

2010/11



SUNTAG

RESEARCH REPORT

infofish



Suntag Research Report 2010/11

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Cover design by Creative Avenue. Front cover photographs: Saddletail Snapper on Bragmat, recapture of a tagged Red Emperor, tagged juvenile Barramundi - Back cover photographs: Giant Trevally, tagged Blackspot Tuskfish and recaptured Crimson Snapper.

Information in this publication is provided as general advice only. For application to specific circumstances, professional advice should be sought.

ANSA Qld and Infofish Australia have taken all steps to ensure the information contained in this publication is accurate at the time of publication. Readers should ensure that they make the appropriate enquiries to determine whether new information is available on a particular subject matter.

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Acronyms Used in the Report

AFTA: Australian Fishing Trade Association
AIMS: Australian Institute of Marine Science
ANSA: Australian National Sportfishing Association
ANSAQ: Australian National Sportfishing Association Qld Inc
Austag: ANSA Research Program
BIAQ: Boating Industry Association of Queensland
CSIRO: Commonwealth Scientific and Industrial Research Organisation
DAFF: Department of Agriculture, Fisheries and Forestry
DEEDI: Department of Employment, Economic Development and Innovation
DERM: Department of Environment and Resource Management
FQ: Fisheries Queensland
FRDC: Fisheries Research and Development Corporation
GBRMP: Great Barrier Reef Marine Park
GBRMPA: Great Barrier Reef Marine Park Authority
JCU: James Cook University
MQ: Marine Queensland
RBB: Rocky Barra Bounty
Recfish: Recfish Australia
RFCGP: Recreational Fishing Community Grants Programme
StockTag: Stocked Fish Tagging Program
Suntag: ANSA Qld Research Program
TAA: Tagging Achievement Award
TEA: Tagging Excellence Award

Acknowledgements

The running of a data collection program to collect basic data on our fish species, and involvement in many research projects, is a major undertaking. The task is considerably greater and more difficult when that program is being undertaken by a recreational fishing organisation such as ANSA with most of the work being carried out voluntarily.

Without the efforts of a host of people that have contributed to the program and support from government and the corporate sector this would not have happened. It is important to acknowledge the efforts and support of those that have made this possible.

The support and cooperation of the following Government agencies, funders and research institutions to Suntag is acknowledged.

Dept of Employment, Economic Development and Innovation (Fisheries Queensland)
Fisheries Research and Development Corporation
Great Barrier Reef Marine Park Authority
Australian Institute of Marine Science
James Cook University
Fitzroy Basin Association
Australian Fishing Trade Association
Department of Defence



The support of businesses that contribute to Suntag is also acknowledged.

One Pixel
Infotish Australia
Hallprint Pty Ltd
Platypus Fishing Lines
Lively Lures





The support of fishing organisations is acknowledged and Suntag partners with community monitoring programs that includes, for the first time, a program in another state.

Sunfish Queensland
Freshwater Fish Stocking Association of Queensland
StockTag
CapReef
Holloways Beach Environment Education Centre
King Ash Bay Fishing Club



FFSAQ



StockTag



King Ash Bay Fishing Club 

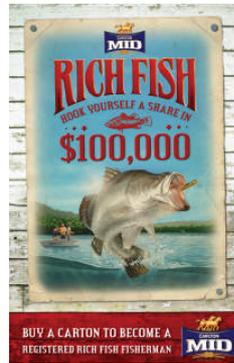
Suntag works with and supports monitoring undertaken by fish stocking groups and the following groups are acknowledged.

Mount Isa Fish Stocking Group
Gulf Barramundi Stocking Association
Richmond Fish Stocking Group
Cairns Area Fish Stocking Association
Burdekin Fish Restocking Association
Tablelands Fish Stocking Society
Twin Cities Fishing Stocking Society
Faust Dam Fish Stocking Association
Mackay Area Fish stocking Association
Mackenzie River Fish Stocking Group
Fitzroy River Fish Stocking Group
Moura Apex Fish Stocking Group
Callide Valley Native Fish Stocking Association
Baralaba Recreation and Fish Stocking Group
Lake MacDonald Freshwater Fishing Assoc

Taroom & District Fishing and Restocking Club
Borumba Fishing Club
Bundaberg Sportfishing Club Fish Stocking
Fraser Coast Fish Stocking Association
Australian Bass Association
Brisbane Valley Anglers Fish Stocking Assoc
Carpbusters
Charleville Fishing and Restocking Club
Oakey Freshwater Fish Stocking Association
Inglewood Fish Stocking Association
Surat Fishing and Restocking Club
Lake Coolmunda Restocking Group
Texas Fishing Club
Haughton River Fish Restocking Group

Suntag works with and supports the following fishing competitions by tagging fish caught in these events.

Rocky Barra Bounty
Boyne Tannum Hookup
Tight Lines Fishing Competition
Bundaberg VMR fishing Competition
Carlton Mid Rich Fish (Queensland, Northern Territory, Western Australia)



The following ANSA Qld clubs are involved in Suntag and the continued efforts of taggers in these clubs are acknowledged.

Bribie Island Sportfishing Club
Brisbane Sportfishing Club
Brisbane Valley Anglers
Bundaberg Sportfishing Club
Burdekin Recreational Sportfishing Club
Cairns Sportfishing Club
Captag
Cardwell Sportfishing Club
Collinsville Sportfishing Club
Endeavour Sportfishing Club
Gladstone Sportfishing Club
Ipswich United Sportfishing Club
Hinchinbrook Sportfishing Club

Keppel Bay Sportfishing Club
Kingaroy Sportfishing Club
Lavarack Sportfishing Club
Maryborough Sportfishing Club
Mossman Sportfishing Club
North Brisbane Sportfishing Club
Queensland Sportfishers
Southern Brisbane Sportfishing Club
Sunshine Coast Sportfishing Club
Townsville Saltwater Sportsmans Club
Townsville Sportfishing Club
Tully and District Sportfishing Club
Weipa Sportfishing Club

The following individuals provide support to Suntag and promoted it through the media.

Steve Morgan – Fishing Monthly magazines
Billy Stringer – Suntag tagger

Dave Downie – Radio 4BC Fishing Show
Andrew Phipps (Phippsy) - Radio Zinc show

1. Summary 2010/11

The most significant advance for 2010/11 was the linking of the Suntag database to Google Earth. Google Earth is now widely used by fishers and provides a new tool for the visualisation of Suntag data.

The other significant advance was the upgrade of reporting recaptures through the website. Fishers reporting recaptures can now lookup Suntag grid maps to more accurately record where they caught the fish. If all details are entered correctly and the fish is in the database the website will provide the history of all captures of the fish, any photos of the fish in the database and a Google map showing where the fish was tagged and recaptured.

Suntag tagging highlights for the year were:

- ❑ Over 8,695 taggers have now participated in Suntag and over 15,620 fishers have reported the recapture of a tagged fish
- ❑ Total tagged fish and crabs in the database now exceeds 643,200 and 50,900 recaptures
- ❑ Barramundi is the most tagged species with over 210,900 tagged and over 17,500 recaptures
- ❑ The overall recapture rate for all fish and crabs is 7.9% with a 4.5% recapture rate for the year
- ❑ The release rate of recaptured fish for the past 8 years was over 60% and over 70% from 2007/08 to 2009/10
- ❑ One report was produced using data collected in Suntag projects and 12 Suntag News bulletins were sent out via email to around 800 subscribers
- ❑ Michael Powell was the top individual tagger with 1,464 fish tagged for the year while Mick Dohnt remains the top tagger overall having tagged a total of 23,119.

While the number of taggers participating in Suntag has declined in the last decade to 591 taggers this year, the number of fish tagged at 28,543 remains high. Just 89 Frequent Taggers, those that have tagged over 1,000 fish, account for 37% (around 238,500) of all fish tagged while the remaining 8,600 taggers account for 39% (around 250,800).

The recapture rate of tagged fish in Suntag in Queensland is used as an approximate measure to monitor fishing effort, and in turn participation in recreational fishing. For 2009/10 the recapture rate was aggregated to a 5 year rate to allow for a better comparison with RFish data collected by Fisheries Queensland. The long term recapture rate of fish is 7.4% while the recapture rate in 2010/11 was 4.5%.

Collecting catch and effort data for taggers has improved since 2005/06. The average Suntag tagger trip in 2010/11 was 1.5 fishers fishing for 7.0 hours. On each trip there was an average of 10.1 fish caught of which 1.0 fish was kept. On average 11.3% of fish caught by Suntag taggers are kept while 72.6% are tagged and 14.4% are released without tags.

Suntag manages the data collected through the CapReef community monitoring program in Central Queensland which ran from 2005/06 to 2008/09. There were 15 reports produced using CapReef and Suntag data including a summary report titled "CapReef: Recreational Fishing and Fish Resources in Central Queensland 2005/09".

Suntag is also working with the King Ash Bay Fishing club on community monitoring of Barramundi stocks in the McArthur River in the Gulf of Carpentaria. This is a 2 year project being funded by the McArthur River Mining Trust.

Suntag continues to collect data on the locations where hooks are lodged in fish to assist with fish survival studies. Hooking locations have been recorded for 68,395 fish to 2010/11. Deep hooking of fish is associated with lower survival rates for released fish. The overall rate of deep hooking (in the throat, gills or gut) is 6.6% while for bait caught fish it is 11.1% and for lure caught fish it is 1.7%.

2. Introduction

Suntag commenced as the Sportfish Tagging Program in 1987 when the then Fisheries Management Branch of the Department of Primary Industries handed over responsibility of the program to ANSA Qld. The first annual report was produced in 1987/88.

In that year it was reported that 2,955 fish were tagged with 151 recaptures. The following is an extract from the summary in that report.

“By any measure the program has to be considered a success. More fish tagged, covering a limited number of species and more returns than in any other year of the program.

If that success is repeated in subsequent years it will provide a valuable addition to our fisheries knowledge which can identify where research effort should be directed and alert fisheries management to potential problems.”

The yardstick of achievement has been extended beyond anything that was imagined back then.

In 1993/94 a similar program was set up in Victoria as Victag and in 1994/95 Austag was established to provide a national umbrella for ANSA tagging programs. Over the next few years tagging was taken up by ANSA branches in each State as Westag, Toptag, Newtag, Tastag and Saftag. In Queensland the program continued as the Sportfish Tagging Program until 1997/98 when the name was changed to Suntag to fit in with the names of the other Austag programs.

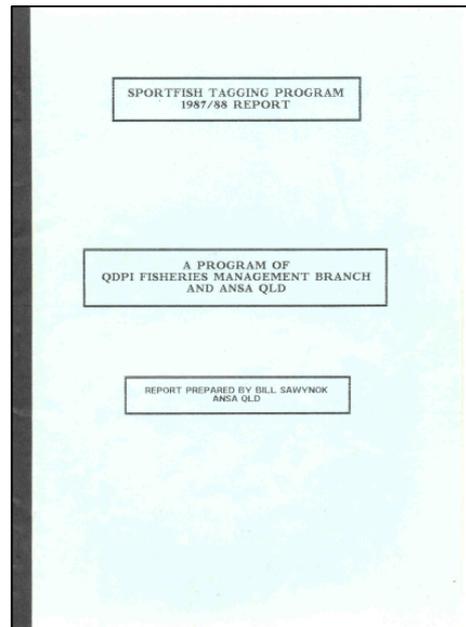
In 1996/97 data collection was extended to include catch and effort for those involved in tagging and has continued and expanded since then. In 2000/01 the National strategy for the Survival of Released Fish commenced and data collection was again extended to collect data on hooking and barotrauma to provide information on fish survival.

The database was upgraded several times as Suntag developed. However it was originally focused on collecting data on tagging. As data collection was extended separate databases were added to collect the new data. This meant some duplication of effort and extracting data and providing reports was cumbersome. In 2006 a new web based database was developed to include all data being collected.

In 1996/97 the first Austag Sportfish Tagging Report was produced which covered all the Austag programs. The annual reports were produced as Austag reports through to 2005/06. From 2003/04 the report was produced as the Austag Research Report. For the first time no report was produced in 2006/07 due to a number of States not being able to provide reports.

So in 2007/08 we went full circle back to a Suntag report to ensure that an annual report was produced. However its title was broadened to Suntag Research Report to reflect the current activities carried out under the Suntag banner.

In 1987/88 the goal was to provide a valuable addition to our fisheries knowledge. This report provides a summary of how far we have progressed since it all started.



