



Preparation of Australia's southern bluefin tuna catch and effort data submission for 2024

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Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

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Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

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Summary

On behalf of the Australian Government, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) has compiled aggregated catch and effort, catch by fleet, raised catch, catch at size, and non-retained catch for submission to the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). This has been compiled from a number of databases including daily fishing logbooks, catch disposal records and fisheries observer reports, collected and managed by the Australian Fisheries Management Authority. The Australian catch of southern bluefin tuna from the surface (purse seine) fishery is also sampled by contracted field staff prior to release into farm cages. The sample data include size and weight measurements that are used to calculate representative size distributions and average weights.

Delta Tables hosted in the Microsoft Azure Data Lake, excel spreadsheets and Databricks notebooks are used to integrate and process the source data sets and create the data files required for the CCSBT data exchange. This report provides copies of data collection forms, as well as flow charts illustrating the data integration procedures. The paper also describes the data validation procedures.

Introduction

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), within the Australian Government Department of Agriculture, Fisheries and Forestry (the department), provides data reports each year to the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) as part of the annual data exchange (CCSBT 2012). In April 2025, the following reports were submitted to the data exchange:

- Aggregated Catch and Effort data 2023 and 2024
- Raised Catch 2023 and 2024
- Total Catch by Fleet 2023 and 2024 (quota and calendar year)
- Catch at Size data 2023 and 2024
- Non-retained Catch 2023 and 2024

The following reports are also provided directly to the data exchange by the Commonwealth Scientific and Industrial Research Organisation (CSIRO):

- Tag Releases/Recoveries and Reporting Rates
- Direct Ageing data
- Catch at Age data
- Raised Catch-at-Age for the Australian Surface Fishery
- CPUE series (nominal)

Preparation of the CSIRO data sets is described in separate papers (e.g. Preece et al. 2004; Eveson 2011).

1 Data sources

In recent years, the Australian Fisheries Management Authority (AFMA) have developed a Data Warehouse that draws together data from various tables within the original databases (Daily Fishing Logs, Catch Disposal, PISCES and Observer databases). These original databases have evolved over time, with changes to logbooks, the introduction of electronic logbooks (e-logs) and transfer of catch disposal data to the licencing database (PISCES). Not all data are drawn into the data warehouse, however, it is still possible to link back to necessary tables in the original databases for most purposes when required.

Also, the introduction of electronic-monitoring (e-monitoring) has meant that from 1 July 2015 observers are no longer deployed on longline vessels and length measurements are now obtained solely from port sampling rather than at time of catch.

There were four sources of data used to produce the data reports. These were: Daily Fishing Logs Database; Catch Disposal Database; Tow Cage Size Monitoring Database; and Fisheries Observer Databases.

1.1 Daily Fishing Logs Database

The Daily Fishing Logs Database is maintained by AFMA and contains data collected from logbooks that fishers are required to complete. The logbooks of relevance to southern bluefin tuna (SBT) catch for the 2024 data submission were the AL06 (pelagic longline), TPB03A (purse seine and pole log for farmed SBT), and PS01A (purse seine log for non-farm SBT). See Appendix A for samples of these logbooks. Electronic logs are also used by AFMA, collecting the same information as the paper logbooks. Each fishing operation is given a unique identifier in the Daily Fishing Logs Database and tables are linked using this identifier. The following tables are required from this database:

- Operations – contains information on each operation, including start latitude, start longitude and vessel identifier.
- Catch – contains a separate record for each species caught, together with the number of fish caught and estimated weight of the catch.
- Elect_Shot_Detail – contains depth and position information for e-logs.
- Fishing_Effort – contains fishing method used and fishing effort information (e.g. number of hooks for longline operations; search hours for purse seine operations).
- Operation_Longline – contains other information on longlining operations (e.g. length of mainline).
- Operation_Pole – contains other information on poling operations (e.g. number of poles used).
- Vessel – contains information on each licensed vessel; vessel name is used to identify individual vessels when determining the number of vessels that fished.
- Tow_Cage_Transfer – contains information on each transfer of fish from the capture vessel to the tow cage in each purse seine operation. Provides the link between the Daily Logs Database and the OtherInfo table produced from the Tow Cage Size Monitoring Reports.

1.2 Catch Disposal Database

The Catch Disposal Database is used by AFMA for quota monitoring and contains data collected from the CR4A (SBT Catch Disposal Record; all methods except purse seining for farms), SBT02 (SBT Farm Catch Disposal Record – Purse Seine Boat) and SBT04B (SBT Farm Catch Disposal Record; purse seining for farms). See Appendix B for samples of these forms. The following tables are required from this database:

- Catch Disposal – contains information on trip start and end dates.
- Landing – contains information on species caught, numbers of fish caught and weight of catch.
- Fishing_Method – provides the fishing method information.
- Tow_Catch_Transfer – contains identification of capture vessel for purse seine operations.

