



**Australian Government**  
**Bureau of Rural Sciences**

**PREPARATION OF THE BRS COMPONENT OF  
AUSTRALIA'S DATA SUBMISSION FOR 2006**

by

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## 1. Introduction

The Bureau of Rural Sciences, within the Australian Government Department of Agriculture, Fisheries and Forestry, provides data reports each year to the CCSBT as part of the annual data exchange. In April 2006, BRS submitted the following reports to the data exchange.

1. Aggregated catch and effort data 2005 and 2004
2. Raised Catch 2005 and 2004
3. Total Catch by Fleet 2005 and 2004 (quota and calendar year)
4. Catch at Size data 2005
5. Catch at Size data 2004 (revised)
6. Catch at Size data 2003 (revised)
7. Catch at Size data 2002 (revised)
8. Non-retained catches 2002-2005

Revision of the Catch at Size data for the years 2002 to 2004 was necessary due to changes in the method of determining the sample size for farm tow cage fish. See Section 3 below for more detail of the revision process.

Reports are also provided directly to the data exchange by CSIRO, the preparation of which is covered in a separate paper.

## 2. Data Sources

There are five sources of data required to produce the data reports. These are: Daily Fishing Logs Database; Catch Disposal Database; Tow Cage Size Monitoring Reports and the Longline Fishery Size Monitoring Reports; and Fisheries Observer Database.

### 2.1. Daily Fishing Logs Database

The Daily Fishing Logs Database is maintained by the Australian Fisheries Management Authority (AFMA) and contains data collected from scientific logbooks that fishers are required to complete. The logbooks of relevance to SBT catch for the 2006 submission were the AL05 (longline and minor line), OT03 (minor line), PS01 (purse seine), TPB02 and TPB03 (purse seine and pole). See Appendix 2 for samples of these 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:

1. **Operations** – contains information on each operation, including start latitude, start longitude and vessel identifier.
2. **Catch** – contains a separate record for each species caught, together with the number of fish caught and estimated weight of the catch.
3. **Fishing Effort** – contains fishing method used and fishing effort information, eg number of hooks for longline operations; search hours for purse seine operations.
4. **Operation\_Longline** – contains other information on longlining operations, eg length of mainline.

5. **Operation\_Pole** – contains other information on poling operations, eg number of poles used.
6. **Vessel** – contains information on each licensed vessel; vessel name is used to identify individual vessels when determining the number of boats that fished.
7. **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.

## *2.2. Catch Disposal Database*

This is the database AFMA uses for quota monitoring and contains data collected from the SBT03A (SBT Farm Transit Log; purse seining for farms), CR4A (SBT Catch Disposal Record; all methods except purse seining for farms) and SBT04A (SBT Farm Catch Disposal Record; purse seining for farms). See Appendix 3 for samples of these forms. The following tables are required from this database:

1. **Catch Disposal** – contains information on trip start and end dates.
2. **Landing** – contains information on species caught, numbers of fish caught and weight of catch.
3. **Fishing\_Method** – provides the fishing method information.
4. **Tow\_Catch\_Transfer** – contains identification of capture vessel for purse seine operations.

## *2.3. Tow Cage Size Monitoring Reports*

Tow cage size monitoring data is collected by Protec Marine 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. Fish from the tow cage are sampled until forty fish of 10 kg or more are measured and weighed. The reports list the weight and length of all fish sampled, including fish smaller than 10 kg, and the total number of fish transferred to the farm cage. A sample of one of these reports is given in Appendix 4. Data from these reports are collated to produce a table of statistics for each tow cage, named OtherInfo, which is used in preparation of Raised Catch and Total Catch by Fleet reports. The raw lengths and weights of all sampled fish for the year are compiled in a spreadsheet and used in conjunction with the Daily Logs data to prepare the Catch at Size report.

## *2.4. Longline Fishery Size Monitoring Reports*

These data are provided by WW Fisheries Pty Ltd, a company contracted to AFMA and are collected onshore at processing establishments. The reports include the length and weight information for non-farm fish, all caught by longline in 2004 and 2005. This report is used to determine the Catch at Size data for longline operations.

## *2.5. Fisheries Observer Database*

AFMA employs fisheries observers to collect data on board fishing vessels in a number of domestic fisheries and opportunistically on the high seas. Observer coverage of pelagic longline vessels has been variable over the period 2001 to 2006, mainly concentrated in the eastern EEZ. There has been limited coverage of longline fisheries in the southern and western EEZ and minimal purse seine coverage. A

database of observed fishing operations is maintained by AFMA, including records of retained and discarded catch and biological data collection. The AFMA observer data was used to produce the report Non-retained Catches 2002-2005. This report provided only numbers of non-retained fish observed in the longline fishery and was not raised or imputed from logbook data. The total longline fishing effort for each five degree cell is provided from the Aggregated Catch and Effort report with the corresponding observed effort and non-retained catch. The following observer database tables contributed data to the Non-retained Catches report:

1. **Activity\_Log** – describes vessel activity eg setting, hauling, searching and time, location, environmental conditions.
2. **Voyage** – details of observer cruise including vessel identifier.
3. **Voyage\_Gear\_Items** – contains values of attributes for each fishing operation eg number of hooks deployed.
4. **Bio\_Collection** – describes biological attributes of animals caught including life status of retained and discarded fish

### **3. Data Preparation**

Raw data files of database tables from the AFMA Daily Fishing Logs, Catch Disposal Records and Observer databases are acquired late in the first quarter of each calendar year. The data are loaded into an Oracle relational database server to enable analysis using Structured Query Language (SQL) via Microsoft Access software on client workstations. The data sets acquired in Excel workbook format ie Tow Cage Size Monitoring Reports and Longline Fishery Size Monitoring Reports are processed at least partly in Excel and some output data imported to Access for combination with database output. Standard queries and procedures have been established to produce the data reports that BRS submits each year. These queries may require minor modification each year as changes are made to the source data collection process or CCSBT requirements.

