

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), as continuing from SRA

The critical Murray-Darling Basin Scale, fish monitoring information is recorded in two tables each for both the SRA and the MDBFS dataset, the tblFishCatch and tblFishBio tables (as shown in Figure 1).

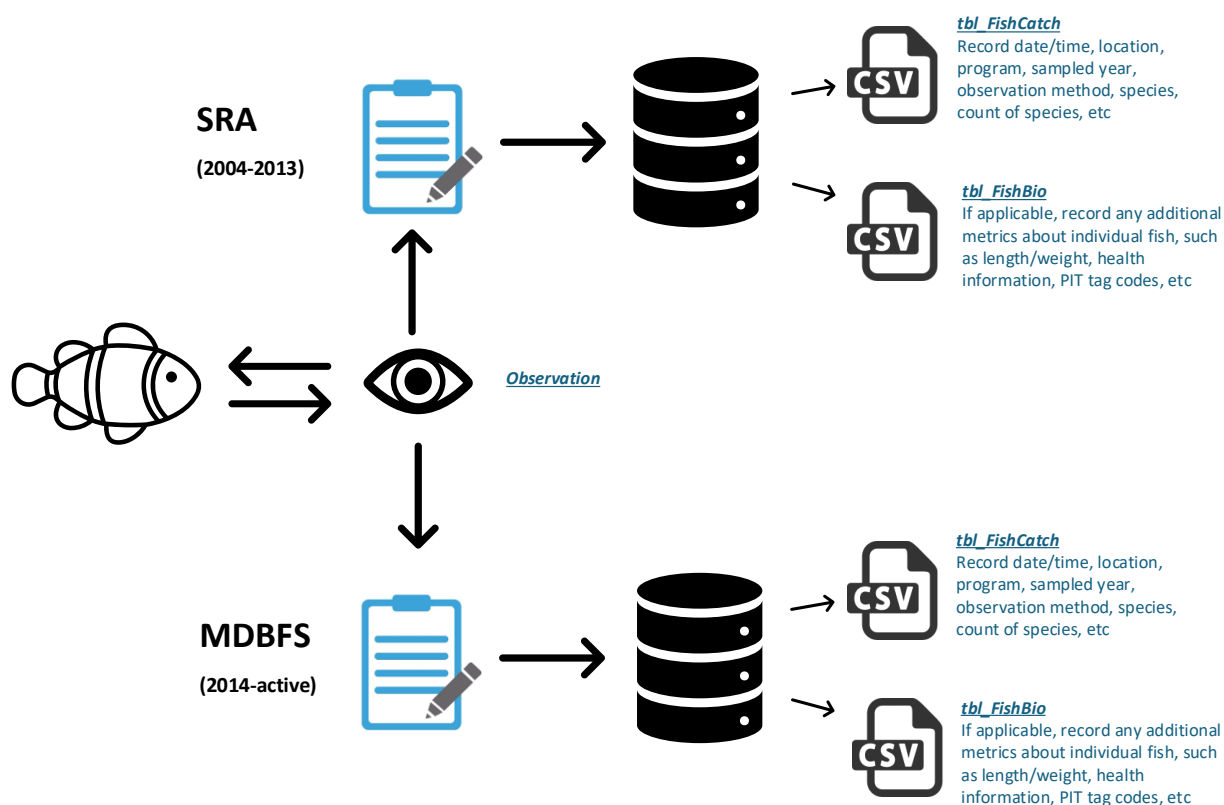


Figure 1: Symbiotic relationship between physical observation and creating a data record

The tblFishCatch 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 (for example the length and weight of a fish), this information is recorded in the tblFishBio table.

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

Attributes	SRA dataset (2004-2013)	MDBFS dataset (2014-2024)
Spatial extent/coverage	Murray-Darling Basin, four states, 23 valleys	
Sampling period	2004-2013	2014-ongoing
Site selection	Stratified–random site selection procedure within Valley Zones (14-28 sites per valley)	Fixed permanent primary and back-up sites (4-8 sites per valley*)
	All main habitat types in the river channel (floodplains, wetlands and ephemeral streams not sampled)	

* With the exception that the MDBFS only sampled 50% of the MDB each year in the 2019 and 2020 sampling years

Table specific metadata

Table relationship: tblFishCatch to tbl_FishBio

Whenever an operation to survey fish is carried out, a single record is created in the tblFishCatch 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 tbl_FishBio table, including these additional metrics for each specific fish.

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

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

The following describes each of the published CSV files

- **SRA_tblFishCatch**
- **SRA_tblFishBio**
- **MDBFS_tblFishCatch**
- **MDBFS_tblFishBio**

Table: SRA_tblFishCatch

Field name	Field description	Data format
SiteID	MDB Fish Survey Site ID (supplied) (PK FK)	Integer (5) ('6nnnn')
ProgramID		
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
OperationCode	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
ReportingPeriod	The annual Period in which the measurements were recorded	YYYY-YYYY
Jurisdiction	The specific jurisdiction that recorded the measurements	Text (3), eg: NSW, Vic, SA, QLD
db_table	The name of the source table	tblFishCatch

Table: SRA_tblFishBio

Field 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)
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)

Field Access field name	Field description	Data format
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)
PITLocation		
HealthCode	A string of one or more codes (eg LOF) representing observed health abnormalities.	Text (100), (eg LFOGS is acceptable). Default is NULL
ReportingPeriod	The annual Period in which the measurements were recorded	YYYY-YYYY
Jurisdiction	The specific jurisdiction that recorded the measurements	Text (3), eg: NSW, Vic, SA, QLD
db_table	The name of the source table	tblFishBio

Table: MDBFS_tblFishCatch

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
Caught	Total caught this species	Integer (>0)
db_table	The name of the source table	tblFishCatch
ReportingPeriod	The annual Period in which the measurements were recorded	YYYY-YYYY
Jurisdiction	The specific jurisdiction that recorded the measurements	Text (3), eg: NSW, VIC, SA, QLD
ProgramID	Created to link back to specific project and survey year	Text "PRGxxxx"

Table: MDBFS_tblFishBio

Field name	Field description	Data format
SiteID	MDB Fish Survey Site ID (supplied) (FK)	Integer (of form '6nnnn')
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
OperationID	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)
TaxaLength	Length (mm) of each caught individual	Integer (>=15 mm)
TaxaWeight	Weight (grams) of each caught individual where required according to taxa list (record if fish was tagged).	Integer (>0) Default is NULL
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
Comment	Comment about this fish (eg 'extensive lesions and fin deformities')	Text (100)
db_table	The name of the source table	tblFishBio
ReportingPeriod	The annual Period in which the measurements were recorded	YYYY-YYYY
Jurisdiction	The specific jurisdiction that recorded the measurements	Text (3), eg: NSW, VIC, SA, QLD
ProgramID	Created to link back to specific project and survey year	Text "PRGxxxx"

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 2.1 (2008 – 2010)	2007-2008 2008-2009 2009-2010
SRA 2.2 (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
MDBFS 2023-2024	2023-2024

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

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