

Fish Metadata Statement

Overview

The Murray-Darling Basin fish database incorporates:

- Historic long-term fish & macroinvertebrate monitoring data from the Sustainable Rivers Audit (SRA)
- long-term fish monitoring data from the Murray—Darling Basin Fish Survey (MDBFS)
- The current database contains 34 tables, and has extensive relationships between tables (as shown in Figure 1 below).

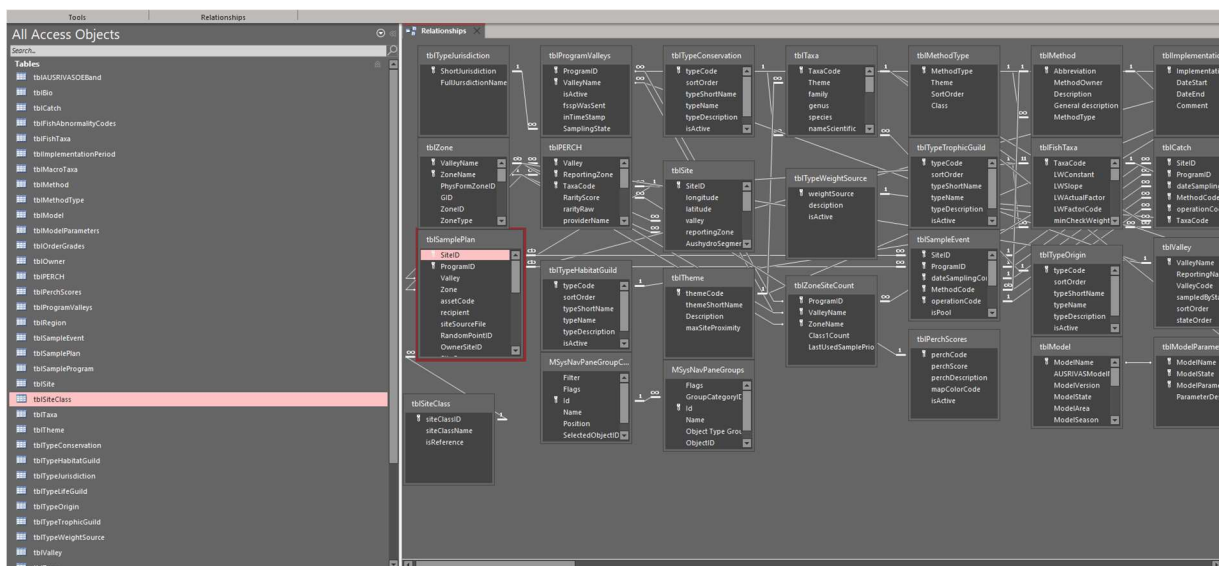


Figure 1: Complex relationships between tables

The critical fish monitoring information is recorded in two tables within this database, the `tblCatch` and `tblBio` tables (as shown in Figure 2 over the page).

The `tblCatch` table contains information relating to observed species and species counts, at specific date/time and location. When the fish sampling protocol dictates that additional metrics are captured for individual fish, this information is recorded in the `tblBio` table.

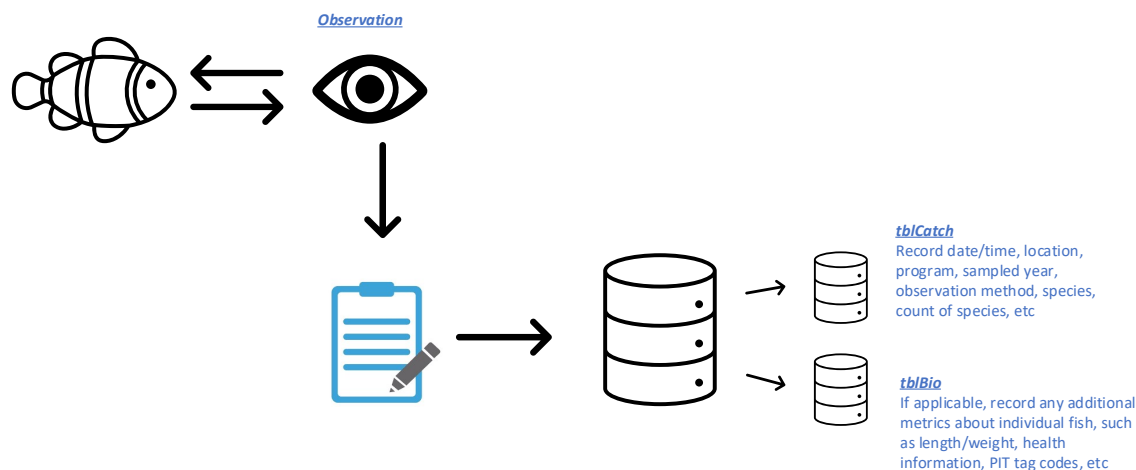


Figure 2: Symbolic relationship between physical observation and creating a data record

This document will therefore describe the metadata related to both the tblCatch and tblBio tables, as well as the relationship between these tables, which should allow the data to be correctly interpreted and utilised.

Table specific metadata

Table relationship: tblCatch to tblBio

Whenever an operation to survey fish is carried out, a single record is created in the tblCatch table. The information recorded will include date/time, location, species and the count of that species, such as 'Golden Perch' and a count of 50 fish.

In the fish protocols, which define the locations and species to be monitored, if any individual fish meet the criteria to record their individual biological data, such as size or health data, then a corresponding record will be made in the tblBio table, including these additional metrics for each specific fish.