See Appendix 1 for flow diagrams of data sources and tables used to produce the various reports.

#### *3.1. 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.

#### *3.2. Spatial Definitions*

The 2003 submission was the first time that raised catch or catch at size data were provided by latitude/longitude grid (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 Tow Cage Size Monitoring Reports to the Daily Fishing Logs Database, thus providing capture location information. The Aggregated Catch and Effort Report also provides spatial information, all data for this report coming from the Daily Logs Database.

### *3.3. Revision of catch at size data for purse seine fishery*

In 2006, BRS modified the procedure for calculating Catch at Size data from information in the Tow Cage Size Monitoring Reports. The change related specifically to including all fish measured and weighed in the process of obtaining forty fish over 10 kg for quota monitoring. In past years, sample size for Catch at Size purposes was maintained at forty fish by excluding measurements of some fish over 10 kg and including all measured fish less than 10 kg. In the last season, the number of small fish sampled made that approach unworkable due to excessive skewing of the sample towards small fish. Revision of Catch at Size reports was conducted for years 2002 to 2004 and new reports submitted in the 2006 data exchange. See Appendix 5 for details as supplied to the data exchange email list in April.

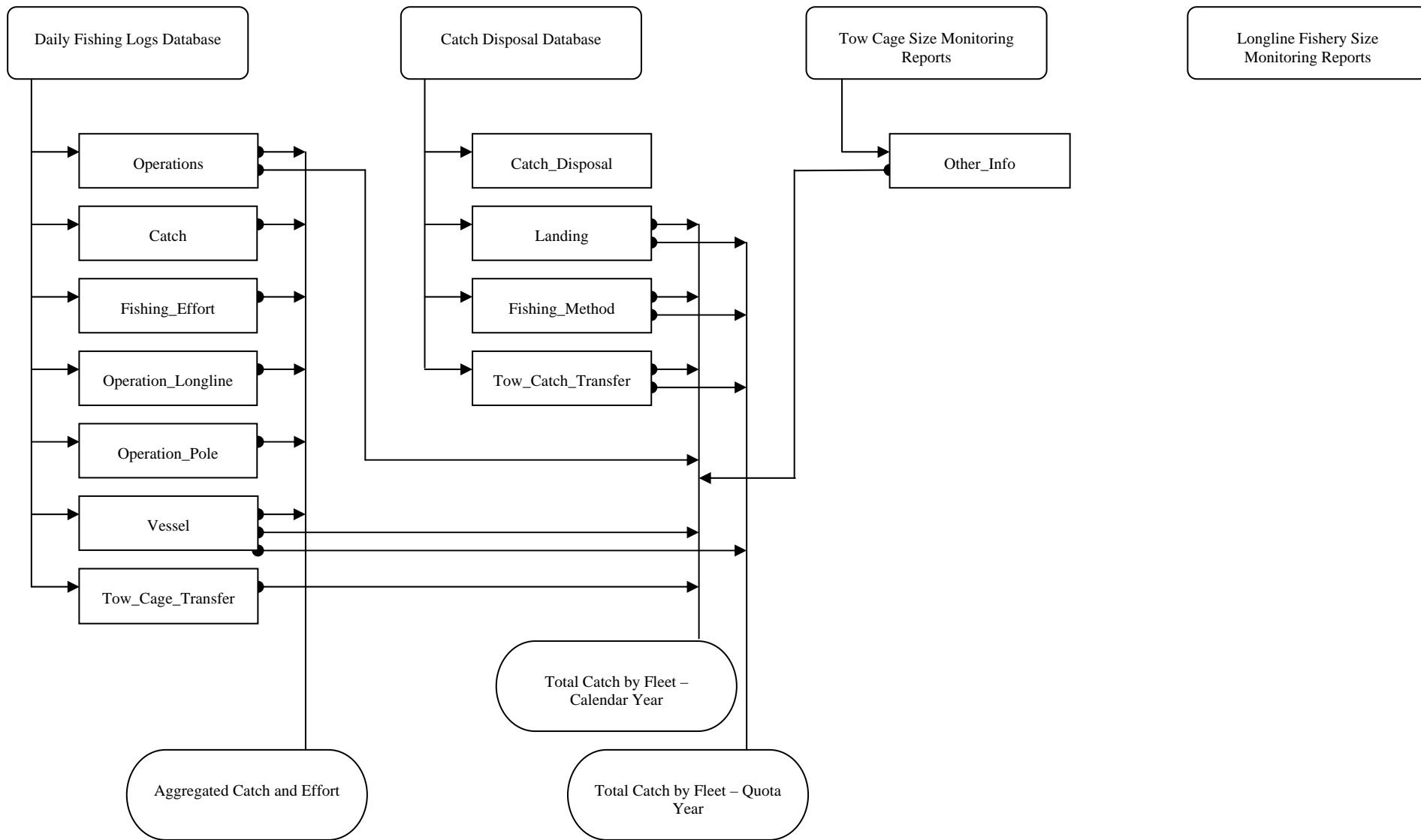
### *3.4. Correction of size details for 2004*