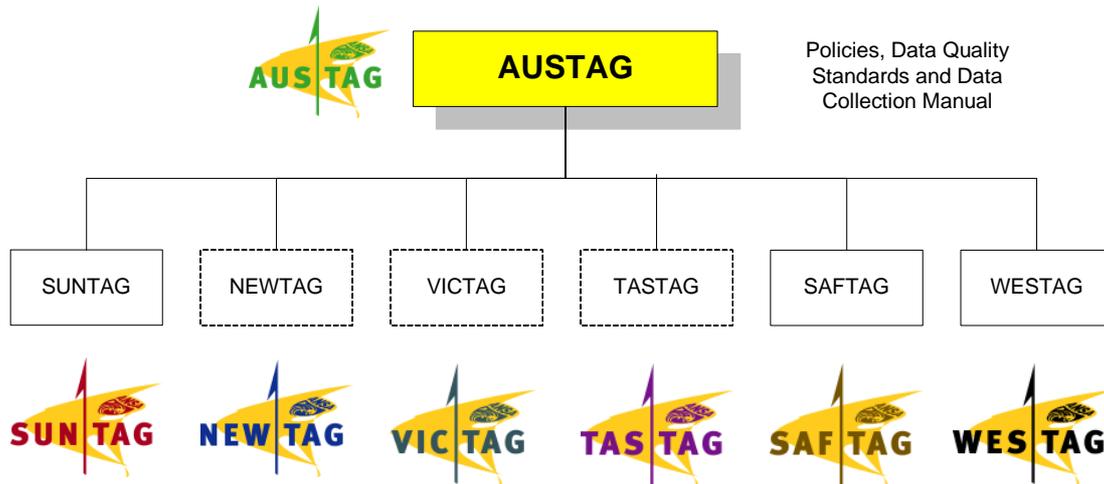
First 1987/88 Sportfish Tagging Program Report

3. How Suntag Works

Austag is an umbrella program that coordinates the collection of tagging, catch and effort and other data on fish caught by ANSA members and other organisations throughout Australia. Suntag is the Queensland program under Austag.

Austag Structure

Austag provides the framework and standards for the management and operation of separate programs in each State as outlined in *figure 2*.



Database and State program management in cooperation with State Fisheries agencies

Figure 1: Relationship between Austag and the State tagging programs

The Austag Coordinator is responsible for the setting and maintenance of overall standards within which the State and subsidiary programs operate, providing support and guidance to the State programs and developing and refining operational aspects of data collection.

The subsidiary programs under Austag are where the data are collected and stored. While the State programs conform to the national standards they are managed and operated independently with State Tagging Coordinators responsible for the collection, storage and dissemination of tagging and catch and effort data in their own States.

Toptag has ceased operating as there is no longer an ANSA branch in the Northern Territory. Newtag, Victag and Tastag are currently non-operational while the operations of Saftag are low key.

This year Westag has been revived and is being redeveloped and modernised in its operations. During the year the Westag database was upgraded to a web based database based on Infofish 2011 and a new Westag website. The website also has provision for data to be entered online.

Suntag Management and Structure

Suntag is a joint program between Fisheries Queensland (FQ) in the Department of Employment, Economic Development and Innovation (DEEDI) and ANSAQ. FQ provides an annual grant to ANSAQ for the delivery of the program. For the past 7 years ANSAQ has contracted Infofish Australia to manage Suntag on their behalf.

Suntag is structured around collection, storage and analysis of data as well as the distribution of data and production of information products. *Figure 2* is a diagram of Suntag data flows from the initial collection of data to distribution through information products.

An Austag Manual is maintained which provides Work Instructions for use in all Austag programs, including Suntag. The manual is maintained within a section of the database and is also available from the website www.info-fish.net.

Suntag tagging is carried out through projects which are agreed annually by ANSAQ and FQ and the current list of projects is available from the website.

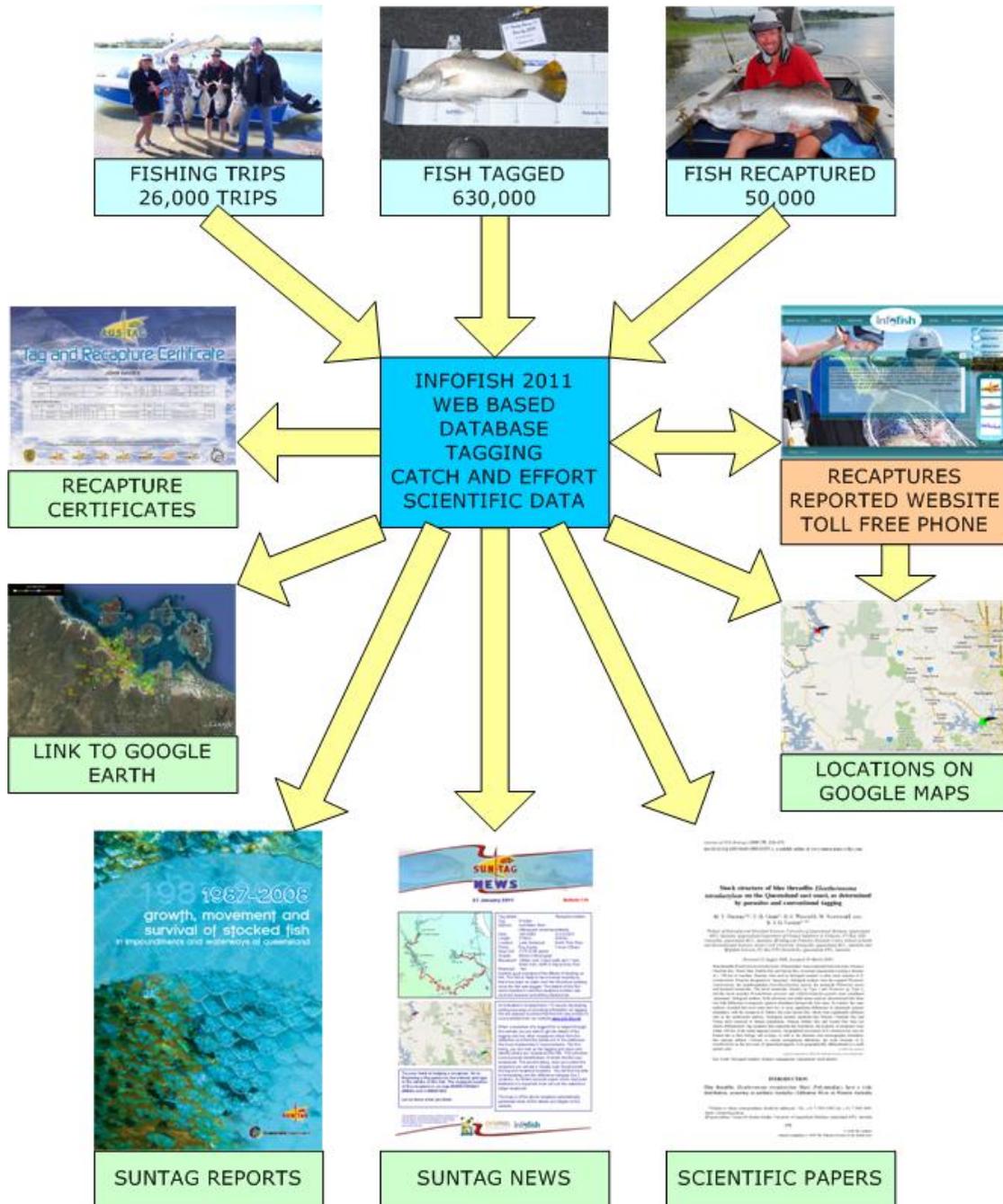


Figure 2: Diagram showing Suntag data flows from data collection to information products

Suntag uses Infish 2011 database

The Infish web based database introduced in 2006 significantly improved the collection of tag, recapture, catch, effort and other data. During this year the database was further upgraded to Infish 2011. *Figure 3* is a database screen showing the details of fish tagged and catch on a fishing trip.

Administration		New Email ANSA FRDC Infish Releasefish Log Off						
Home	Catch Details							
Profile	Trip Code	Tag	Map	Location	Fisher	Species	Date	Action
User Groups	CTMP247	R44892	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
User Details	CTMP247	R44893	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Tag Series	CTMP247	R44894	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Tag Issues	CTMP247	R44895	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Tags	CTMP247	R44896	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Species	CTMP247	R44897	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Maps	CTMP247	R44898	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
	CTMP247	R44899	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Research	CTMP247	R50401	KBY	PUMPKIN PASSAGE	POWELL M	RED EMPEROR	19/08/2006	View Delete
	CTMP247	R50402	KBY	PUMPKIN PASSAGE	POWELL M	LONGFIN ROCKCOD	19/08/2006	View Delete
Trip Sheets	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Pending List	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Catch Details	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Recaptures	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Trip Details	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Reports	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Library	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Documentation	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete
Quality docs	CTMP247		KBY	PUMPKIN PASSAGE		LONGFIN ROCKCOD	19/08/2006	View Delete

search retrieved : 21 [21 displayed]

Catch Details

Trip Code: Tag:

Location: Map:

Fisher: Species:

Start Date: End Date:

Figure 3: Typical screen from Infish 2006 showing fishing trip catch details

Added to the 2011 database was the ability to store images and video of individual tagged and recaptured fish. It is expected that over time an extensive visual library will complement the textual database. *Figure 4* shows an image of a tagged fish stored in the database.

Summary:

Longitude Summary:

Description:

Image: 

Video:

Summary:

Description Video:



Figure 4: Images (photographs or video) of individual tagged or recaptured fish can now be stored in the Suntag database

Suntag on the Infofish website

Infofish website at www.info-fish.net provides information on Suntag and other projects administered by Infofish Australia. *Figure 5* shows the homepage on the website.

The website provides the following on Suntag:

- Suntag manual
- Suntag projects
- Suntag awards
- Suntag maps
- Suntag reports
- Forms used in Suntag for download
- Reporting a recapture
- Suntag News
- Infofish Shop for purchasing tag equipment



Figure 5: Infofish website homepage

Reporting of recaptures through the Infofish website was upgraded during the year. Fishers reporting recaptures can now lookup Suntag grid maps to more accurately record the location where they caught the fish. If all details are entered correctly and the fish is in the database the website will provide details as shown in *figure 6*. This includes the full history of the fish, any photos of the fish and a Google map showing where the fish was tagged and recaptured.

If all the tag details of the fish are available in the Suntag database, you will receive a **Tag and Recapture Certificate** in the mail within 10 working days providing you with the history of your fish. A summary of the current information follows.

Tag and any previous Recapture Details

Tag Detail:

Tag No.	Species	Tagger	Date	Total Length	Fork Length	Tag Location
P45429	BARRAMUNDI	DP18/FNPC	9/11/2004	1135		LAKE TINAROO

Recapture Detail:

Recap No.	Angler	Date	Days Out	Total Length	Growth	Fork Length	Growth	Recapture Location	Movement	Released
1	ALLAN R.	5/12/2010	2217	1220				LAKE TINAROO	4 KM UP LAKE	Yes

Google Maps automatically zooms to the level it thinks is best, if you wish to see more detail zoom out using the slider.

Figure 6: Website feedback on recapture of tagged fish

Suntag linked to Google Earth

The most significant advance for 2010/11 was the linking of the Suntag database to Google Earth. Google Earth is now widely used by fishers and provides a new tool for the visualisation of Suntag data.

Both tagging and catch and effort data can be displayed along with photographs, video and graphs. As an example the areas of greatest fishing effort in the McArthur River in the Gulf of Carpentaria are clearly shown in *figure 7*. When each area is highlighted and clicked a graph showing the catch rates per season is displayed.

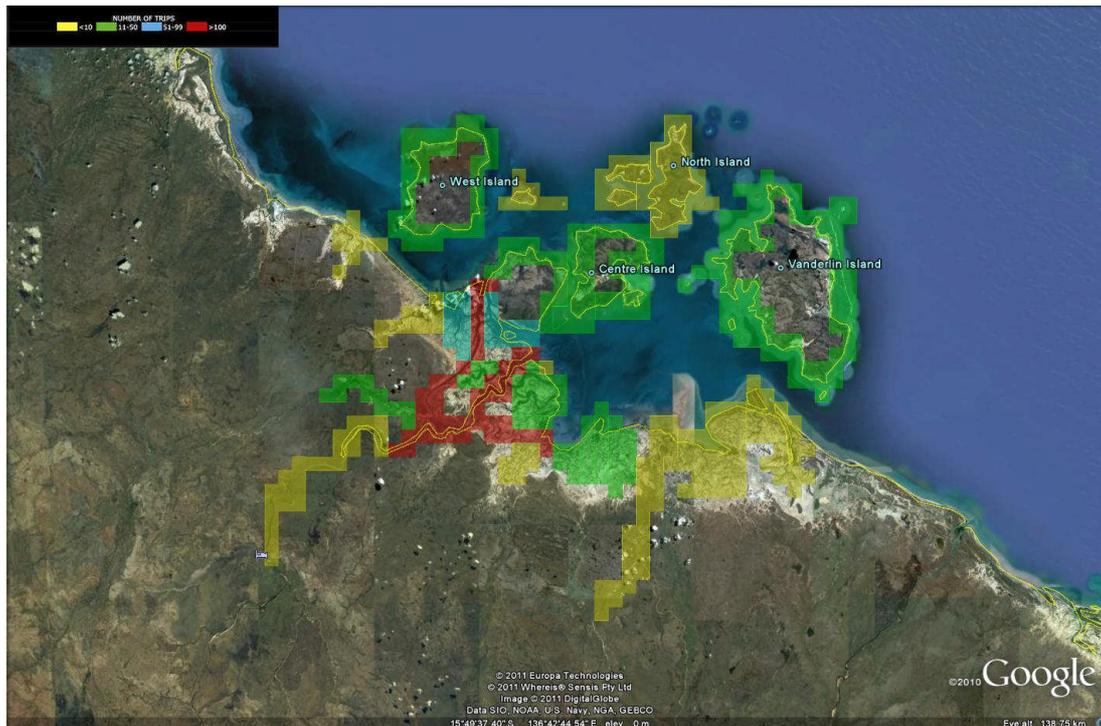


Figure 7: Google Earth map showing fishing effort in the McArthur River in the Gulf of Carpentaria

Suntag Feedback on Recaptures

A very important aspect of Suntag is providing feedback to fishers, particularly about recaptures of fish. This service is continually being improved. Recapture details can be reported though:

- 1800 free call number printed on the tag
- Infofish website
- Infofish etrip form
- Email
- Fax
- Mail

With the increased use of mobile phones more recaptures are being reported direct from the fishing location. With the instant world created by technology there is an expectation that feedback is available in real time. Feedback is provided in a number of ways.