This relationship between tables is one (1) record in tblCatch corresponds to many records in the tblBio table.

However, for a record in the tblCatch table (for a specific date/time, location, and species) there may not be any corresponding records in the tblBio table, as no fish may have met the criteria to be recorded.

Table: tblCatch

Microsoft Access field name	Field description	Data format
SiteID	MDB Fish Survey Site ID (supplied) (PK FK)	Integer (5) ('6nnnn')
DateSamplingCommenced	Date that sampling commenced at this Site	DateTime (dd-mm-yyyy)
MethodCode	Jurisdiction's 'method' code (eg EFB, BP, BT, etc)	Text (n). Requires code definitions if not known to MDBA
OperationID	Number of this Operation (eg 1, 2...n). Required to uniquely identify tblFishCatch and tblFishBio) (PK) At each site sampled record the OperationID starting from 1.	Text (integer will be converted to text)
TaxaCode	Fish taxa code of the form 'GENSPE' (PK)	Text (6), UPPERCASE, no spaces, no inventions
Abundance	Total caught this species	Integer (>0)
Biomass	Required for SRA programs	Integer, default is 0.0
RatioAbnormal	Required for SRA programs	Integer, default is 0.0
InTimeStamp	Automated populated when record is ingested into MDBA's enduring database	DateTime (dd-mm-yyyy h:mm:ss AM/PM)
isBiomassCalculated	Required for SRA programs	Boolean
weightSource	Identification of weight source, either estimated in the field or calculated	Text

Table: tblBio

Microsoft Access field name	Field description	Data format
SiteID	MDB Fish Survey Site ID (supplied) (FK)	Integer (of form '6nnnn')
ProgramID	Created to link back to specific project and survey year	Text "PRGxxxx"
DateSamplingCommenced	Date that sampling commenced at this Site (FK)	DateTime (dd-mm-yyyy)
MethodCode	Jurisdiction's 'method' code (eg EFB, BP, BT, etc)	Text (n). Requires code definitions if not known to MDBA
OperationCode	Number of Operation that returned these sample data (FK). At each site sampled record the OperationCode starting from 1.	Text (n). Any integer will be converted to text
taxaCode	Fish taxa code of the form 'GENSPE' (FK).	Text (6), UPPERCASE, no spaces, no inventions
OpNum	Required for SRA programs	Integer (>0)
FishNo	Required for SRA programs	Integer (>0)

Microsoft Access field name	Field description	Data format
taxaLength	Length (mm) of each caught individual	Integer (≥ 15 mm)
has Abnormality	Either 0 or -1	Integer
TaxaWeight	Weight (grams) of each caught individual where required according to taxa list (record if fish was tagged).	Integer (>0) Default is NULL
weightSource	Either Calc or Estimated	Text
ConditionCode	A string of one or more codes (eg LOF) representing observed health abnormalities.	Text (100), (eg LFOGS is acceptable). Default is NULL
Comment	Comment about this fish (eg 'extensive lesions and fin deformities')	Text (100)
inTimeStamp	Automatically populated when record is ingested into MDBA's enduring database	DateTime (dd-mm-yyyy h:mm:ss AM/PM)
isWeightCalculated	Method of determining fish weight	Boolean
inTimeModified	Matching inTimeStamp unless manually updated at a later date/time	DateTime (dd-mm-yyyy h:mm:ss AM/PM)
Recapture	If a recapture mark as 'True'	Text (100)
PITCode	The unique code of a Passive Integrated Transponder that is displayed on a reader in digital format when a caught individual, containing a microchip (PIT), is scanned (record if fish was tagged).	Text (100)
PITCodeNew	The unique code of a Passive Integrated Transponder that is displayed on a reader in digital format when a caught individual is inserted with a microchip (PIT) under this protocol and is scanned (record if fish was tagged).	Text (100)
HealthCode	A string of one or more codes (eg LOF) representing observed health abnormalities.	Text (100), (eg LFOGS is acceptable). Default is NULL

Further information will be available for corresponding records, such as methodCode or ProgramID, in the corresponding tables within this database.

Note on the analysis of fish monitoring data across multiple years

The end-user of the data needs to be aware that these sampling programs may spread across multiple years, specifically for the Sustainable Rivers Audit (SRA) years where the program was carried out over 3-year blocks, as well as the MDBFS 2019-2021 survey. This means that sites sampled in 2019-2020 will not be surveyed again in the 2020-2021 period and vice versa. The end-user must, therefore, be aware that an absence of data for a particular year does not mean that sampling was carried out in that period and no fish were caught/measured. Abundance must be calculated across the full duration of individual sampling programs.

Sampling Program	Individual Sampling Periods
SRA 1 (2005 – 2007)	2004-2005 2005-2006 2006-2007
SRA 2 (2008 – 2010)	2007-2008 2008-2009 2009-2010
SRA 3 (2011 – 2013)	2010-2011 2011-2012 2012-2013
MDBFS 2014-2015	2014-2015
MDBFS 2015-2016	2015-2016
MDBFS 2016-2017	2016-2017
MDBFS 2017-2018	2017-2018
MDBFS 2018-2019	2018-2019
MDBFS 2019-2021	2019-2020 2020-2021
MDBFS 2021-2022	2021-2022
MDBFS 2022-2023	2022-2023

For additional information, please contact the MDBA Data Team on dataServices@mdba.gov.au

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Data Team

Murray—Darling Basin Authority (MDBA)