1.3 PISCES Database

PISCES is the licencing database. Landings data and quota monitoring has been moved into this database. The relevant tables for this database are now:

- CDR_Catch_Disposal – contains general information about the landing, such as trip end date and fishing trip id.
- CDR_Operator_Landing – where there is no receiver information, operator reported catches are used.
- CDR_Receiver Landing – contains information about the catch, as reported by the receiver.
- CDR_SBT, CDR_SBT03, CDR_SBT03_Mortality, CDR_SBT04, CDR_SBT04_Transfer – SBT information is kept in these separate table which store information about the SBT farm sector, such as tow cage information and transfers to farm cages.

1.4 Tow Cage Size Monitoring Database

Tow cage size monitoring data are collected by Seatec Pty Ltd, a company contracted to AFMA, and its primary purpose is for estimation of total weight of SBT in tow cages prior to transfer of fish to farm cages. In 2006, the then Bureau of Rural Sciences (now the Australian Bureau of Agricultural and Resource Economics and Sciences; ABARES) developed a database for Protec Marine to record this information, the Tow Cage Size Monitoring Database, replacing a series of spreadsheet forms. From the 2016–17 season, Seatec have been using a version of this database for this purpose. Data for the 2006–07 and previous fishing seasons were then entered into this database from the original spreadsheets. From December 2007, data were entered directly into the database rather than using spreadsheets as an intermediate step. The database has been used as the source of SBT length samples for the purse seine component of the Catch at Size reports for 2008 to 2024 submissions. A sample of one of the reports produced by the database is given in Appendix C.

For each tow cage, fish were sampled until 100 fish (40-fish prior to 2012) weighing 10 kg or more were measured and weighed. The length and weight of all fish sampled were entered into the database, including fish smaller than 10 kg, as were the total number of fish transferred to farm cages. Data were then collated to produce a table of statistics for each tow cage, named Analysis – OtherInfo, which was used in preparation of Raised Catch and Total Catch by Fleet reports (see

Appendix D). The raw lengths and weights of all sampled fish for the year were combined and used in conjunction with the Daily Fishing Logs data to prepare the Catch at Size report.

In the 2010–11 fishing season, stereo video was used to measure fish lengths and determine the average weight for some of the tow cages. These data were initially recorded in another database. However, for the purposes of the data preparation, all necessary data were migrated to the Tow Cage Size Monitoring Database.

1.5 Fisheries Observer Databases

AFMA employs various methods to collect data on board fishing vessels.

Observer coverage of pelagic longline vessels has been sourced from the Electronic Monitoring (EM) Database since 2015 when EM was made mandatory for vessels operating in Australian longline tuna fisheries. The baseline EM audit rate for all fisheries is a minimum 10% of shots per boat and a minimum of one shot per drive for each boat per month. The analyses include analysis of full catch composition for each shot selected for review.

The following EM database tables contribute data to the Non-retained Catches and ERSWG data submissions:

- Event_Haul – describes vessel hauling activity (e.g. time, location, gear type).
- CatchItem – gives the number of individuals caught during an operation including species, life status and fate (retained or discarded).
- IncidentalTake – describes interactions with species of special interest including species, life status and fate

Observer coverage of purse-seine vessels is sourced from the Human Observer database. AFMA implemented its current Observer Database in September 2008. The following observer database tables contributed data to the Non-retained Catches and ERSWG data submissions:

- Activity – describes vessel activity (e.g. setting, hauling, searching and time, location, environmental conditions).
- Opn_Biological – describes biological attributes of animals caught including life status of retained and discarded fish.
- Opn_Biological_Length – gives the length type and length measurement of each sampled fish.
- Vyg_Project – provides the name of the project under which the observer was operating.

Port sampled lengths were provided by AFMA in a spreadsheet for use in the longline length frequency submission for 2025.

1.6 Data Warehouse

Single tables have been created to bring data from the disparate areas together for easier access. The key tables in the warehouse are:

- Fact_CDR_Boat_Landing_Spcs – draws together the Catch Disposal Database and the PISCES Database to create a single table with a complete time series of landings data.

- Fact_Fishery_Boat_Operation – draws together data from the various tables in the Daily Fishing Logs Database to produce a single table with shot date, position and effort information. It retains the original record number so that it can link back to the Daily Fishing Logs Database at any time, when required.
- Fact_Fishery_Boat_Optn_Species – draw together data from the various tables in the Daily Fishing Logs Database and shows logbook recorded catches of each species in each operation.

2 Data preparation

JSON-formatted files of the tables in the AFMA Daily Fishing Logs, Catch Disposal Records, Human Observer databases and Data Warehouse are acquired late in the first quarter of each calendar year. The data are imported to the Azure Data Lake and converted to Delta Tables. Data from the EM Database and Tow Cage Size Monitoring Database was imported to the Azure Data Lake as CSV files. Databricks notebooks have been created to extract the required data for the data submission. The length data for the Catch at Size reports are processed at least partly in MS Excel to enable estimation of size distributions for month-location strata that have not been sampled by observers or Seatec Pty Ltd.

See Appendix D for flow diagrams of data sources and tables used to produce the various reports.