- When reported by telephone the database is accessed on the spot and details of the fish are relayed verbally
- When submitted by the website details are provided direct as shown in *figure 6*

- ❑ When details of a recapture are entered into the database details are generated automatically and can be emailed to the both fishers that recaptured and tagged the fish as shown in *figure 8* (provided email addresses are available)
- ❑ Tag and recapture certificates as shown in *figure 9* are sent to both fishers that tagged and recaptured the fish

RYAN PICKLES

TAG DETAILS:

Tag No.	Species	Tagger	Date	Total Length	Fork Length	Tag Location	Map	Grid
R13251	BARRAMUNDI	SAWYNOK W	18/03/2008	253		12 MILE CREEK	RAG	N10

RECAPTURE DETAILS:

Recap No.	Angler	Date	Days Out	Total Length	Growth	Fork Length	Growth	Recapture Location	Map	Grid	Movement	Released
1	PICKELS R	20/04/2008	33	310	57			12 MILE CREEK	RAG	N10	0KM RECAPTURED SAME AREA	Yes
2	TOMLINS M	26/11/2008	220	345	35			12 MILE CREEK	RAG	N10	0KM RECAPTURED SAME AREA	Yes
3	GOLDFINCH A	27/05/2011	912	705	360			CORIO BAY	CBY	J9	115KM NORTH ALONG COAST	No

Figure 8: Details of history of recaptured fish automatically generated by database and emailed to tagger and person recapturing fish



Figure 9: Austag certificate used to provide feedback on recaptured fish

The Australian Fishing Trade Association (AFTA) has been a long-term supporter of Austag and sponsor of our tag and recapture certificates. Over 38,000 certificates have been issued under Austag programs around Australia since 2001/02. During this year the tag certificate supply ran low so sending certificates to taggers was discontinued as a temporary measure until a new supply of certificates can be arranged.

Suntag Information

Information on interesting recaptures of tagged fish and other items of interest about Suntag are provided through Suntag News as shown in *figure 10*. This is a one page email bulletin that can be subscribed to or is available from the website. As well recipients are encouraged to distribute the bulletins through their own networks. Clubs use material from the bulletins in their newsletters and fishing magazines, newspapers and radio fishing shows pick up items as well.

14 December 2010 **Bulletin 173**

Floods and Fish in Central Queensland

There is always good and bad news for the community when it comes to flooding and the same goes for fish. Right now in Central Queensland we have examples of both the good and the bad.

Lake Awoonga near Gladstone has been a mecca for some years for those that chase impoundment Barramundi. The lake has been stocked for many years and has a good population of large fish - or it did have until this week when the lake overflowed for the first time in many years.

Hundreds, if not thousands, of large Barramundi have been seen going over the spillway into the pool below and then downstream into the Boyne River.

The photo clearly shows 3 large Batts at the top of the spillway just before going over. Large numbers of fish can be seen in the pool below. These fish will add considerably to stocks in the Gladstone area.

Woolwash Lagoon is on the Fitzroy River floodplain just south of Rockhampton. In the last week a large number of fish have died, most likely victims of the flood. As floodwater rises and inundates new ground the vegetation starts to rot. This process uses a lot of oxygen from the water and under some circumstances can result in large numbers of fish dying.

Around 5,000-6,000 fish died with around 1,200-1,000 Barramundi (about 1.0-1.5 tonnes). The other main species that died was Bony Bream. Out of around 950 Barramundi checked there were 38 tags recovered. Based on tagged fish it is estimated that there were roughly 3,000-4,000 Barramundi in the lagoon so that about one-third of those died. Photos show dead Bony Bream and Barramundi (circled).

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8 May 2011 **Bulletin 177**

K3307 RECAPTURED
ALL 3 FISH TAGGED HERE

S110200 AND K38704 RECAPTURED

IPSWICH

Tag details	Recapture details
Tag: K3307	Tag: 752011
Species: Australian Bass (Macquaria novemaculeata)	Species: Australian Bass (Macquaria novemaculeata)
Date: 26/11/1996	Date: 15/05/2011
Length: 210mm	Length: 580mm
Location: Lake Somerset	Location: Stanley River
Fisher: Mike Gilbert	Fisher: Tristan Grant
Days Out: 9541 (15.5 years)	Days Out: 155
Growth: 370mm (24mm/year)	Growth: 1.1mm/year
Movement: 23km up river	Movement: 118km over dam walls down river and over weir
Released: Yes	Released: No

Tag details	Recapture details
Tag: S110200	Tag: 5250011
Species: Australian Bass (Macquaria novemaculeata)	Species: Australian Bass (Macquaria novemaculeata)
Date: 7/2/1996	Date: 5/2/2011
Length: 330mm	Length: 480mm
Location: Lake Somerset	Location: Mt Crosby Weir
Fisher: Roy Scuter	Fisher: Ben Huggins
Days Out: 4635 (13.2 years)	Days Out: 155
Growth: 150mm (11mm/year)	Growth: 1.1mm/year
Movement: 118km over dam walls down river and over weir	Movement: 123km over dam walls down river and over weir
Released: No	Released: Yes

Tag details	Recapture details
Tag: K38704	Tag: 134/2011
Species: Golden Perch (Macquaria ambigua)	Species: Golden Perch (Macquaria ambigua)
Date: 31/11/1996	Date: 13/4/2011
Length: 300mm	Length: 425mm
Location: Lake Somerset	Location: Mt Crosby Weir
Fisher: John Ellis	Fisher: Tom Clancy
Days Out: 5274 (14.4 years)	Days Out: 155
Growth: 45mm (3mm/year)	Growth: 1.1mm/year
Movement: 123km over dam walls down river and over weir	Movement: 123km over dam walls down river and over weir
Released: Yes	Released: Yes

Fish have taken advantage of the very wet season and flooding to move to places they have not been able to get to for many years. Here are 3 fish that have all been at liberty for over 13 years. One moved upstream while the other 2 made their way downstream over the Somerset and Wivenhoe dam walls and down the Brisbane River to baby Mt Crosby Weir. Note the very slow growth rate for K33074 which is typical of the larger fish. K33207 is the largest Bass recaptured to date.

Figure 10: Suntag News bulletins

Shoalwater Bay
Fish stocks in southern creeks entering Shoalwater Bay 2000-10
Report 14

Figure 11: CapReef - Suntag Shoalwater Bay report 14

Suntag data are also used in reports such as the report shown in *figure 11*. Reports are available from the website. Suntag data are also provided to researchers and fishing groups and that data are often used in stock assessments, testing management options, technical reports and scientific publications.

4. Tags and Equipment

Tags used in Suntag

Tags used in Suntag are Hallprint tags obtained from Hallprint Pty Ltd of South Australia. The long standing support of David Hall of Hallprint for Suntag is acknowledged. The two types of tags most commonly used in Austag programs are the dart or spear tag and the anchor or gun tag (*figure 12*). Both these tags are used in a number of sizes.

The durability of these tags is demonstrated by recaptures of fish from 10-15 years after tagging and having the number still able to be read.



Figure 12: Tags and tagging equipment used in Suntag

Suntag Equipment from Infofish Shop

A full range of tagging equipment is available from the Infofish Shop through the Infofish website. All the equipment required to tag is available including starter kits, tag applicators, record books, measuring rulers and other ancillary equipment. The shop includes a secure payment method for online purchases. *Figure 13* shows a part of the Infofish shop.

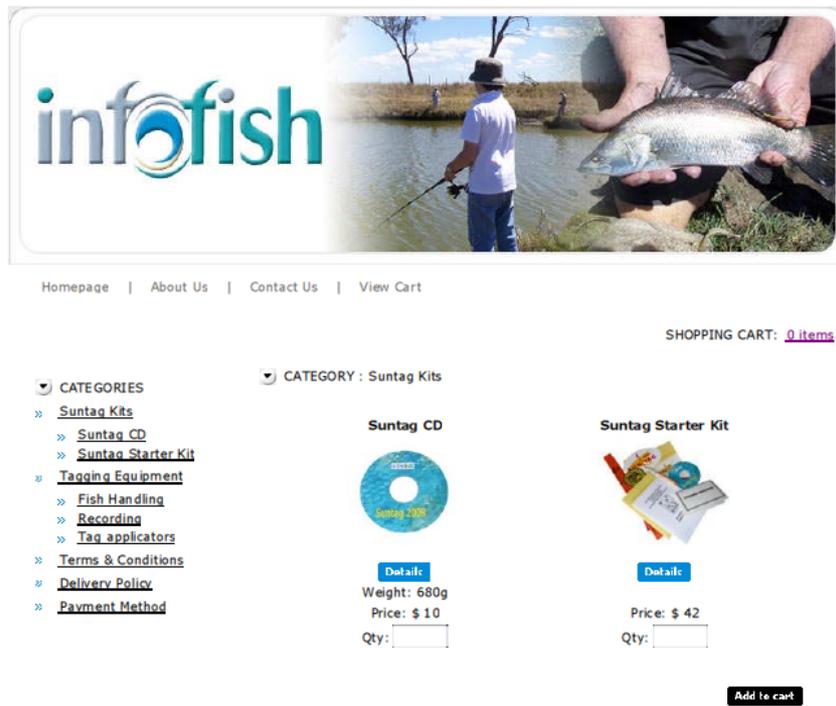


Figure 13: Infofish Store page showing some of the tagging equipment and products that can be purchased online

5. Scope of Suntag

In recent years the scope of Suntag has extended beyond fish tagging. It is now extensively involved in supporting groups undertaking community monitoring and researchers undertaking research projects. This involves collecting data on fishing activities and working collaboratively with government agencies, research bodies, fishing organisations and community groups. There are now 9 broad areas that Suntag is involved in:

- fish tagging
- community monitoring
- recruitment monitoring
- stocked fish monitoring
- support for research projects
- fishing competitions involving tagging
- catch and effort
- released fish survival
- historical tagging records

Fish Tagging

Suntag commenced in 1986/87 as a tagging program to obtain movement and growth of key recreational species. Suntag is now the primary repository of tagging data in Queensland for tagging carried out by Suntag taggers, FQ researchers, fish stocking groups and some research institutions and universities.

Suntag is now a substantial dataset spanning a 26 year timeline and data have been used for a wide range of purposes including:

- growth and movement
- stock assessments
- monitoring recruitment
- assessing the effects of management
- environmental impact assessments
- ecosystem modelling
- climate change

Community Monitoring

An important and growing role has emerged for Suntag in providing support to community monitoring. Community monitoring involves collecting data to assist the community and government to deal with regional or local fisheries issues and extends well beyond tagging.

This commenced with the establishment of CapReef in Central Queensland in 2004/05 to monitor the effects of the rezoning of the Great Barrier Reef Marine Park and changes to the Reef Line Fishery Management Plan. CapReef has collected data on catch and effort, fish movement through tagging, expenditure on fishing, attitudes to management changes and changes in fisher behaviour. This has been through boat ramp surveys, fishing trip information, using Baited Remote Underwater Video (BRUV), specific fishing experiments and social surveys.

In 2009/10 a community monitoring project was set up in the Northern Territory on the McArthur River in the Gulf of Carpentaria. Infofish Australia and Suntag are providing support to a Barramundi Monitoring Project being undertaken by the King Ash Bay Fishing Club. This is a 2 year project to provide the community and government with information on Barramundi stocks following concerns raised by the club over declining catches. Data being collected includes catch and effort from fishing trips, tagging, weather and environmental data.

Suntag has provided long term support for a community crab tagging project by the Holloways Beach Environmental Education Centre. This involves students at the centre tagging crabs in the Barron River and Thomatis Creek.

Recruitment Monitoring

Understanding fish recruitment is a key factor in understanding the dynamics of fish stocks and collecting data on recruitment can be undertaken by community groups.