One purse seine shot in March 2004 captured larger fish than those targeted for the SBT farms. These 242 fish were not transferred to a tow cage, but processed for export. At the time of compilation of the 2005 data submission, only an average weight was available for these fish and therefore only a single converted length value could be provided for this component of the Catch at Size file. Individual weights were obtained later in 2005 for the consignments involved and the calculated lengths have now been used to replace values in the revised data file submitted in 2006.

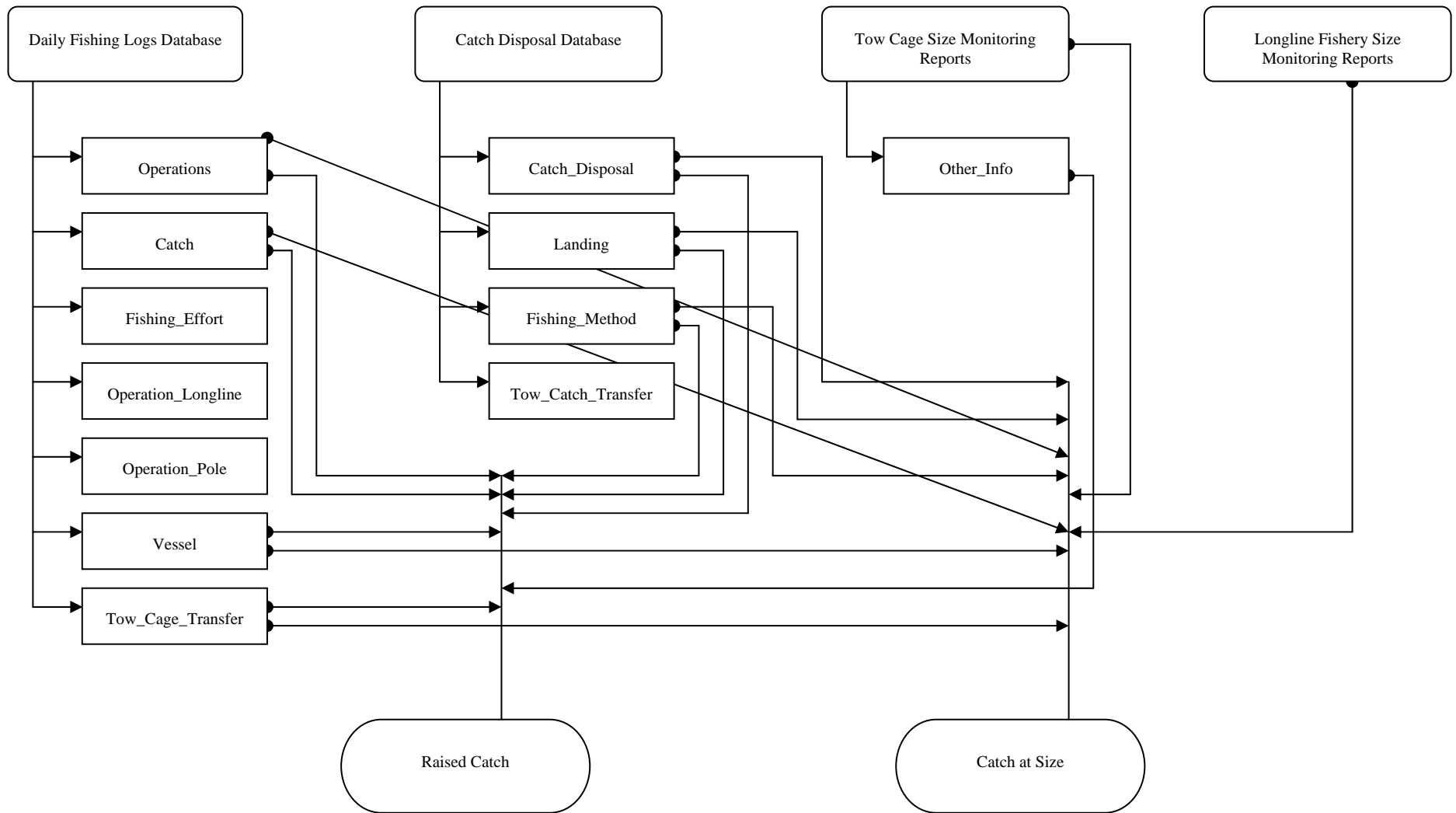
## **4. Closing Remarks**

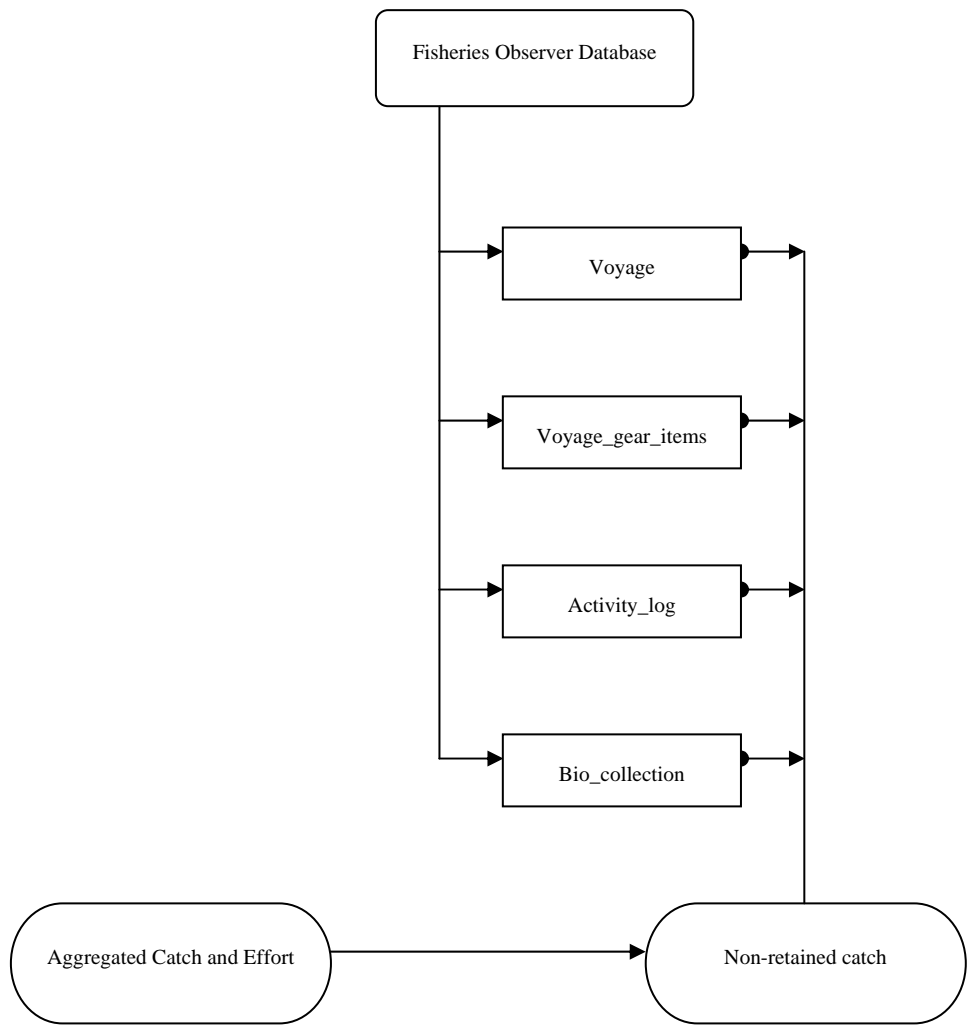
The description of data preparation and submission in this report applies to the 2004 and 2005 data supplied to CCSBT. A more detailed description of the fields within the data sources can be obtained