2.1 Definition of seasons

All data reports use date of capture to sort catch records by time period, except the catch by fleet – quota year statistics. The quota year statistics use tow end date (farm purse seining) or trip end date (other methods) to define whether a catch falls within a particular season/fishing period.

2.2 Spatial definitions

Since the 2003 data exchange, raised catch or catch at size data have been provided by latitude/longitude grid cells (1x1 degrees for purse seine and 5x5 degrees for longline). This was made possible for the farm sector by the introduction of the SBT03 forms. The forms enable the linking of the Tow Cage Size Monitoring Database to the Daily Fishing Logs Database, thus providing capture location information for SBT transferred from tow cages. The Aggregated Catch and Effort Report also provides spatial information; all data for this report comes from the Daily Fishing Logs Database.

3 Data validation

3.1 Data management systems

AFMA maintains two systems for tracking catches of SBT in Australian waters. One system is on MS Excel spreadsheets and the other is AFMA's main Oracle database that stores all logbook and catch disposal records. These two systems are cross-referenced to ensure that data entry is correct in both systems. This process ensures validity and plausibility of data during the data entry process.

ABARES obtains copies of the AFMA Daily Fishing Logs Database and Catch Disposal Database and stores it in an SQL MI system on the Azure Cloud. It is these copies that are used for the preparation of the annual data submission.

3.2 Cross-verification of datasets

All Commonwealth authorised receivers of SBT are required to complete reconciliation sheets at the end of each season that are then cross-checked against catch disposal records and catch documentation scheme records. This is called the Audit Level 1.

There are a number of triggers (such as discrepancies in the Audit Level 1) that can trigger the Audit Level 2, which involves AFMA officers examining the books and invoices of the company involved.

During the preparation of the annual data submission, data from the Tow Cage Monitoring Database are cross-referenced with data from the Daily Fishing Logs Database and Catch Disposal Database to ensure accuracy of results. Any discrepancies are tracked down to original forms, if required.

Lengths and weights in the Tow Cage Monitoring Database are graphed to identify any outliers.

4 Closing remarks

The description of data preparation and submission in this report applies to the 2023 and 2024 commercial fishery catch and effort data supplied to the CCSBT. ABARES can provide more details of data collection and data processing methods upon request.

Appendix A: Example of scientific logbooks forms (AL06, TPB03A, PS01A)

Australian Fisheries Management Authority
Box 7051
Canberra Mail Centre ACT 2610

Australian Pelagic Longline Daily Fishing Log – AL06

NOTE: DO NOT USE A SINGLE PAGE FOR MORE THAN ONE TRIP

Original Copy – Send to AFMA

Boat Name Cormorant		Dist. Symbol LFB963		Log No.	Page No.
Port Departed SYDNEY		Date Departed 25 / 6 / 07		NON-FISHING PERIOD I did not work between 19 / 6 / 07 and 24 / 6 / 07	
Port Returned ULLADALLA		Date Returned 27 / 6 / 07		Non-Fishing Codes (PLEASE CIRCLE) 1 – Bad Weather 2 – In Port 3 – Broken Down 4 – Steaming 6 – Searching 5 – Other Fishery (SPECIFY) 10 – Refit	

SHOT INFORMATION		Shot 1	Date	Shot 2	Date	Shot 3	Date
Target species		Yellowfin, Bigeye		Yellowfin, Bigeye			
Start set time (24h)		0300		0230			
Start set	Lat. (dd mm)	33	35	36	31		
Position	Long. (ddd mm)	151	42	151	55		
End set time (24h)		0610		0515			
End set	Lat. (dd mm)	35	19	36	25		
Position	Long. (ddd mm)	151	40	151	40		
Start Haul time (24h)		1500		1300			
Start Haul	Lat. (dd mm)	35	20	36	20		
Position	Long. (ddd mm)	151	41	151	42		
End Haul time (24h)		2200		1900			
End Haul	Lat. (dd mm)	33	36	36	30		
Position	Long. (ddd mm)	151	40	151	56		
Vessel shooting speed (kn)		7		7			
Mainline length/Hooks		30 nm(km)	1000 hooks	25 nm(km)	700 hooks		
Line shooter used (CIRCLE)		Yes ☒ No ☐		Yes ☒ No ☐		Yes ☐ No ☐	
Seabird mitigation measures used (CIRCLE) (see template)		TORI CHUTE THAW CAPS PSBL DYED NSET OTHER LWEL NAPP		TORI CHUTE THAW CAPS PSBL DYED NSET OTHER LWEL NAPP		TORI CHUTE THAW CAPS PSBL DYED NSET OTHER LWEL NAPP	
Targeted depth (in metres)		30 min	100 max	30 min	100 max		
No. hooks between bubbles		6		6			
No. of lightsticks used		500		300			
Bait type(s)/source(s)/life status/weight(s) used for shot		SQO ☒ S ☐ L ☐ 50 Kg	SQO ☒ S ☐ L ☐ 35 Kg	B ☐ S ☐ L ☐ 35 Kg	B ☐ S ☐ L ☐ 35 Kg		
		MAY ☒ S ☐ L ☐ 50 Kg	PTL ☒ S ☐ L ☐ 45 Kg	B ☐ S ☐ L ☐ 45 Kg	B ☐ S ☐ L ☐ 45 Kg		