Tagging, cast netting surveys and environmental data have been used since 1998/99 to monitor Barramundi recruitment and was incorporated into CapReef when it was established. This has helped understand the environmental conditions for successful Barramundi recruitment and how that may be impacted by climate change. This led to the development of the "Crystal Bowl" concept which aims to predict Barramundi stocks into the future.

Stocked Fish Monitoring

During the 1980s the Queensland Government introduced the Recreational Fishing Enhancement Program which saw the start of stocking of impoundments and waterways on a statewide scale. Tagging of stocked fish commenced shortly after and has been incorporated into the broader program for monitoring stocked fish.

Taggers began to target stocked fish when they had reached a size of around 200mm which was big enough for them to be tagged. Some stocking groups also commenced tagging of their stocked fish, in the same way as Suntag taggers, in the late 1980s. Over the following years tagging of stocked fish by both Suntag taggers and stocking groups grew to become a significant component of Suntag.

FQ staff also tagged fish during their monitoring, which in the 1980s and 1990s was mostly through netting surveys. During the 2000s electrofishing surveys commenced and fish have also been tagged during these surveys.

A small number of tagged broodstock used in hatcheries have also been released when they are no longer required by the hatchery.

In the late 1990s stocking of larger Barramundi around 200-300mm commenced and since then the practice has been adopted by a number of stocking groups with batches of up to several thousand tagged fish being released. As well as Barramundi there has been a batch release of Murray Cod.

In 2007/08 under the Government's Living the Queensland Lifestyle program funding of \$100,000 was provided for the tagging of stocked fish. The funding was to provide tags and tagging equipment free of charge to stocking groups and to provide a number of reports on the tagging of stocked fish. The program continued through 2009/10 and StockTag was set up to more clearly identify the role of stocking groups in tagging.

No funding was provided for StockTag in 2010/11 however limited support for tagging by fish stocking groups has continued.

Support for Research Projects

Suntag provides support for tagging carried out by FQ that is undertaken in many research and monitoring projects. FQ does not maintain its own tagging database and uses Suntag for the management and long term storage of its tagging data. Suntag continues to provide support for FQ tagging eg Snapper and Pearl Perch as part of a study of rocky reef species and Murray Cod tagging in the Dumaresq River as part of assessing fish stocks.

ANSA members have for many years been involved in collecting biological samples such as fish frames for researchers through such programs as CapReef. There have also been projects where ANSA has provided logistic support and assisted with sampling during field data collection eg support for tagging in Green Zones around the Keppel Islands.

Suntag is currently providing support to CSIRO which is monitoring the effects of no fishing zones in Moreton Bay. This is through the management of tagging data and providing feedback to those reporting recaptures.

Suntag has provided support to university students undertaking research work by assisting them with data collection on tagging where that is part of their research. This allows students to concentrate on data analysis and hypothesis testing rather than on routine data collection. Support has been provided to a number of projects tagging Sharks in south east Queensland.

Fishing Competitions Involving Tagging

There is a growing trend in fishing competitions to include the tagging of fish. The following fishing competitions have a tagging component supported by Suntag:

- Rocky Barra Bounty at Rockhampton (1999-2010)
- Boyne Tannum Hookup at Gladstone (2000-2010)
- Tight Lines Fishing Competition at Yeppoon (2008-2010)
- VMR Fishing Competition at Bundaberg (2007-2010)
- Rich Fish in Queensland, Northern Territory and Western Australia (2010)

Catch and effort data from the first 3 competitions have also been collected as part of the CapReef program.

Catch and Effort

In 1996/97 ANSA NSW and ANSAQ both commenced programs to collect catch and effort to obtain data on catch rates of its members. Data collected was extended to include all fish caught, kept and released, and the time spent fishing. The catch rates of ANSA members may not reflect catch rates of the average recreational fisher as their skill level is generally higher however the trend in catch rates of ANSA members can be indicative of the trend in catch rates of the broader fishing population.

Many of the members providing catch and effort data are also those involved in tagging and it has been possible to get many of them to record the lengths of all fish caught. This has been useful in obtaining size composition of their catches.

Released Fish Survival

The Released Fish Survival Program went from 2002/03 to 2007/08 as an initiative of the FRDC. The FRDC invested \$2.4m out a total of \$7.3m in 20 projects under that strategy. The survival rates were known for 4 species prior to the strategy and 21 at its completion. Since then further work has been undertaken taking the number of species to 27 where survival rates have been determined (for some species from several experiments). Research on the survival of released fish continues to be monitored by Recfishing Research (an initiative of FRDC and Recfish Australia and managed by Inffish Australia) however due to the large volume of research done it is no longer considered to be among the highest national priorities.

ANSA members have been at the forefront of releasing fish for several decades so involvement in the strategy was a natural progression. The ANSA code of practice on releasing fish, adopted in 2002, was used as the basis for best practices in releasing fish and in 2004/05 Recfish Australia adopted a similar policy.

ANSA has assisted in the promotion of best practices and became involved in a number of the research projects through tagging providing data on long-term survival, and extended data collection to locations where hooks are lodged in fish. Research has shown that deep hooking of fish is a significant cause of fish mortality so collecting data on hooking locations and the terminal gear used provides valuable information that can be used to assist in determining survival estimates.

ANSA members were also involved in a number of the research projects dealing with barotrauma and many members have been involved in promoting improved practices in dealing with barotrauma.

Historical Tagging Data

Much of the tagging data that is collected is the responsibility of the individual researcher that has collected it. Once the data is used in the preparation of a technical or scientific paper it can often become 'lost' over time as researchers move on or as technology changes. While the data has served its primary purpose it can be used in the future with other data or can be re-analysed to answer new questions.

Suntag has been seeking old tagging datasets and incorporating them into its database. Bringing old data into the database provides a single dataset in a common format over a long timeline and makes further analysis of data much easier.

6. Suntag in 2010/11



Suntag Highlights for 2010/11

Suntag tagging highlights¹ for the year were:

- ❑ A total of 8,695 taggers have now participated in Suntag and 15,620 fishers have reported the recapture of a tagged fish
- ❑ Total tagged fish and crabs in the database is now 643,233 and 50,933 recaptures
- ❑ Barramundi is the most tagged species with 210,937 tagged and 17,557 recaptures
- ❑ The overall recapture rate for all fish is 7.4% with a 4.5% recapture rate for the year
- ❑ The release rate of recaptured fish for the past 8 years was over 60% and over 70% from 2007/08 to 2009/10
- ❑ Michael Powell was the top individual tagger for 2010/11 with 1,464 fish tagged for the year while Mick Dohnt remains the top tagger overall having tagged a total of 23,119 fish
- ❑ Images of over 200 tagged and recaptured fish are now stored in the database
- ❑ One report using data collected in Suntag projects was produced and 12 Suntag News bulletins were sent out via email to around 800 subscribers

Suntag Participation

A total of almost 8,700 taggers have now participated in Suntag having tagged fish since 1986/87. In 2010/11 there were 591 participating taggers that tagged at least one fish. Numbers participating in Suntag peaked from 1995/96 to 2001/02 where around 1,000 taggers tagged fish each year. This has steadily declined to around 600-700 participants in the last 2 years. Participation in Suntag is shown in *figure 14*.

This drop in participation follows a general trend of a decline in numbers participating in recreational fishing. However while participation has declined over that time the number of fish tagged has remained at similar levels as during the peak participation years. This indicates that the remaining taggers are more active and tagging more fish each year.

A total of over 15,600 fishers have participated in Suntag though reporting the recapture of a tagged fish. In 2010/11 there were 783 fishers that reported the recapture of a tagged fish with many fishers recapturing more than one fish.

¹ All figures to 30 June 2011 in database as at 2 August 2011

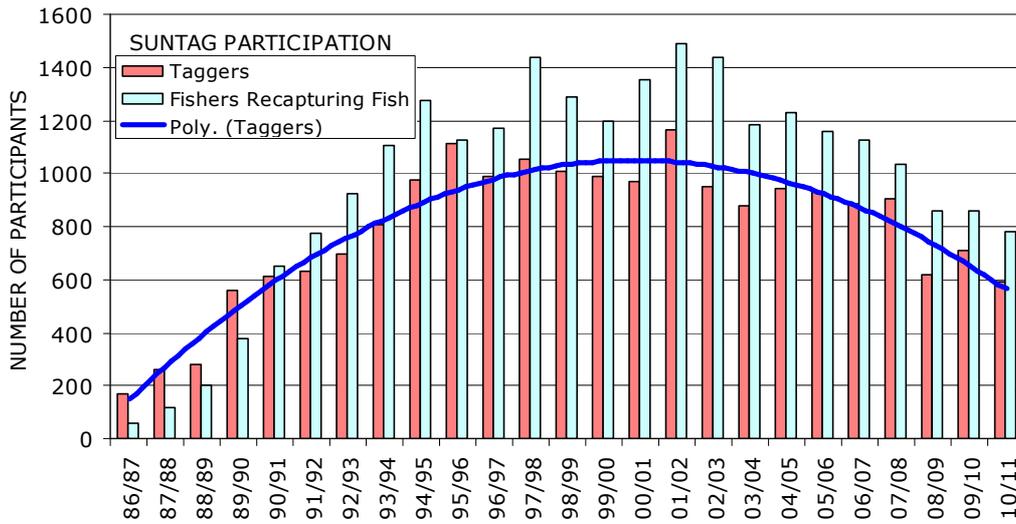


Figure 14: Summary of participation in Suntag from 1986/87 to 2010/11

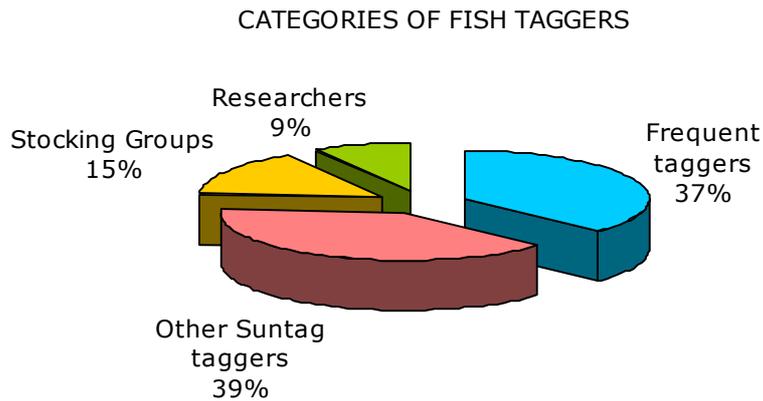


Figure 15: Categories of tagger participation in Suntag based on the total numbers of fish tagged

With the expansion of Suntag beyond ANSA, participation can be categories as shown in *figure 15*. Fish stocking groups and researchers are now responsible for 24% of the total number of fish tagged. They account for a larger proportion of the fish currently tagged as they have mostly joined the program in the last decade.

Just 89 Frequent Taggers (see Suntag Tagging Awards) account for 37% of the total number of fish tagged while the remaining 8,600 taggers account for 39% of the fish tagged.

Suntag Fish Tagged and Recaptured

The Suntag database now has over 643,000 tagged fish records. There have been almost 51,000 recaptures over the same period. The overall recapture rate for fish and crabs is 7.9% however is as high as 13.5% for some species (Saddletail Snapper) and 21.3% for some locations (Barramundi in 12 Mile Creek).

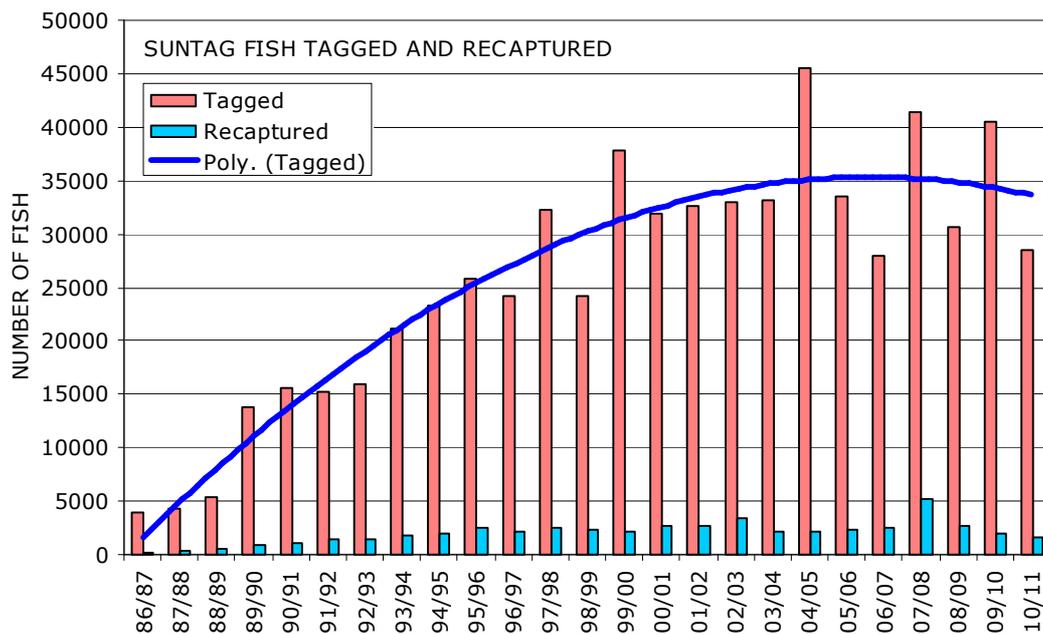


Figure 16: Suntag fish tagged and recaptured each year from 1986/87 to 2010/11

Figure 16 shows the number of fish tagged and recaptured each year since 1986/87. In 2010/11 there were 28,543 fish tagged and 1,610 recaptures (including multiple recaptures) recorded. Over the past 11 years since 1999/00 there has been over 30,000 fish tagged in each year except 2006/07 and 2010/11. The drop in numbers tagged in 2010/11 is mostly due to the significant reduction in funding for this year.