## **Appendix 1: Flow Charts Showing Flow of Data from Data Sources to Reports**









**Appendix 2: Scientific Logbook Forms (AL05, OT03, PSP01, TPB02  
and TPB03)**

# Australian Pelagic Longline Daily Fishing Log – AL05

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

Original Copy – Send to AFMA

Log No.	Page No.	Boat Name <b>Cormorant</b>	Dist. Symbol <b>LFB963</b>	Time Zone Fished <b>EST</b>	Departure Port <b>ULLADULLA</b>										
					Departure Date <b>12/6/00</b>										
<b>SHOT INFORMATION</b>		Shot 1 Date <b>13/6/02</b>	Shot 2 Date <b>15/6/02</b>	Vessel docked between <b>9/6/02</b> and <b>11/6/02</b>											
Start Set Time (24h) <b>0300</b>				Non-fishing Date/s and Codes during a Trip (ENTER CODE IN BOX)											
Start Set	Lat. (dd mm) <b>35 35</b>	Start Set		1 – Bad Weather      3 – Broken Down      4 – Steaming											
Position	Long. (ddd mm) <b>151 42</b>	Position		6 – Searching      5 – Other Fishery (SPECIFY)											
End Set Time (24h) <b>0610</b>		End Set Time (24h) <b>0515</b>		Date/s	Code										
End Set	Lat. (dd mm) <b>35 19</b>	End Set		<b>12/6/02</b> to / /	<b>4</b>										
Position	Long. (ddd mm) <b>151 40</b>	Position		<b>14/6/02</b> to / /	<b>6</b>										
Mainline Length No. hooks <b>35 nm(km) 900</b> hooks		Mainline Length No. hooks <b>27 nm(km) 800</b> hooks		/ / to / /											
Line shooter used (CIRCLE) <input checked="" type="radio"/> Yes <input type="radio"/> No		Line shooter used (CIRCLE) <input checked="" type="radio"/> Yes <input type="radio"/> No		Comments											
Seabird Mitigation Measures Used (CIRCLE) <input checked="" type="radio"/> TORI <input checked="" type="radio"/> THAW <input type="radio"/> PSBL <input type="radio"/> NSET <input type="radio"/> LWEL <input type="radio"/> CHUTE <input type="radio"/> CAPS <input type="radio"/> DYED <input type="radio"/> OTHER <input type="radio"/> NAPP		Seabird Mitigation Measures Used (CIRCLE) <input checked="" type="radio"/> TORI <input checked="" type="radio"/> THAW <input type="radio"/> PSBL <input type="radio"/> NSET <input type="radio"/> LWEL <input type="radio"/> CHUTE <input type="radio"/> CAPS <input type="radio"/> DYED <input type="radio"/> OTHER <input type="radio"/> NAPP		<b>Snood cut to release large, lively blue marlin. Discards refer to fish not sought by market.</b>											
Gear Information	Estimated average depth targeted in metres <b>80</b>	Estimated average depth targeted in metres <b>70</b>		Minor Line Methods Used											
	No. hooks between bubbles <b>9</b>	No. hooks between bubbles <b>10</b>		Trolling <input checked="" type="checkbox"/> Hrs <b>2</b>	Complete at End of Trip Port of Landing <b>ULLADULLA</b>										
	No. of lightsticks used <b>300</b>	No. of lightsticks used <b>400</b>		Rod & Reel <input type="checkbox"/> Hrs											
	Bait type/wt used for shot <b>Squid/Pilchards 200 kg</b>	Bait type/wt used for shot <b>Pilchards 160 kg</b>		Handline <input type="checkbox"/> Hrs	Trip End Date <b>15/6/00</b>										
	Bought <input checked="" type="checkbox"/> Self caught <input type="checkbox"/>	Live bait <input type="checkbox"/> Dead bait <input checked="" type="checkbox"/>	Live bait <input type="checkbox"/> Dead bait <input checked="" type="checkbox"/>	No. of Lines Used? <b>2</b>	First Receiver/s of Fish <b>ULLADULLA CO-OP</b>										
	Sea surface temp. (C) <b>17</b>	End Set <b>18</b>	Start Set <b>16</b>	End Set <b>16</b>	See writing template for a list of FORM CODES – to be entered with each shot.										
Wind direction (ie. NW) <b>S</b>	<b>SSE</b>	<b>SW</b>	<b>WSW</b>	MITIGATION MEASURES CODES											