CATCH DETAILS		No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Discarded	DISCARD/RETAINED CODE	No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Discarded	DISCARD/RETAINED CODE	No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Discarded	DISCARD/RETAINED CODE
Yellowfin Tuna		11	350	GG	3	US	14	480	GG	1	DM					
Bigeye Tuna		4	150	GG			6	160	GG	4	TL					
Albacore Tuna		7	50	W			4	40	W							
Southern Bluefin Tuna																
Broadbill Swordfish							2	90	TR							
Striped Marlin		1	35	TR												
Shortbilled Spearfish																
Ray's Bream							3	10	GG							
Moonfish																
Ruddertfish																
Oilfish/Escolar																
Dolphinfish																
Wahoo																
Lancetfish					4	UM										
Short Finned Mako Shark		1	80	TR						1	US					
Bronze Whaler Shark																
Dusky Whaler Shark																
Blue Shark										4	UM					
Oceanic Whitetip Shark																

Other Species		No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Discarded	DISCARD/RETAINED CODE	No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Discarded	DISCARD/RETAINED CODE	No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Discarded	DISCARD/RETAINED CODE
Thresher shark										1	UM					
Yellowfin		4	60	GG		SD										
Bigeye		1	20	GG		SD										
Bigeye		3	25	W												

No Take Species	Species	Number Released		Number Released		Number Released	
		Alive	Dead	Alive	Dead	Alive	Dead
	Blue Marlin		1	1			
	Black Marlin						

Did you have an Observer on Board (circle) **No** / Yes Observer Trip ID

Please provide an estimate of the time taken to complete this form: **10** mins

Did you have an interaction with a Listed Marine or Threatened Species? (circle) Yes / **No**
Further details of all Listed Marine and Threatened Species interactions must be recorded on the Listed Marine and Threatened Species Form at the back of the logbook.

Concession holder or authorised agent - I certify that the information provided on this form is a true and accurate record.

Printed Name: **Tim Gardener**

Signature: **7 Gardener** Date: **27 / 6 / 07**

Comments: **5 fish damaged by sharks in first shot but fish still retained**

NOTE • If tagged fish / animals or banded birds are captured, please complete tag form at back of book and return to AFMA.

Australian Purse Seine and Pole Daily Fishing Log - For Southern Bluefin Tuna Only TPB03A

Australian Fisheries
Management Authority
Commonwealth of Australia

Log Book No: 001	Page No: 01	Boat Name: SARDINE	Dist. Symbol: LF8123		Fishing Method Used? (tick appropriate box) Purse Seining ☒ Poling ☐			
NON-FISHING CODES (NF) 1 Bad Weather 16 Shallowing 3 Broken Down 5 Searching 7 Cages Towing 4 Steaming 11 Other (Specify)			Trip Details Date Departed 15 / 1 / 16 Date Returned 20 / 1 / 16					
Date of Fishing	NF Code?	Fishing Details			Estimated Catch Details		Towing Details	
		Search Details	Start Time (24hr) (local time)	Latitude	Longitude	No. Poles (if applicable)	Species Name	Kgs Caught
		Hours Searched	Spotter Plane Used? (Y/N)					
15 / 1 / 16	4							
16 / 1 / 16		5	N	32°50'	-132°30'			
17 / 1 / 16	16							
18 / 1 / 16	16							
19 / 1 / 16		2	N	33°50'	131°20'			
19 / 1 / 16			N	33°54'	131°17'			
20 / 1 / 16	4							
1 / 1								
Comments:								
Did you have an interaction with a listed marine or threatened species? Please tick Yes ☐ No ☒ If yes, please enter details on a "Marine and Threatened Species" Form at the back of this book. NOTE: - If tagged fish / animals or banded birds are captured, please complete tag form at back of book and return form and tag to AFMA's agent.								
Master of the Boat (Skipper) - I certify that the information provided on this form is a true and accurate record. Printed Name: D. MATTHEW Signature: D. Matthew Date: 20 / 1 / 2016								

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Appendix B: Example Catch Disposal Forms (CR4A, SBT03B, SBT04B)

CR4A Form

Southern Bluefin Tuna Fishery
Catch Disposal Record

Book No.		Page No.	
----------	--	----------	--

Part A: SFR Holder or Authorised Representative to Complete

SFR Holder Tuna International P/L	Boat Name Hunter IV	Dist. Symbol 0999				
Area Fished ☐ Tas ☐ Vic ☒ NSW ☐ SA ☐ WA ☐ QLD						
Fishing Method ☐ Pole ☐ Purse Seine ☒ Longline ☐ Trolling						
Trip Start Date 8 / 7 / 04	Trip End Date 14 / 7 / 04	Please provide an estimate of the time taken to complete this form. Hrs. 5 mins				
Port Unloaded Tuncurry	Date Unloaded 14 / 7 / 04					
☒ Whole Catch Consigned ☐ Part Catch Consigned <table border="1" style="display: inline-table; margin-left: 10px;"> <tr> <td>Book No.</td> <td>Page No.</td> </tr> <tr> <td></td> <td></td> </tr> </table> Other CR4A details			Book No.	Page No.		
Book No.	Page No.					