Suntag Key Species Tagged and Recapture Rates

Barramundi remain as the most tagged species and was the first species where over 200,000 fish have been tagged. The total number of Barramundi tagged is now 211,155 with 14,591 recaptures (17,557 including multiple recaptures). Numbers of Barramundi tagged have been significantly boosted since 2004/05 when large numbers of tagged Barramundi were released by fish stocking groups into impoundments and waterways. The overall recapture rate for Barramundi is 6.9% however is as high as 18.3% in the Fitzroy River estuary and 21.8% in 12 Mile Creek in Central Queensland.

Australian Bass is the second most tagged species with 56,681 tagged and 4,324 recaptured and a recapture rate of 7.6%. Figure 17 shows the number of key species tagged with the corresponding recapture rate.

While many fish are recaptures several times the recapture rate here is based only on a single recapture of each fish. Species with over 5,000 fish tagged that have recapture rates above the average 7.9% include Dusky Flathead (8.9%), Goldspotted Rockcod (10.2%), Golden Perch (8.5%), Mud Crab (15.1%)², Red Emperor (12.7%) and Blackspotted Rockcod (12.3%).

Species with recapture rates below 5% include Yellowfin Bream (4.0%), Barred Javelin (2.8%), Pikey Bream (4.6%), Speckled Javelin (2.0%), Giant Trevally (3.8%) and School Mackerel at (1.9%).

Saddletail Snapper has the highest recapture rate at 13.5% of any of the fish species tagged. This result is interesting as the survival rate for released Saddletail Snapper from experimental work is 50% (see section 12) and one of the lowest survival rates for any species assessed.

² Recapture rate for Mud Crab is high due to a lot of recaptures being made as part of research projects

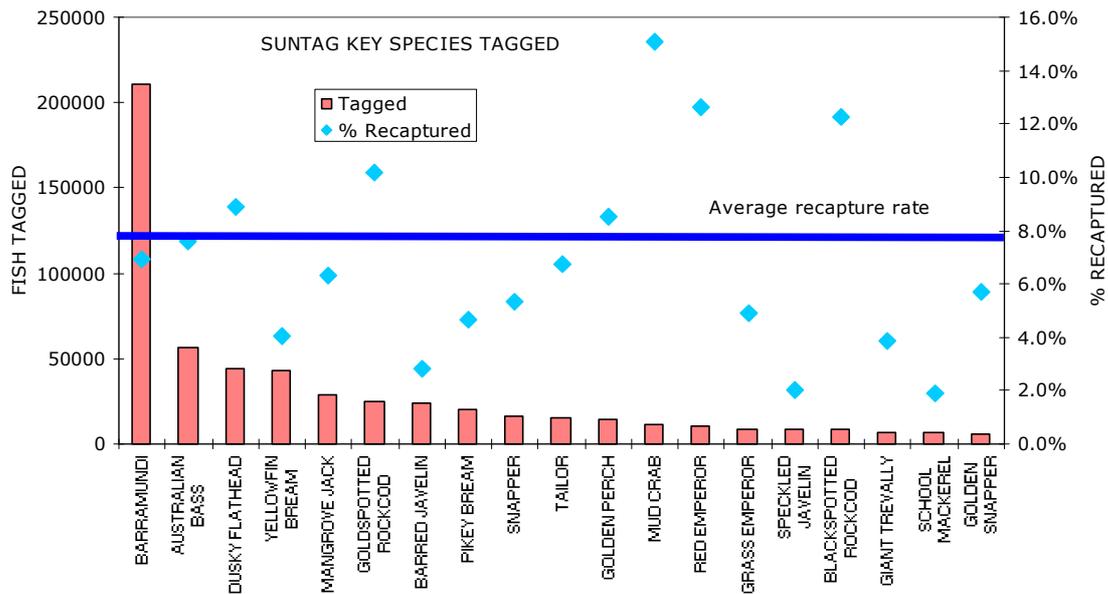


Figure 17: Total numbers of key species tagged and their recapture rate

Suntag Recapture Rate

The Suntag recapture rate has been used for a number of years as a coarse indicator of trends in fishing effort. While there are many factors that influence the recapture rate most of these are near constant from year to year or small in their effect on the recapture rate. The greatest variable is fishing effort and this can be demonstrated by comparing the recapture rate from heavily fished and remote lightly fished locations eg Barramundi in Fitzroy River recapture rate (18.3%) and Weipa (1.7%).

The recapture rate was simply calculated as the ratio of the total number of fish recaptured over time compared with the total number tagged over that same time. Some data that was not typical of fishing effort were excluded.³ The overall long term recapture rate for all fish at the end of 2010/11 was 7.4%.

In previous Suntag reports the recapture rate was shown as an overall and annual rate. The annual rate fluctuated considerably due to annual factors while the overall rate was not responsive enough to recent annual changes. Recapture rates have been aggregated over 5 year intervals to provide an alternative view.

Figure 18 shows the overall and yearly recapture rates from 1985/90 to 2010/15 for all fish. This suggests that fishing effort peaked from 1990-2000 and fell significantly during the period 2000/05 and then has risen slightly again in the past 5 years.

The data for 2010/15 only represents the data for 2010/11 which is subject to significant annual fluctuations. The recapture rate for the last year was 4.5% however this may have been the result of reduced fishing effort due to extensive flooding and cyclones over the summer period.

³ Data from fish tagged in no fishing zones (green zones) in Keppel Bay in 2007/08 and Mud Crab were not reflective of normal fishing effort and were excluded

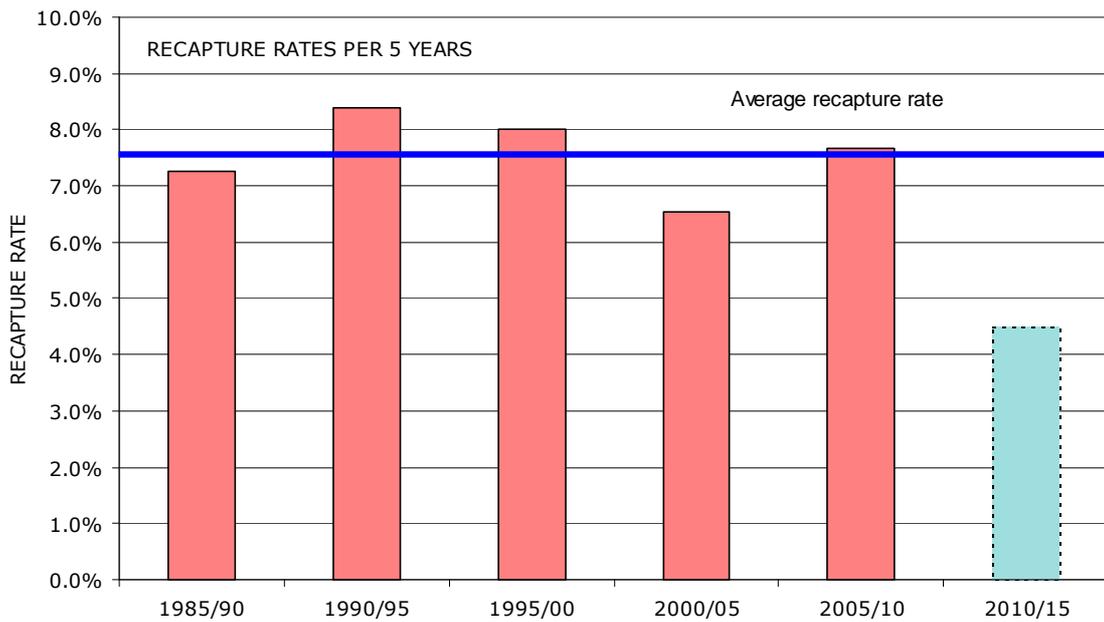


Figure 18: Recapture rate from 1985-2010 per each 5 year period

Figure 19 shows the participation rate in recreational fishing in Queensland obtained from the Rfish surveys undertaken by Fisheries Queensland.⁴ This shows a similar drop in participation (and probably fishing effort) from the late 1990s to the mid 2000s. FQ are currently undertaking another statewide survey and that should provide a further comparison when the participation rate from that survey is available.

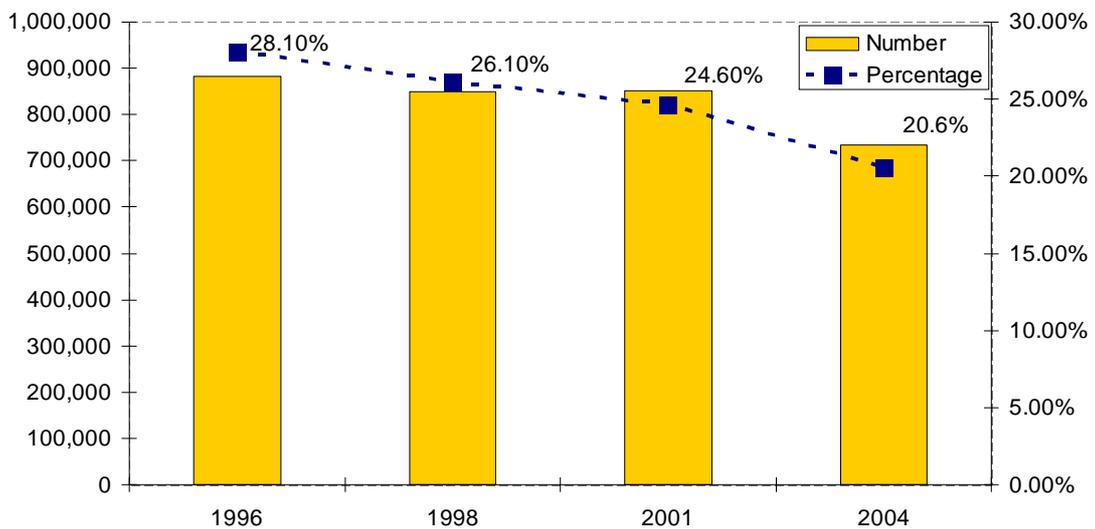


Figure 19: Participation rates in recreational fishing in Queensland from the Fisheries Queensland Rfish program

⁴ Rfish data supplied by Fisheries Queensland

Suntag Released Fish Rate

The rate that recaptured tagged fish are released each year allows the trend in the numbers of fish released to be monitored over time. The released fish rate has been calculated by comparing the number of recaptured tagged fish that are released to those that have been kept each year, however the analysis does not take into account whether the fish was of legal size or not.

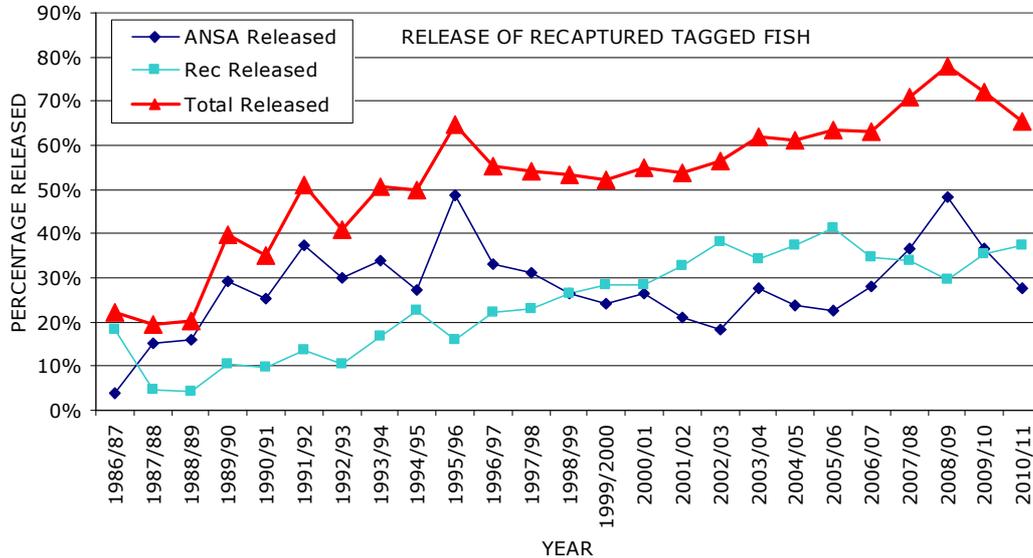


Figure 20: Percentage of recaptured tagged fish released by recreational fishers

Figure 20 shows a comparison of the release rates for ANSA members, recreational fishers other than ANSA members and the combined rates. There is a clear trend among non-ANSA fishers towards releasing more fish with the overall release rate for the past 8 years at over 60% and over 70% from 2007/08 to 2009/10. ANSA members have had a consistently high release rate of tagged fish of over 90% since 1990/91. For the last 10 years the release rate by recreational fishers has ranged from 30-40%.