Wind speed (kn) <b>12</b>	<b>15</b>	<b>8</b>	<b>12</b>	TORI = bird scaring line & pole											
Catch Details Tick box below to show target species		No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Not Kept	No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Not Kept	No. Fish Kept	Est. Processed Wt Kept (kg)	Form Code	No. Fish Not Kept	Please provide an estimate of the time taken to complete this form ..... mins	
Yellowfin Tuna <input checked="" type="checkbox"/>		<b>11</b>	<b>350</b>	<b>GG</b>	<b>3</b>	<b>14</b>	<b>480</b>	<b>GG</b>	<b>1</b>	<b>3</b>	<b>60</b>	<b>GG</b>			
Bigeye Tuna <input checked="" type="checkbox"/>		<b>4</b>	<b>150</b>	<b>GG</b>		<b>6</b>	<b>160</b>	<b>GG</b>							
Albacore <input type="checkbox"/>		<b>7</b>	<b>50</b>	<b>W</b>		<b>4</b>	<b>40</b>	<b>W</b>		<b>2</b>	<b>15</b>	<b>W</b>			
Southern Bluefin Tuna <input type="checkbox"/>															
Broadbill Swordfish <input type="checkbox"/>						<b>2</b>	<b>90</b>	<b>TR</b>							
Striped Marlin <input type="checkbox"/>		<b>1</b>	<b>35</b>	<b>TR</b>											
Ray's Bream <input type="checkbox"/>					<b>2</b>	<b>3</b>	<b>10</b>	<b>GG</b>							
Northern 'Jumbo' Bluefin Tuna <input type="checkbox"/>															
Short Finned Mako Shark <input type="checkbox"/>		<b>1</b>	<b>80</b>	<b>F</b>											
Bronze Whaler Shark <input type="checkbox"/>															
Dusky Whaler Shark <input type="checkbox"/>															
Blue Shark <input type="checkbox"/>					<b>7</b>				<b>4</b>						
Oceanic Whitetip Shark <input type="checkbox"/>															
Blacktip Shark <input type="checkbox"/>															
Tiger Shark <input type="checkbox"/>															
Hammerhead Shark <input type="checkbox"/>															
Silky Shark <input type="checkbox"/>															
Porbeagle Shark <input type="checkbox"/>		<b>2</b>	<b>90</b>	<b>TR</b>											
Rudderfish <input type="checkbox"/>		<b>2</b>	<b>10</b>	<b>GG</b>		<b>1</b>	<b>30</b>	<b>TR</b>							
Oilfish <input type="checkbox"/>						<b>1</b>	<b>4</b>	<b>GG</b>							
Escolar (Black Oilfish) <input type="checkbox"/>		<b>3</b>	<b>25</b>	<b>GG</b>											
Dolphinfish <input type="checkbox"/>									<b>1</b>						
Wahoo- Sunfish <input type="checkbox"/>						<b>1</b>									
Lancetfish <input type="checkbox"/>						<b>3</b>									
Moonfish <input type="checkbox"/>															
Thresher Shark <input type="checkbox"/>		<b>1</b>	<b>50</b>	<b>TR</b>		<b>1</b>	<b>10</b>	<b>F</b>							
Species		Number Released		Number Released		Number Released		Number Released		Number Released		Number Released			
		Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead		
Blue Marlin		<b>1</b>													
Black Marlin															
Great White Shark															
Grey Nurse Shark															
Shot No.		Species Group eg. seabird, cetacean, turtle OR Species (if known)	No. Released		Position Caught		No. Caught During		Estimated Time of						
			Alive	Dead	Lat. (dd mm) / Long. (ddd mm)	Set	Haul	Interaction							
<b>1</b>		<b>Loggerhead Turtle</b>	<b>1</b>		<b>35° 24'S 151° 41'E</b>	<b>N/A</b>		<b>N/A</b>							
<b>2</b>		<b>Albatross</b>		<b>1</b>	<b>36° 29'S 151° 52'E</b>	<b>1</b>		<b>0700</b>							
COMMENTS – Is there anything else that you consider to be important? eg. gear failure, tag or band numbers, was the animal hooked or entangled, etc.															
Shot No. <b>2</b> . Hooked in beak - Bird drowned, carcass discarded. Band no. and further details recorded on Tag Form. Photos provided with logsheets. Turtle released alive, trace cur at hook.															
Tag / Band No: <b>A754L</b>															

