records details for each protected area using the World Database of Protected Areas (WDPA) .

Management

Managed population	Indicates if the population is managed and briefly describes the type.
Utilised population	Indicates if the population is utilised.
CITES listing	The CITES listing for the species.
CMS listing	The CMS listing for the species.

Threats

Threat status (Threatened, Unknown – no information, Unknown – large data set, No threats)	Indicates if the population is threatened, not threatened or whether its threat status is unknown based on information from the data source.
Threatened Populations (Habitat Loss, Habitat Degredation/Change, Invasive spp/genes, Climate change, Pollution, Disease, Exploitation)	If the population is threatened the primary, secondary and tertiary threats are selected.
Exploitation Categories (Caught and used, Pet trade, Sport hunting, Persecuted as pest, Indirect killing)	If the population is threatened by Exploitation, the type is selected.