Suntag Tagging Awards

Suntag provides a number of awards to recognise the efforts of its top taggers.⁵ These awards are important in providing recognition for the contribution of individuals. The awards are:

- Tagging Excellence Award (tag a minimum number of fish for 2,000 points)
- Tagging Achievement Award (tag a minimum number of fish for 200 points)
- Frequent Tagger Award (tag a minimum of 1,000 fish)
- Phil Books Award (tag the most fish in any fishing year)

Table 1 shows the taggers that qualified for Tagging Excellence Awards (TEA) during 2010/11. There have now been 77 Tagging Excellence Awards provided to taggers.

A total of 44 taggers qualified for Tagging Achievement Awards (TAA) during 2010/11. There have now been 1,383 Tagging Achievement Awards provided to taggers.

⁵ Details of all Suntag awards and recipients are available from the Infofish Australia website at www.info-fish.net

Tagger	Species	TAA Year	TEA Year	Fish	Points
BOB STITT	Barramundi	2004/05	2010/11	803	2409
GLEN BAKER	Snapper	1992/93	2010/11	679	2037

Table 1: Suntag Tagging Excellence Awards 2010/11

To date 89 taggers have reached the Frequent Tagger milestone of 1,000 fish tagged. Frequent taggers have collectively tagged 238,530 fish in total and that is around 37% of all fish tagged. This year there were 4 taggers joining this group as shown in *table 2*.

Fisher	Club	Fish tagged
TONY VESEL	Gladstone Sportfishing Club	1285
MICK GODBAZ	Captag	1024
ERROLL THOMSON	Gladstone Sportfishing Club	1017
BOB DOVER	Kingaroy Sportfishing Club	1009

Table 2: Suntag Frequent Taggers in 2010/11

The Phil Brooks Memorial Award is in memory of Phil Brooks who was an avid supporter of the tagging program. Each year this award is presented to the person that tags the most fish. The award is a special shield provided by FQ. In 2010/11 Michael Powell (*figure 21*) was the top individual tagger having tagged 1,464 fish for the year to take his overall tally to 4,304 fish tagged. He is now 13th on the list of taggers that have tagged the most fish. The irony of this year's award is that he beat son Daniel who has been the top tagged for the last 3 years.



Figure 21: Michael Powell was the top individual tagger in 2010/11

Mick Dohnt remains as the top individual tagger overall having added 785 fish to his tally which is now 23,119 fish tagged. In 2008/09 Tony Stewart became the second tagger to have tagged over 10,000 fish having now tagged 10,163 fish.

Suntag awards will be simplified in 2011/12 however all awards that have been made to date will stand.

Suntag Data Requests, Reports and Scientific Publications

With the volume of data that is now in the Suntag database there are many significant datasets that are associated with specific projects. Every year there are requests for data from Suntag to be used in technical reports and scientific publications as well as reports associated with community monitoring projects. Many of those reports are now produced in conjunction with other programs such as CapReef (*see section 9*), reports on monitoring of stocked fish (*see section 6*) and reports on fishing competitions (*see section 7*).

In 2010/11 there were 9 technical reports and scientific publications as shown in *table 3* that were published or have been submitted for publication that used data from Suntag.

Report	Authors	Publication
Shoalwater Bay: Fish Stocks in southern creeks entering Shoalwater Bay 2000-10 Report 14	Bill Sawynok	CapReef report Sept 2010
Movement of stocked Barramundi (<i>Lates calcarifer</i>) in Australia: a desktop study	John Russell	FRDC report
Defining the Stock Structure of Northern Australia's Threadfin Salmon Species	DJ Welch et al	FRDC project final report 2007/032
Adapting to Change: Miminising uncertainty about the effects of rapidly-changing environmental conditions on the Queensland Coral Reef Fin Fish Fishery	Andrew Tobin et al	FRDC project final report 2008/103
Effects of Local Climate on Recreational Fisheries in Central Queensland Australia: A guide to the impacts of climate change	William Sawynok and John R Platten	American Fisheries Society Symposium 75: 000-000, 2011 (in press)
A Strategic Plan for Recreational Sportfishing Tourism Development in the Weipa/Western Cape Area	Barradave Sportfishing Service	Report prepared for the Western Cape Chamber of Commerce March 2011
Fish with a Past	Julian Cribb	FRDC Fish magazine March 2011
Using acoustic telemetry to identify movement patterns and residency of large stocked Barramundi after they have been relocated into an open estuary system	Amos Mapleston	James Cook University Fishing and Fisheries Research Centre April 2011
FRDC project 2008/103 - Adapting to Change: Minimising uncertainty about the effects of rapidly-changing environmental conditions on the Queensland Coral Reef Fin Fish Fishery	A Tobin et al	JCU Fishing and Fisheries Research Centre Technical Report No 11 2010

Table 3: Technical Reports and Publications using Suntag data in 2010/11

7. Visualising Suntag through Google Earth

With the volume of data held in the Suntag database it was decided in 2010/11 to start the development of tools that would allow the visualisation of data on Google Earth. While the development of the tools is still in the early stages there are now 2 early products that show tagging effort and fishing catch and effort. *Figure 22* shows numbers of fish tagged at each location in the Fitzroy River from 2000-2011 while *figure 23* shows estuary fishing effort from the Port Alma boat ramp from 2007-2011.

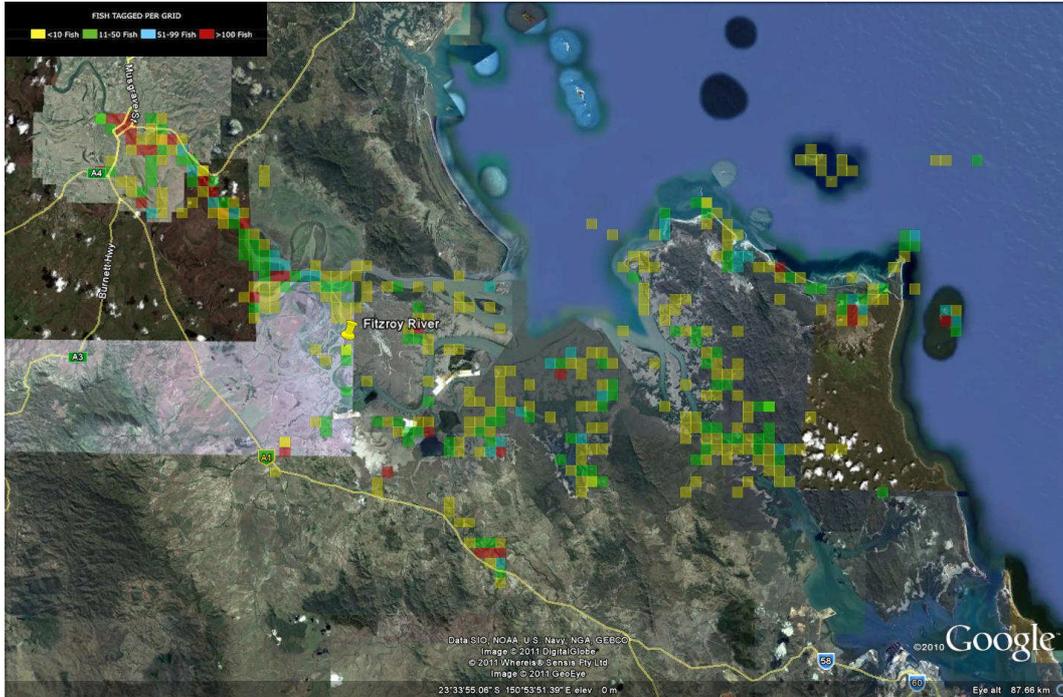


Figure 22: Where fish were tagged in the Fitzroy River area from 2000-2011

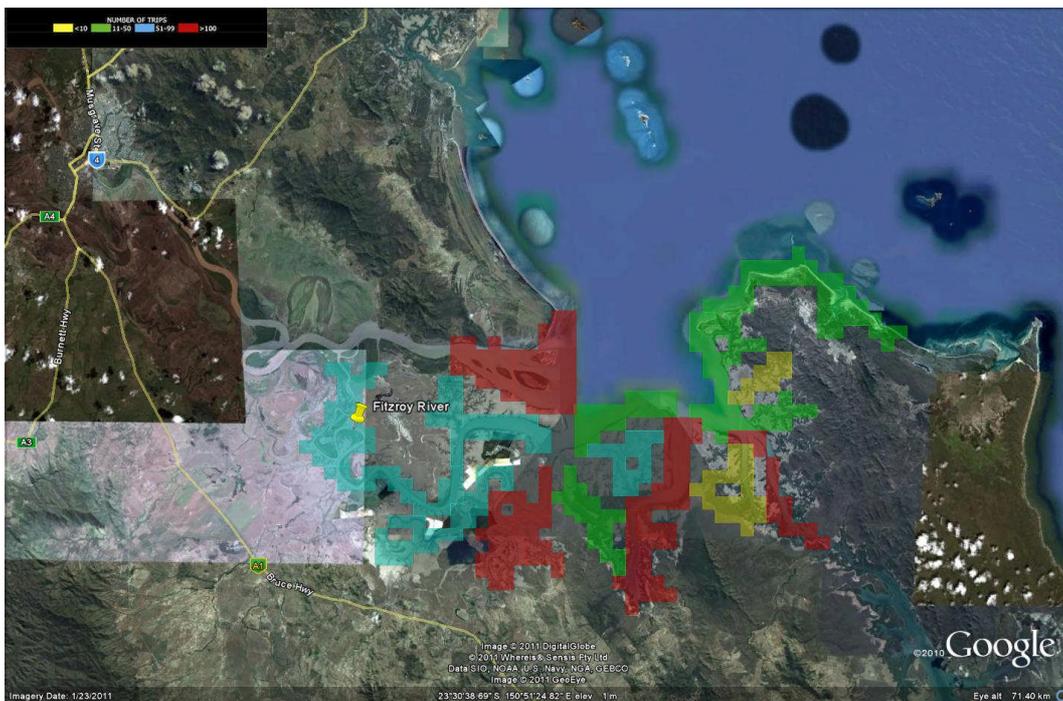


Figure 23: Fishing effort for fishing trips from the Port Alma boat ramp from 2007-2011

8. Stocktag - Support Monitoring of Stocked Fish

During 2007/08 funding of \$40,000 was provided to assist groups to tag stocked fish to increase monitoring of these fish. That funding became available in 2008 and increased the level of tagging of stocked fish as part of monitoring of stocked fish. The funding enabled tags and tagging equipment to be provided free of charge to stocking groups or those targeting stocked fish. Funding continued until 2009/10 with no further funding in 2010/11. Some fish stocking groups continued to tag in 2010/11 with tags from previous years and limited support was provided to these groups.