I certify the information which I have provided on this form to be a complete and accurate record.

Concession Holder or Authorised Person	Printed Name <b>TIM GARDENER</b>	Signature <i>T. Gardener</i>	Date <b>15/6/02</b>
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NOTE • If tagged fish / animals or banded birds are captured, please complete tag form at back of book and return to AFMA.

# Australian Tuna Minor Line Daily Fishing Logbook - OT03

Form Codes: W = Whole; G = Gilled & Gutted; H = Headed; F = Filled; T = Trunk (headed & gutted).

Log No: 0333009 Date: 8/10/96 Boat Name: Hot Tuna Dist. Symbol: LFB139 Master's Name: C. Gavin

Page No: 8/10/96 Boat Name: Hot Tuna Dist. Symbol: LFB139 Master's Name: C. Gavin

1 did not work between 3, 9, 1, 96 and 7, 1, 1, 96 due to: NON-FISHING CODE (TICK APPROPRIATE BOX)

**FISHING DETAILS**

Area Fished: Latitude 37° Longitude 152° 50'

Minor Line Method(s) Used Today (tick appropriate boxes)

Handline  No. Lines \_\_\_\_\_ Hrs. \_\_\_\_\_  
 Trolling  No. Lines 4 Hrs. 4.5  
 Rod & Reel  No. Lines 2 Hrs. 6  
 Other Method? \_\_\_\_\_ No. Lines \_\_\_\_\_ Hrs. \_\_\_\_\_  
 (list here)

**Poling Details** (if applicable)  
 No. Poles Used? \_\_\_\_\_ Type used (ie. single/double)? \_\_\_\_\_  
 Hours Searched? \_\_\_\_\_ Poling Start Time (24 hr) \_\_\_\_\_ Hours Fished? \_\_\_\_\_

Were you assisting a Seine boat during your fishing? (Y/N) \_\_\_\_\_  
 Dist. Symbol of assisted seine boat? \_\_\_\_\_

**Bait Details** - list bait types used today & tick appropriate boxes

Lures Used?  Bait Purchased?   
 Live Bait Used?  Bait caught by self?   
 Dead Bait Used?

Type Yellowtail Qty 20 kg  
 Type \_\_\_\_\_ Qty \_\_\_\_\_ kg  
 Type \_\_\_\_\_ Qty \_\_\_\_\_ kg

**TOTAL CATCH FOR THE DAY**

Species Code <small>see list on back of winning template</small>	No. of Fish caught and kept (kg)	Estimated Total Weight caught and kept (kg)	No. of Fish Returned to Sea.
YFT	12	21	1
ALB	15	9	3
SKT	7	45	5
DOL	5	30	2

**LANDING DETAILS** (Include Total Verified Weights for each species landed. Don't forget to add form codes for these weights - these are listed at the top right of this page.)

Port of Landing:	Verified Weights		Form Code
	Export Wt (kg)	Domestic Wt (kg)	
Coffs Harbour	49	14	9
		10	9
		53	9
		28	9

Date of Landing: 7/10/9  
 Fish Sold To: Coffs Co-op.  
 Sydney Fish Market

Comments: Weather very calm. Found a current line about 10km offshore. Hops of fish on surface all day.

**Wildlife Interactions**

Number Caught	Life Status on release (codes on hold-out flap)	Other Comments - include species names if possible, as well as details of the interaction (eg. whether animals hooked, entangled, stealing fish etc)
		Saw 3 - 4 whales around 10 km offshore from Coffs. I think they were humpbacks.