Name of Receiver **Tuna Exporters P/L**

Name of Transporter Bradley Transport	Type of Vehicle Truck	Trailer Vehicle Reg YLT-091	Date/Time of Departure of Consignment from point of Unloading 14 / 7 / 04 15:30
---	---------------------------------	---------------------------------------	---

SOUTHERN BLUEFIN TUNA

Number of Fish	Total Accurate Weight Kg	Form Code
3	300	B

NORTHERN BLUEFIN TUNA

Number of Fish	Total Accurate Weight Kg	Form Code

I declare that the information I have provided in Part A to be a complete and accurate record.

SFR Holder or Authorised Representative

Printed Name

JOHN WELSH

Signature & Date

J. Welsh 14/7/04

Part B

I acknowledge that I have received for transportation the amount of fish referred to in Part A.

Printed Name of Driver

PETER BRADLEY

Signature & Date

Peter Bradley 14/7/04

Form Codes

- W** means Whole Weight – No Processing
- A** means SBT that has been gilled and gutted so that:
- the gill plates are removed; and
 - the tail is wholly removed.
- B** means SBT that has been gilled and gutted so that:
- the gill plates are not removed; and
 - the tail is not wholly removed.

Forward White copy to AFMA within 24 hours of unloading.

Leave Green copy in book.

Send the Blue and Yellow copies with the fish to the receiver of your fish.

SBT03B
Southern Bluefin Tuna Fishery
Farm Transit Log

 Log No: Page No:
Section 1

Carrier Boat Name MARY LOU	Dist. Symbol DE 123
Permit Holder A B CUTTER	Carrier Boat Permit Number 400100
Tow Cage ID Number T800	
Fish Received From ☒ Purse Seine Boat – Complete Sections 1, 2, 4 and 7, then Section 5 or 6	
Fish Received From ☐ Carrier Boat – Complete Sections 1, 3, 4 and 7, then Section 5 or 6	

Section 2**Transfer Details**

Name of Purse Seine Boat	Dist. Symbol	Date & Time First Transfer Started	Date & Time Last Transfer Finished	Estimate of Weight (Tonnes)	SBT02 Book No.	SBT02 Page No.
BLUE OCEAN	333	20 / 12 / 09 9:30	22 / 12 / 09 11:30	50	111	05

Section 3

Previous Carrier Boat Name 	Dist. Symbol
SBT03A Log No: Page No: 	A Record of Retained to Land Mortalities Recorded in Box "G3" of Previous SBT03B G1 A Record of Mortalities Recorded in Box "G" of Previous SBT03B E

Section 4**Record of Mortalities During This Tow**Date/Time **20 / 12 / 09 09:30**

Record a Date + Number of Mortalities for Each 24 hr Period.

Date	20/12	21/12	22/12	23/12	24/12			
Number	5	1	3	4	2			
Date								
Number								
Date								
Number								

Total Mortalities During This Tow

F **15**

Progressive Total of Mortalities (E & F = G)

G **15**

Total Mortalities Retained to Land During This Tow

G2 **4**

Progressive Total of Mortalities Retained to Land (G1 & G2 = G3)

G3 **4****Section 5****Tow Cage Transferred To Another Carrier Boat**

Carrier Boat Name MISTY MOON	Dist. Symbol FJ308
SBT03B Book No 333	SBT03B Page No 2
Date/Time Tow Cage Transferred 25 / 12 / 09 06:30	

Section 6**Fish Transferred To Fish Receiver**

Date/Time Transfer Ended / / :	Name of Fish Receiver Permit Holder 	Fish Receiver Permit Number
---	---	---

Section 7**I declare that the information which I have provided on this form to be a complete and accurate record.**