9. Fishing Competitions Involving Tagging

During 2010/11 there were 5 fishing competitions that included tagging as part of the competition. These were:

- Carlton Mid Rich Fish in Queensland, Western Australia and Northern Territory
- Rocky Barra Bounty in Fitzroy River
- Boyne Tannum Hookup at Boyne Island
- Bundaberg VMR at Burnett Heads

The Carlton Mid Rich Fish competition was initiated by Carlton and United Breweries (CUB) and ran from August to December 2010 and is the largest competition that Infotag Australia has been involved in. It involved tagging of around 10 fish with special Rich Fish two colour tags (*figure 24*) at a number of locations in Queensland, Western Australia and the Northern Territory. Locations were:

Queensland
Moreton Bay
Gold Coast
Bundaberg
Rockhampton
Townsville

Western Australia
Perth
Geraldton
Broome
Bunbury

Northern Territory
Darwin
King Ash Bay

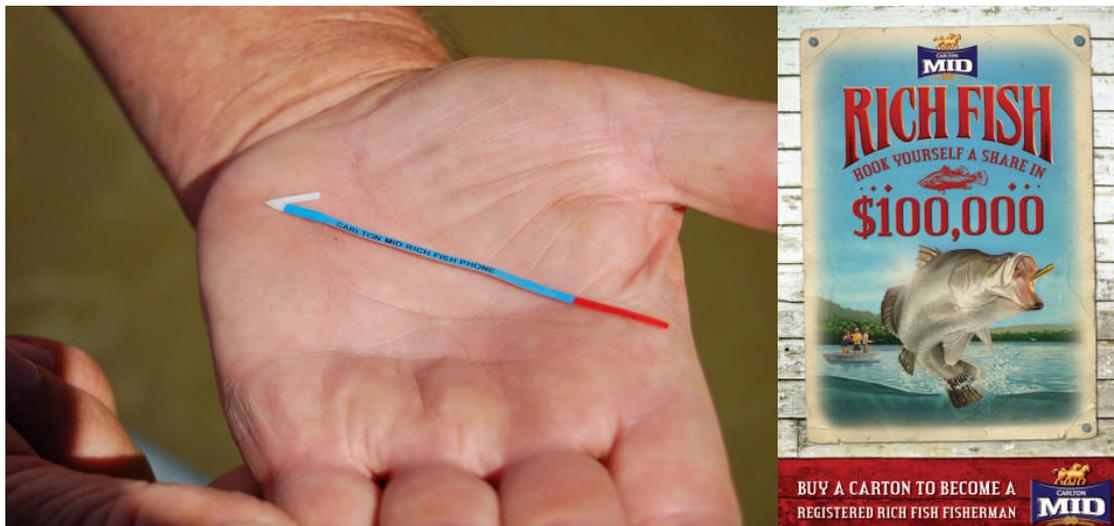


Figure 24: Rich fish tag and promotional poster for the Carlton Mid Rich Fish competition

Fishers needed to purchase a carton of special Rich Fish Carlton Mid beer which included a unique registration number and then register at www.carltonmidrichfish.com. They were then eligible to collect a prize if they caught a Rich Fish. A total prize of \$100,000 (*figure 24*) was on offer with \$10,000 for the first fish caught at each metropolitan location and \$5,000 for the first fish caught at each regional location. Subsequent fish caught were

eligible for a Shimano Fish Pack. Fish were tagged at each location in accordance with Suntag tagging instructions and each fish was photographed (*figure 25*). The Suntag database was upgraded so that photos of individual fish could be included with the tag record and details of tagged fish were also available from the Rich Fish site.

During the period of the competition there were Rich Fish recaptured at Moreton Bay (2 fish), Geraldton (2 fish), Broome and Bunbury. Remaining prize money was given away in lucky draws at the end of the competition with all those registered being eligible. A Rich Fish tag was also recovered from a fish kill in Rockhampton (not claimed) and another fish was recaptured in Moreton Bay but the tag was lost before the prize could be claimed. After the event there was a fish recaptured at Bundaberg.



Figure 25: Each fish tagged in the Rich Fish competition was photographed

The Rocky Barra Bounty targets Barramundi in the Fitzroy River and is held in October each year. The event has been going for 12 years however due to flooding in September and October 2010 the event was cancelled. However a smaller 1 day Carlton Mid Weekend Bounty was held in adjacent lagoons which were not affected by the flooding.

The Rocky Barra Bounty is a tag and release only event with fish tagged and released where caught with a photograph providing evidence of the catch. It has received a 5 star rating under the NEATFish competition accreditation system (see www.neatfish.com). Further details of the event are available from www.rockybarrabounty.com.

Over the 12 years of the event there have been 1,447 Barramundi tagged and with other eligible species total fish tagged are 2,240.

A summary report on the results of the competition is available.⁶ *Figure 26* shows the effort required to catch a Barramundi or a fish in each year of the event. While the effort required to catch a fish in each event has remained steady, the effort required to catch a Barramundi has varied significantly. The result for 2010 is not comparable to the previous years due to fewer competitions, a shorter fishing time and locations not including the river.

⁶ "Rocky Barra Bounty Results 1999-2009" available from the Infish website at www.info-fish.net

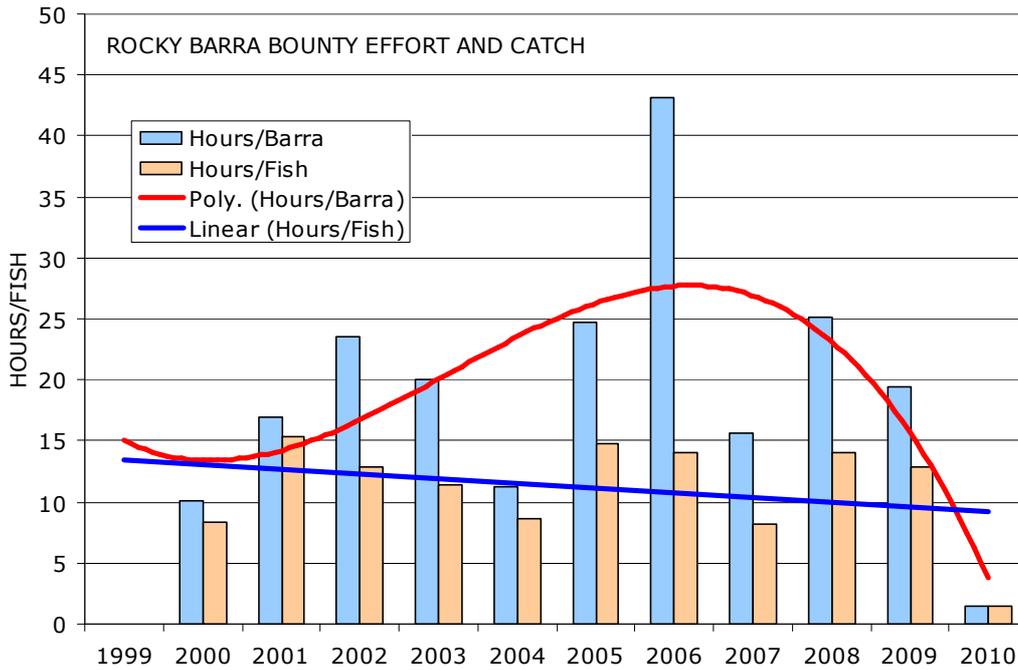


Figure 26: Effort and catch in the Rocky Barra Bounty fishing competition from 2000-2009

The Boyne Tannum Hookup is one of the largest fishing competitions in Australia with around 3,000 participants held in June each year. Since 2000 the Gladstone Sportfishing Club has managed a live weigh-in component for this event with these fish being tagged. A total of 3,079 fish have been tagged in that event since 2000. Since 2005 CapReef has also been collecting catch and effort data during the event and has collected details on 1,730 fishing trips. CapReef has produced a report on the event looking at the impact of the competition on local fish stocks.⁷

Figure 27 shows the catch rates for both total fish caught and fish kept for each year of the Hookup from 2005 to 2010. Figure 28 provides a comparison between the kept fish catch rate in the event compared to the CapReef catch rate in the same season. This indicates that catch rates during the competition are similar to the overall catch rates in the area.

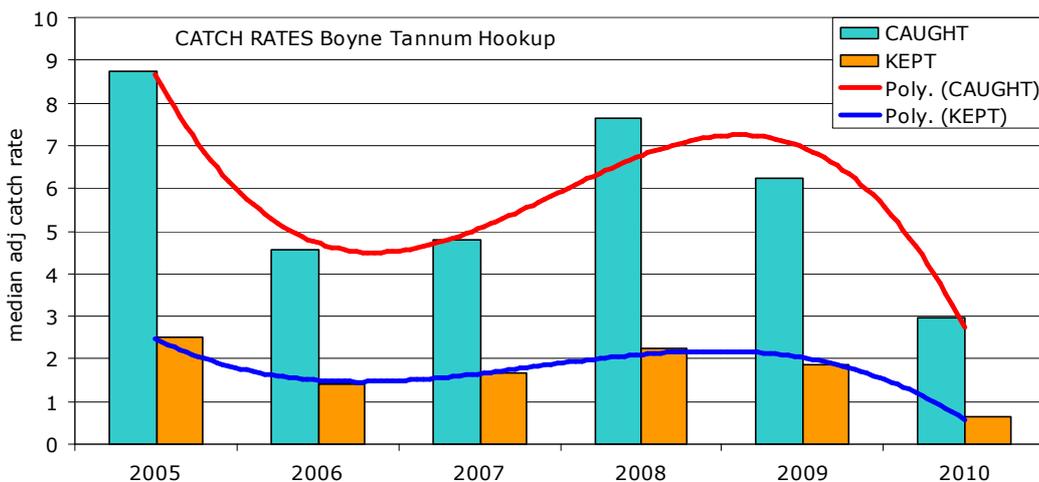


Figure 27: Catch rates in the Boyne Tannum Hookup from 2005 to 2010

⁷ "Boyne Tannum Hookup - Do fishing competitions impact local fish stocks?" available from the Infofish website www.info-fish.net.

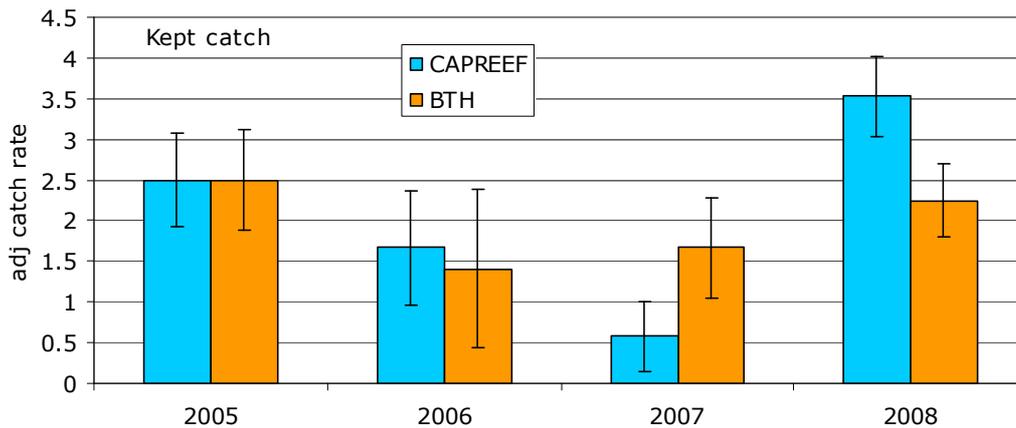


Figure 28: Comparison of catch rates in the Boyne Tannum Hookup and the CapReef catch rate in the same season

The Bundaberg VMR Fishing Competition held in June each year also has a live weigh-in section and for the last 4 years fish presented at the weigh-in have been tagged and released by the Bundaberg Sportfishing Club. A total of 278 fish have been tagged in the 4 events.

10. Catch and Effort

From 1996/97 Suntag extended its data collection to obtain complete details of fishing trips undertaken by taggers. This covers estuary, offshore and freshwater fishing and provides catch and effort data for those participating. In 2005/06 with the introduction of the Infofish 2006 database this significantly improved the collection on catch of effort data. From that time the calculation of catch and effort has been confined to a number of clubs that have provided consistent data since then. Catch and effort has now only been collected for those clubs which are:

- Brisbane Sportfishing Club
- Captag
- Gladstone Sportfishing Club
- Bundaberg Sportfishing Club
- Ipswich United Sportfishing Club
- Queensland Sportfishers

Effort is measured by the total time at or on the water, which includes travel time on the water and any time spent collecting bait or doing other things. This is considered to be the simplest means of collecting time and has proven to provide consistent data. This provides a lower catch rate than if fishing time only were used.

SUNTAG CATCH SUMMARY

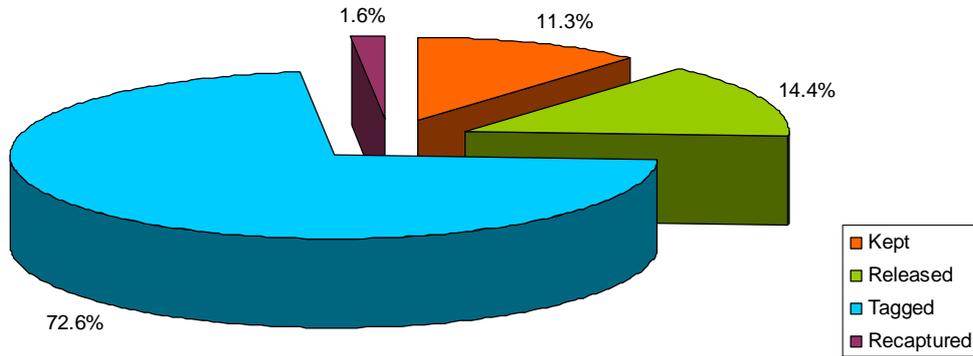


Figure 29: Summary of Suntag catch by fate of fish

A total of 16,974 trips have now been recorded for Suntag taggers providing trip details up to 2004/05 and for the participating clubs since then. The total time spent fishing is 155,870 hours for 195,125 fish caught or 1.25 fish per hour of effort.

In 2010/11 the average Suntag tagger trip was 1.5 fishers fishing for 7.0 hours. On each trip there was an average of 10.1 fish caught of which 1.0 fish were kept.

Figure 29 shows the fate of fish caught by Suntag taggers. On average 11.3% of fish caught by Suntag taggers are kept while 72.6% are tagged and 14.4% are released without tags.