**Master's Signature:** I certify that the information I have provided on this form is a complete and accurate record.  
 Date: 7/10/9  
 C. Gavin

WHITE COPY - send to AFMA BLUE COPY - retain for your records





# Australian Purse Seine and Pole Daily Fishing Log - For Farmed Southern Bluefin Tuna Only TPB03

Australian Fisheries Management Authority, Commonwealth of Australia

Log Book No: **0026** Page No: **02** Boat Name: *Sea Spray* Dist. Symbol: *LFB 12345* Master's Name: *C. Gavin*

TICK APPROPRIATE NON-FISHING (NF) CODE BOX AT RIGHT: 1 Bad Weather  2 In Port  3 Broken Down  7 Cage Towing  Poling  Purse Seining

I did not work between 28/5/98 and 28/11/98 4 Steaming  10 Refit

Distinguishing Nos. of assisting vessels  
NB: State whether pole or seine boats

*LFB023 (pole boat)*

Date of Fishing (day/month)	NF Codes?	Search Details				Fishing Details				Total Weight and Type of Bait			Estimated Catch Weights per Shot (kg)				Towing						
		Hours Searched	Spotter Used? (Y/N)	Sea Surface Used? (Y/N)	Start Time (24hr local time)	Latitude	Longitude	No. Poles Used?	Pole Boat Assisted? (Y/N)	Seine Boat Assisted? (Y/N)	Type	Kgs	SBT Weight	Other Species	Other Weight	Estimated % of school caught	Carrier Boat Name	Weight Transferred	Transfer Date	SBT 03 Book No.	Page No.		
29/11	6	4			20	1300	32°40'	132°30'	4			4			8,000	-	-	90	Star	8,000	29/11	036	09
30/11	4																						
1/12		4	N		21	1200	37°05'	131°08'	4			4			15,000	-	-	95	Jane S.	15,000	1/12	024	36
2/12		5	4		19	1100	33°50'	131°20'	N						25,000	-	-	70	"	25,000	2/12	024	36
2/12		2	4		19	1600	33°54'	131°17'	4			4			12,000	-	-	80	"	12,000	2/12	024	36

Comments:

**Wildlife Interactions:**  
List any wildlife interacting with you during your fishing activities, including netted animals. If possible, list Species name, Interaction Date, No. of Animals and Life Status of any animals released after capture. Life Status Codes are listed on the writing template. Please record any extra details in the Comments section.

Species: \_\_\_\_\_ Date/s: \_\_\_\_\_ Qty: \_\_\_\_\_ Life Status: \_\_\_\_\_

Name: **C. GAVIN** Signature: *C. Gavin*

Dated: 3/12/98

Concession Holder or Authorised Person:  
I certify that the information I have provided on this form is a complete and accurate record.

WHITE COPY - send to AFMA BLUE COPY - retain for your records

Note: There are tagged fish/wildlife recapture forms at the rear of this book.



**Appendix 3: Catch Disposal Forms (CR4A, SBT03A, SBT04A)**

**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**

Port Unloaded **Tuncurry** Date Unloaded **14 / 7 / 04**

Whole Catch Consigned  Part Catch Consigned

Book No.  Page No.  Other CR4A details

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
<b>3</b>	<b>300</b>	<b>B</b>

NORTHERN BLUEFIN TUNA		
Number of Fish	Total Accurate Weight Kg	Form Code

**Form Codes**

**W** means Whole Weight – No Processing

**A** means SBT that has been gilled and gutted so that:

a. the gill plates are removed; and

b. the tail is wholly removed.

**B** means SBT that has been gilled and gutted so that:

a. the gill plates are not removed; and

b. the tail is not wholly removed.

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

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.

**SBT03A**  
**Southern Bluefin Tuna Fishery**  
**Farm Transit Log**

Log No:	Page No:
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Carrier Boat Name	MARY LOU	Dist. Symbol	DE 123
Permit Holder	A B CUTTER	Carrier Boat Permit Number	400100
Tow Cage ID Number	T600		
Fish Received From	<input checked="" type="checkbox"/> Purse Seine Boat – Complete Sections 1 and 3 then 4 or 5		
Fish Received From	<input type="checkbox"/> Carrier Boat – Complete Sections 2 and 3 then 4 or 5		

Section 1		Transfer Details		Estimate of Weight (Tonnes)	SBT02 Book No.	SBT02 Page No.
Name of Purse Seine Boat	Dist. Symbol	Date & Time Last Transfer Finished				
BLUE OCEAN	333	20/ 12 / 04 9:30		50	111	05

Section 2		Dist. Symbol	
Previous Carrier Boat Name			
SBT03A Log No:	Page No:	A Record of Mortalities Recorded in Box "G" of Previous SBT03A	E

Section 3		Record of Mortalities During This Tow							
Date/Time Tow Started		Record a Date + Number of Mortalities for Each 24 hr Period.							
22/ 12 / 04 8:30		22/12	24/12	25/12	28/12				
		10	5	1	1				
Total Mortalities During This Tow	F	17							
		Progressive Total of Mortalities (E & F = G)							
		G 17							

Section 4		Tow Cage Transferred To Another Carrier Boat	
Carrier Boat Name		Dist. Symbol	
SBT03A Book No		SBT03A Page No	
		Date/Time Tow Cage Transferred	/ / :

Section 5		Tow Cage Transferred To Fish Receiver	
Date/Time Tow Ended	29/ 12 / 04 11:30	Name of Fish Receiver Permit Holder	McNALLY FRESH FISH
		Fish Receiver Permit Number	9999

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

Carrier Boat Permit Holder or Person Acting on their Behalf

Print Name	B. BOXALL	Signature	B. Boxall	Date	29 / 12 / 04
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**SBT04A**  
**Southern Bluefin Tuna Fishery**  
**Farm Catch Disposal Record**