Carrier Boat Permit Holder or their Agent

Print Name JASON MANNING	Signature <i>J. Manning</i>	Date 25 / 12 / 09
--	--	---

SBT04B

Southern Bluefin Tuna Fishery
Farm Catch Disposal Record

Log No:	Page No:
---------	----------

Part 1

Fish Receiver Permit Holder Name	McNally Fresh Fish	Tow Cage ID Number	T600				
Fish Receiver Permit Holder Number	9999	Carrier Boat's SBT03B Log and Page No's	<table border="1"> <tr> <td>Log No:</td> <td>Page No:</td> </tr> <tr> <td>198</td> <td>15</td> </tr> </table>	Log No:	Page No:	198	15
Log No:	Page No:						
198	15						
Progressive total of all mortalities during tow (G = SBT03B)	A	17					
Total number of mortalities recorded from date of receipt of tow cage	B	2					
Record the number of retained to land mortalities from the date of receipt of the tow cage.	B1	2					
Transfer from Tow Cage to Farm							
Transfer Date	Farm Number Cage No.	Live Fish Count					
29/01/10	C01	4,802					
30/01/10	C02	1,098					
Total Number of mortalities $F = A + B + J$	F	35					
Total Weight of mortalities $H = F \times E$ (E: Average Weight in Kg)	H	638.75					
Total Weight of Fish in Kg $I = D + H$	I	108313.75					
Count Total	C	5,900					
Weight Total $D = C \times E$ (E: Average Weight in Kg)	D	107675					
I have had the opportunity to witness the verified count conducted by AFMA's Agent and I agree with and verify the count taken. I declare that the information which I provide on the form to be a complete and accurate record.							
Video Reference Number (1)	T600-1	FRP Holder	E. Watson				
No. of Videos viewed (2)	4						
Video Reference Date	2 / 2 / 10	FRP Signature	E. Watson				
		Date:	2 / 2 / 10				

Part 2 I authorize AFMA to deduct the SBT kilos of quota recorded in box I above from my/our quota holdings:

SFR Holder	A. Brazil	SFR Signature	A. Brazil	Date:	2 / 2 / 10
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Part 3

Purse Seine Boat Name	Boat 1	Boat 2	Dist. Symbol	Boat 1	Boat 2
TUNA 1			0253		
SBT02	Log No:	Page No:	Log No:	Page No:	
	12	4			
Progressive total of retained to land mortalities during tow (G3=SBT03B)	A1	3	J	16	Number of mortalities during pursing and transfer to tow cage
			J1	1	Number of mortalities retained to land during pursing and transfer to tow cage
Average Weight sample from Tow Cage					
Sample Date	Name of Person Sampling		Signature of Person Sampling		
28 / 1 / 10	T. Smith		T. Smith		
Average Weight in Kg	No. of Fish taken from tow cage	Farm Stocking Form No.	Boat 1	Boat 2	
E 18.25	42	FSAU 10 00101			
I declare that the information which I provide on the form to be a complete and accurate record.					
AFMA Agent's Name	T. Poppy	AFMA Agent's Signature	T. Poppy	Date: 3 / 2 / 10	

Appendix C: Tow cage size monitoring report

Southern Bluefin Tuna Fishery Farm Catch per Tow Cage

Tow Identification				
Tow Cage ID	_____	Catch Disposal Form	Book No. Page No.	
Tow Number for Season	_____	Fish Receiver Number:	_____	
Catch Information				
Catcher Vessel	AFMA Forms			
Capture location				
Date of First Transfer to Tow Cage				
Date of Last Transfer to Tow Cage				
Tow Vessel	_____	Total Weight of Fish Captured in this Tow Cage:	_____ #Type!	
Date Tow Ended	_____	Estimated Weight (kg):	_____	
Number of Mortalities during Catching	_____	Total Number of Mortalities:	_____	
Number of Mortalities during Tow	_____	Total Number of Fish:	_____	
Number of Mortalities between end of Tow and Release to Farm	_____			
Average Weight Sample Information				
Sample Date	Witnesses	Average Length	Average Weight	
Fish Count Information				
Transfer Date	Video Count	Tonnage	Static Cage ID	Static Cage Owner
		#Type!		
Total number of live fish counted:	0	0		

Data preparation



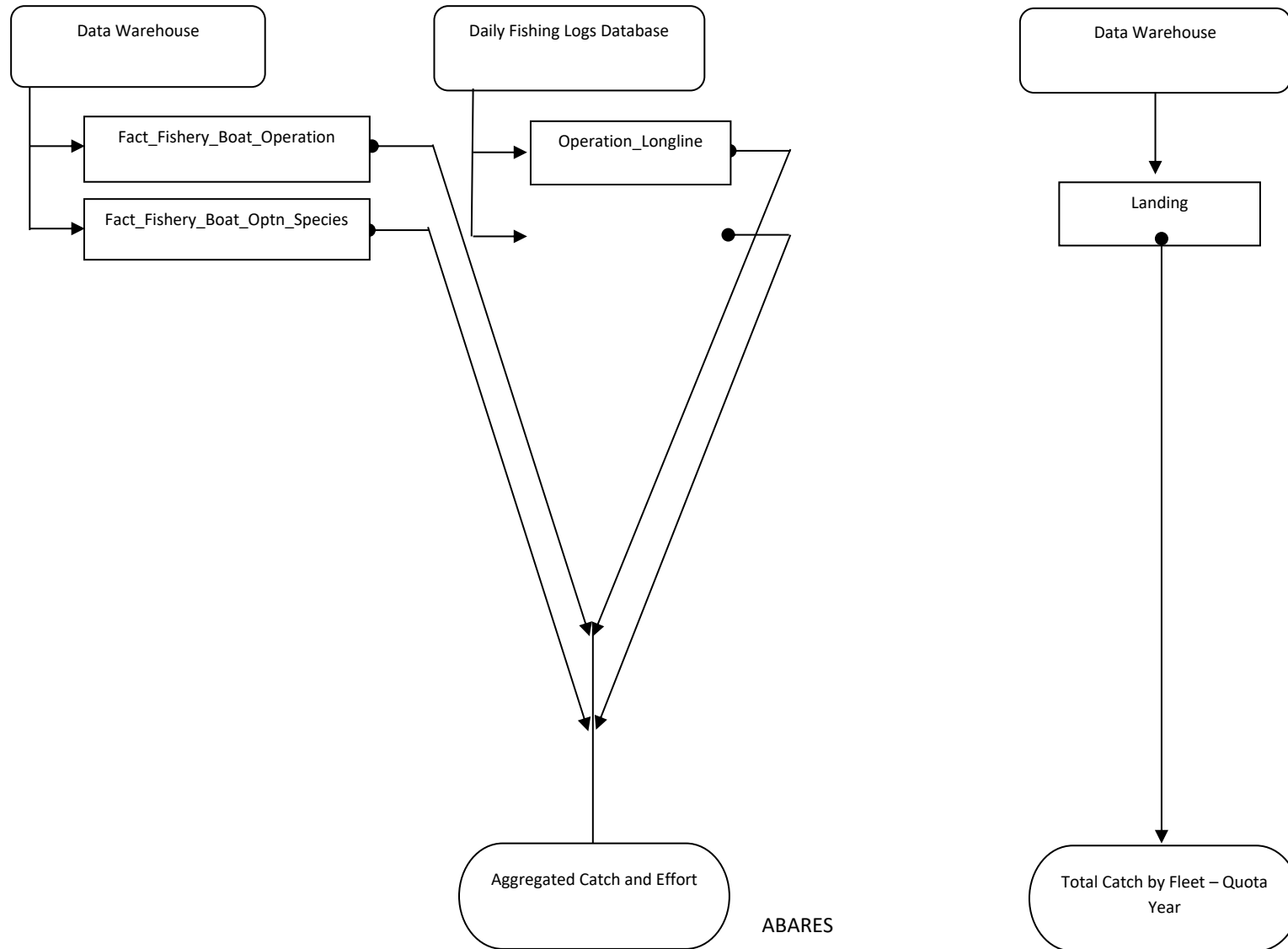
Tow Identification

Tow Cage ID	_____	Catch Disposal Form	_____	Book No.	Page No.
Tow Number for Season	_____	Fish Receiver Number:	_____		

Average Weight Data

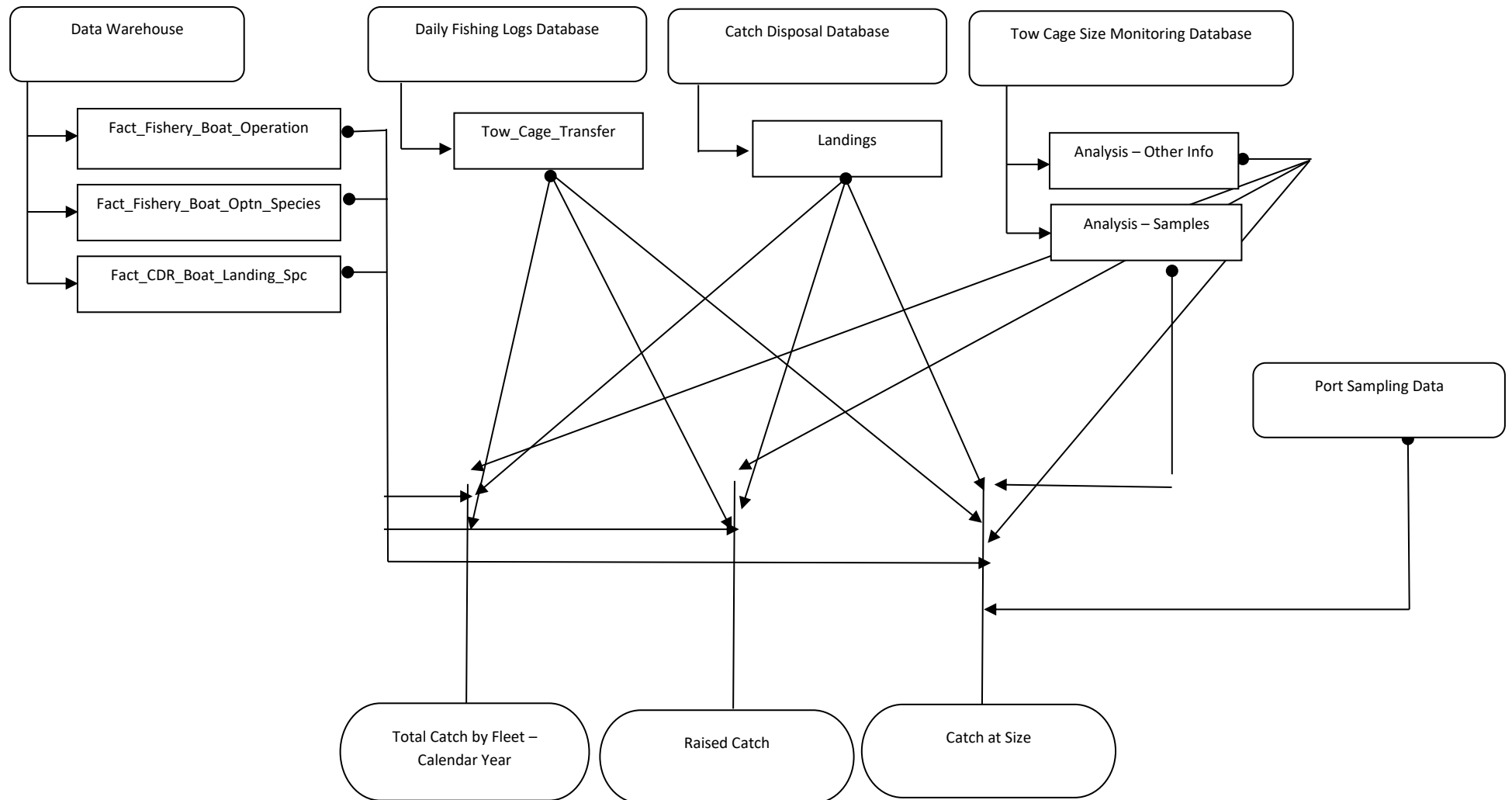
	40 Fish Sample			Number of Under 10kg Fish	
Weight	Length	Tag		Under 10kg Fish	
				Weight	Length