Log No:	Page No:
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**Part 1**

Fish Receiver Permit Holder Name	McNally Fresh Fish	Tow Cage ID Number	T600
Fish Receiver Permit Holder Number	9999	Carrier Vessel SBT03A Log and Page No	Log No: 198 Page No: 15

Progressive Total of mortalities during tow (G = SBT03A) **A** 17

Number of mortalities recorded from date of receipt of tow cage **B** 8

**Transfer from Tow Cage to Farm**

Transfer Date	Farm Number Cage No.	Live Fish Count
29/1/05	A93	4,802
30/1/05	A85	1,098

Count Total **C** 5,900

Total Number of mortalities  $F = A + B + J$  **F** 35

Weight Total  $D = C \times E$  (E: Average Weight in Kg) **D** 107675

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

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 2930404

FRP Holder E. Watson

Video Reference Date 1 / 2 / 05

FRP Signature E. Watson

Date 1 / 2 / 05

**Part 2**

Purse Seine Boat Name	TUNA 1	Dist. Symbol	0253
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SBT02	Log No: 12	Page No: 4	J	10	Number of mortalities during pursing and transfer to tow cage
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**Average Weight sample from Tow Cage**

Sample Date	29 / 1 / 05	Name of Person Sampling	T. Smith	Signature of Person Sampling	T. Smith
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Average Weight in Kg	No. of Fish taken from tow cage
<b>E</b> 18.25	42

I declare that the information which I provide on the form to be a complete and accurate record.

AFMA Agent's Name	B. Brown	AFMA Agent's Signature	B. Brown	Date: 29 / 1 / 05
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## **Appendix 4: Tow Cage Size Monitoring Report**





**Appendix 5: Details of revised method for calculating Catch at Size  
data for the purse seine fishery**



## **Revision of the purse seine component of the Australian Catch at Size data sets 2002 to 2004**

### **Background**

Revisions to the Australian Catch at Size data sets for 2002 to 2004 have been made in the 2006 data exchange, and are significant enough to require description of the causes for the revision. There are two reasons for revision of the data; the first is changes to handling of size samples from SBT farm cages in calculation of the data; and the second is the replacement of size data for a single purse seine shot in 2004 with more accurate values.

The purse seine catch at size data for 2002 to 2004 submitted in 2005 were calculated in the following manner:

1. The sample of fish<sup>1</sup> measured and weighed from each farm tow cage by Protec Marine Pty Ltd was used to build the raw length frequencies for the catch at size data. The samples were modified from those used in the calculation of total SBT quota decrements by replacing some of the forty fish weighing 10 kg or more with those weighing less than 10 kg. The total sample size used in the length frequency analysis remained at forty fish per tow cage, but were a different set of forty fish than those used to determine quota if there were any fish weighing less than 10 kg in the sample. In most cases there were small numbers of fish weighing less than 10 kg and bias within the forty fish sample was minimised.

As an example, if forty fish were caught during the sampling phase and five were under 10 kg, then another five fish were caught for the sample. If two of those five fish were under 10 kg, then another two fish were caught. This leaves seven fish under 10 kg and forty fish weighing 10 kg or more. For the length frequency analysis, the last seven fish weighing 10 kg or more were replaced by the seven under 10 kg fish, still leaving a final sample size of forty fish.

2. Fractions of the forty fish length sample were calculated for the components of the catch from each half-month and one degree latitude-longitude grid cell. The proportions of the tow cage contents from each stratum of half-month and grid cell were calculated using the purse seine daily catch and effort logbooks (logbook type TPB03) by summing the estimated weight transferred for all

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<sup>1</sup> Protec determine the average weight of SBT in a tow cage by sampling captured fish until forty individuals weighing more than 10 kg have been weighed. The average weight of the forty fish heavier than 10 kg is multiplied by the total number of fish in the tow cage to estimate weight of SBT captured for quota management purposes. The number of fish is the sum of those counted by video in the farm transfer plus number of mortalities during capture, and transfer to tow and farm cages. A record of fish weighing less than 10 kg is kept.

shots within a stratum for a particular tow cage and dividing by the total of estimated weights transferred to that tow cage. (The logbook data can be related to data on tow cages and farm cage transfers as described in CCSBT-ESC/0409/26).

3. The proportions were multiplied by the sample length frequencies for each tow cage and then summed across tow cages to give raw length frequencies for each stratum (the values in the FREQUENCY\_RAW column).
4. The proportions were multiplied by the sample length frequency and by the total number of fish in the tow cage, and then divided by forty to give the raised length data for each tow cage. The length frequencies were then summed across tow cages to give the complete fishery raised length data for each stratum (the FREQUENCY\_ADJUSTED column).

### **Revised method of data preparation for 2006 data exchange**

In the 2004-05 season, the number of fish weighing less than 10kg in the farm tow cage samples were considerably more than past years and the process of replacing larger fish in the sample of forty was considered to be introducing unacceptable bias into the raw length frequency data. Therefore the number of fish included in samples was varied for each tow cage to include all fish measured/weighed by Protec. The procedure for calculating the raised catch at size was unchanged from that described above except for the variable sample size. The 2005 Catch at Size data was calculated using the revised method and revised data sets provided for the years 2002 to 2004. In the 2005 data set, the sample size varied between 40 and 87 fish.