Appendix D: Flow of Data from Data Sources to Reports

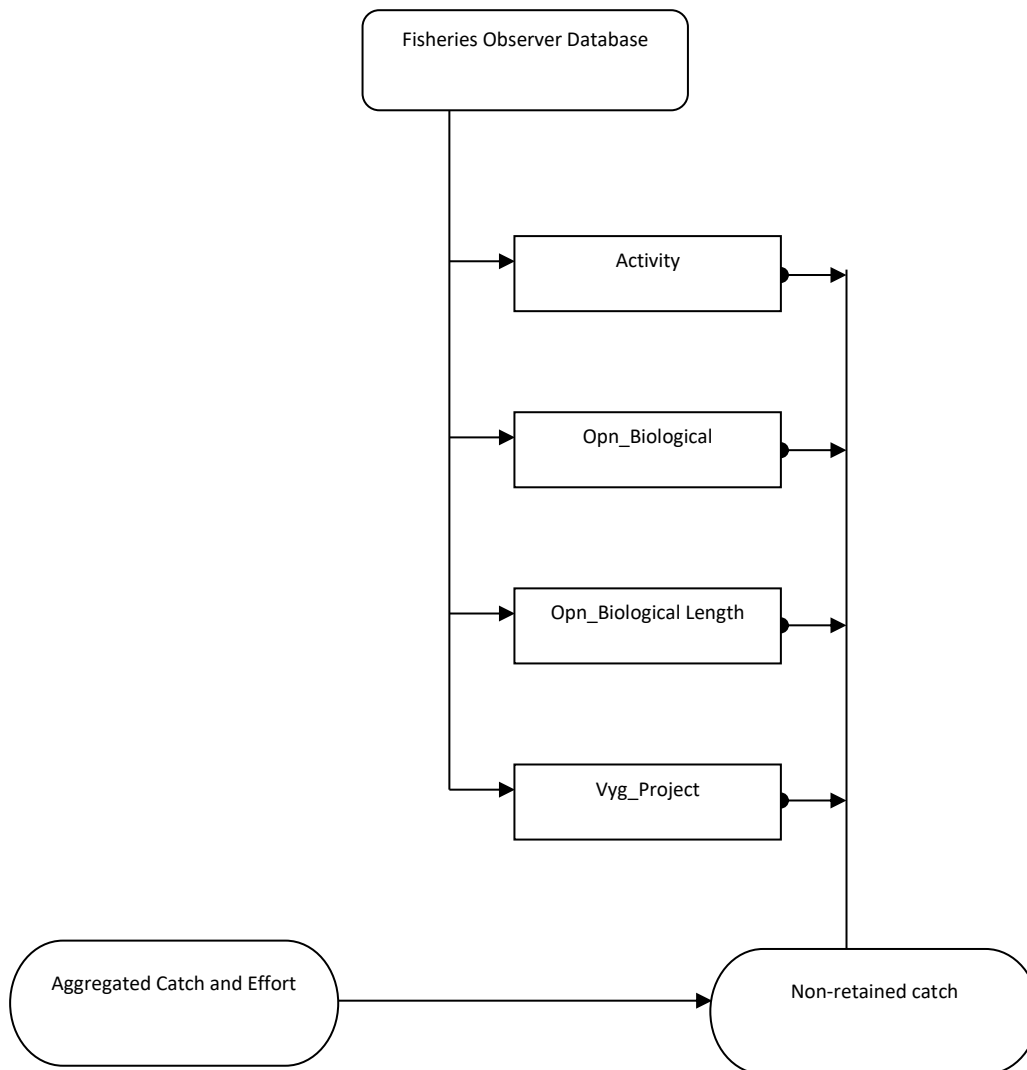


ABARES

Data preparation



Data preparation



References

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