Figure 30 shows the overall catch per trip for participating taggers. The change from 2005/06 reflects the change in the source of the data used to calculate catch and effort. In 2010/11 the total number of fish caught per trip was lower than in the previous 4 years while the number of fish kept has dropped from a high of 2.4 in 2007/08 to 1.0 in 2010/11.

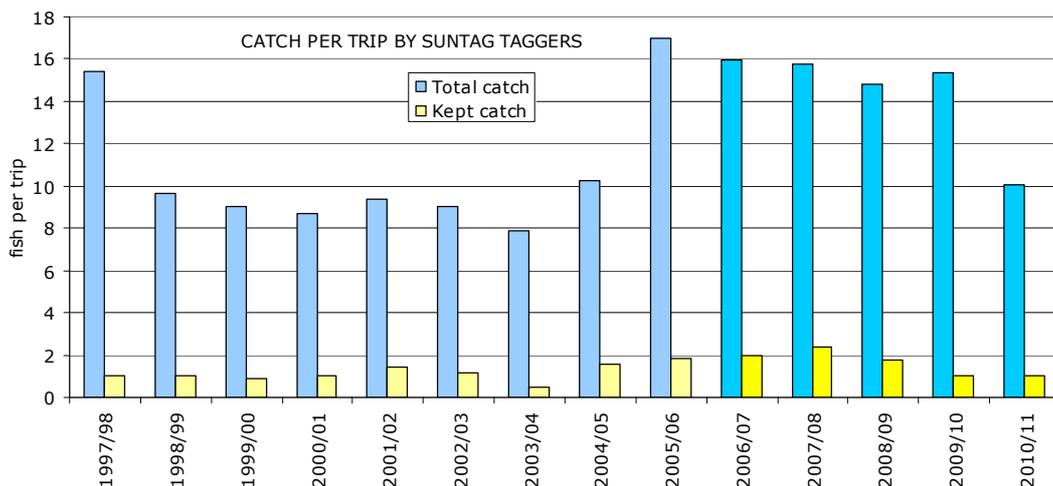


Figure 30: Fish caught and kept by Suntag taggers per Suntag trip

11. Community Monitoring - CapReef



This project was established in 2005/06 as a community monitoring program of recreational fishing following the rezoning of the Great Barrier Reef Marine Park and a new management plan for the Coral Reef Fin Fishery in 2004. This project involves all ANSA clubs, some deep sea clubs, other fishing clubs and other community groups in the area.

Data on recreational fishing included catch and effort, social impact of change and expenditure on recreational fishing were collected in the 4 years to the end of 2008/09. Baited Remote Underwater Video (BRUV) was also used to collect fishery independent data and this included obtaining data in fishing and no fishing zones (under permit from GBRMPA).

Data collected through CapReef are maintained in the Suntag database. Fishing trip details were obtained for almost 16,000 trips from winter 2005 to autumn 2009.

There were 15 reports on various aspects of CapReef produced and at the end of 2008/09 a summary report covering all the data collected over the previous 4 years was produced. The report is titled "CapReef: Recreational Fishing and Fish Resources in Central Queensland 2005-09"⁸ as shown in *figure 31*.

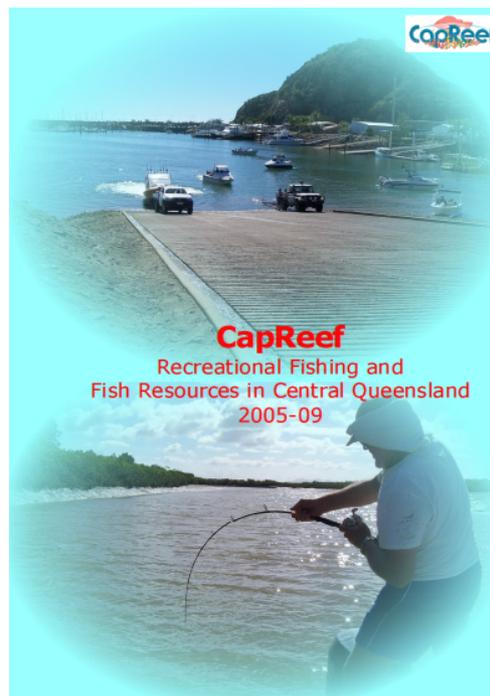


Figure 31: CapReef summary report 2005-09

The report provided an assessment of the status of fish stocks in Central Queensland and concludes that there has been an overall increase in the numbers of offshore, estuary and freshwater species from 2005/06 to 2008/09. The improvement was likely to have been the result of good recruitment by a number of species as a result of flooding in 2008.

While stocks had generally improved there was concern for a number of species. There were 4 Mackerel species (School, Spanish, Spotted and Grey), Longfin Rockcod and Barramundi.

⁸ Available from www.info-fish.net

A follow on project to CapReef is the "Crystal Bowl" which is about developing the capacity the capacity to predict Barramundi stocks in the Fitzroy River. This project was funded by FRDC in 2010/11 (see section 13). Another project will get underway in 2011/12 to monitor recreational fishing trends in Gladstone Harbour which is being funded by the QGC Social Investment Program.

12. Community Monitoring - King Ash Bay

A two year project to monitor Barramundi in the McArthur River in the Gulf of Carpentaria in the Northern Territory commenced in 2009/10. The project is being undertaken with the King Ash Bay Fishing club and funded by the McArthur River Mine Community Benefits Trust. The project involves collecting catch and effort, tagging and recruitment data on Barramundi. Data collected in this project is being stored in the Suntag database.

The project is still in progress however data have been collected on catch rates from winter 2009 to autumn 2011 and some preliminary analysis has been made. *Figure 32* shows the break up of where people come from to fish at King Ash Bay. The majority of fishers come for states other than the Northern Territory with Queenslanders making up 44.9% of those fishing there.

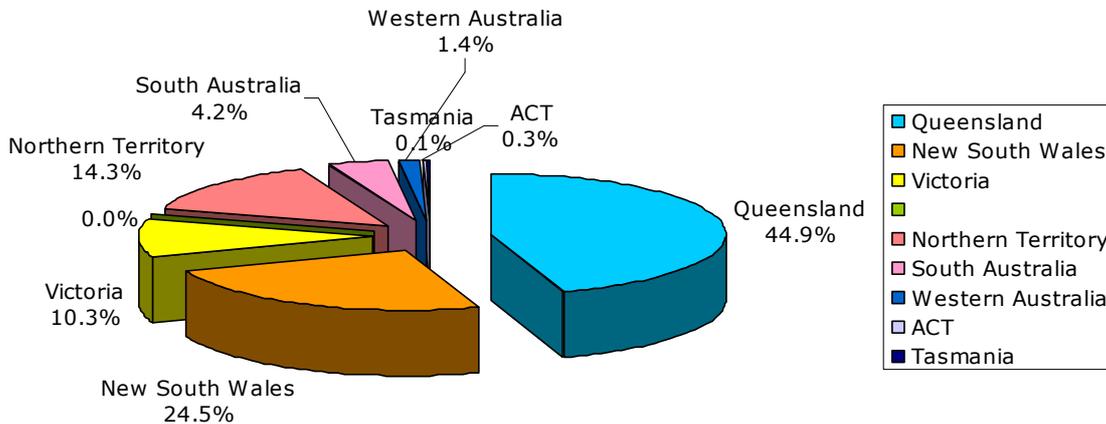


Figure 32: Fisher trips at King Ash Bay based on state of origin

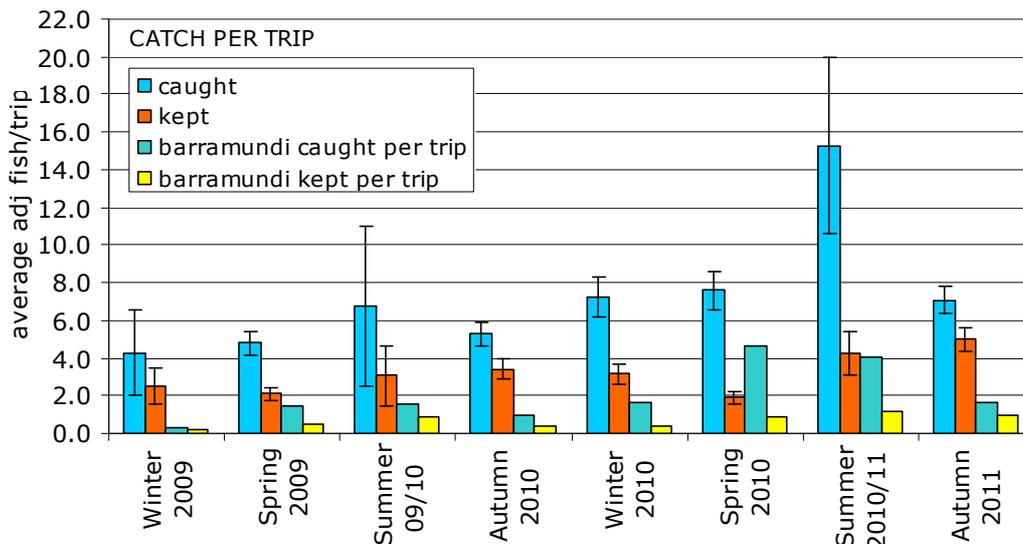


Figure 33: Adjusted catch rates per trip for fish caught and kept in the McArthur River

Figure 33 shows the adjusted overall catch rates per season for fish and Barramundi caught and kept. Figure 34 shows the size range of recreationally caught Barramundi measured in the McArthur River. There is no commercial netting of Barramundi in the river.

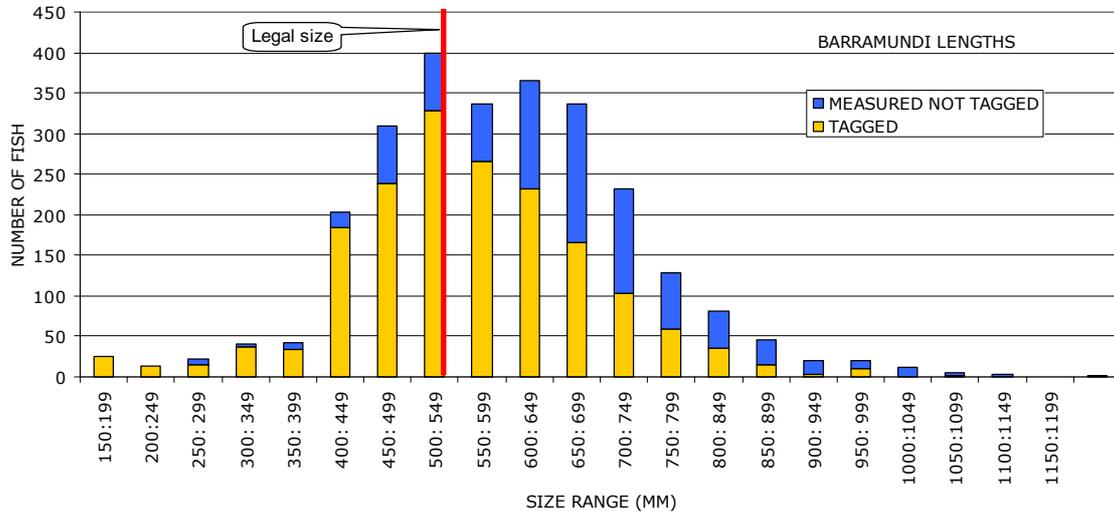


Figure 34: Size range of Barramundi measured in the McArthur River

A website and Facebook page have been established to promote the project at <http://www.info-fish.net/kingashbay/>. The website also allows fishers to submit fishing trip details online.

13. Community Monitoring - Crystal Bowl



A 1 year project titled Topping up the "Crystal Bowl" for Barramundi was funded by FRDC. This project was to collect commercial and recreational fishing data in the Fitzroy River to provide a baseline to assess the impacts of proposed coal port developments and to provide a factual basis for any move to regional management in the Fitzroy River. This project is nearing completion and a report will be available shortly (figure 35).

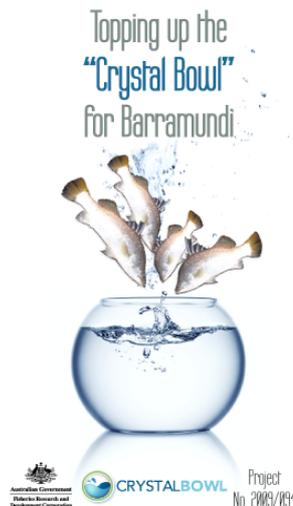


Figure 35: Topping Up the "Crystal Bowl" for Barramundi report

While the data collected during the project was for 2010/11 the report covers data collected from 2000-2011. That allowed a review of the fishery during the dry period from 2003-07 and the wet period from 2008-11.

Funding from FBA has been made available from a Caring for Our Country grant to keep the data collection and community engagement going through to the end of 2011/12.

14. Released Fish Survival

There are now 27 species (*figure 36*) where the survival rate of released fish has been estimated from research experiments. The types of experiments have varied widely with many variations in results however the estimated survival rates are considered to be a reliable estimate.

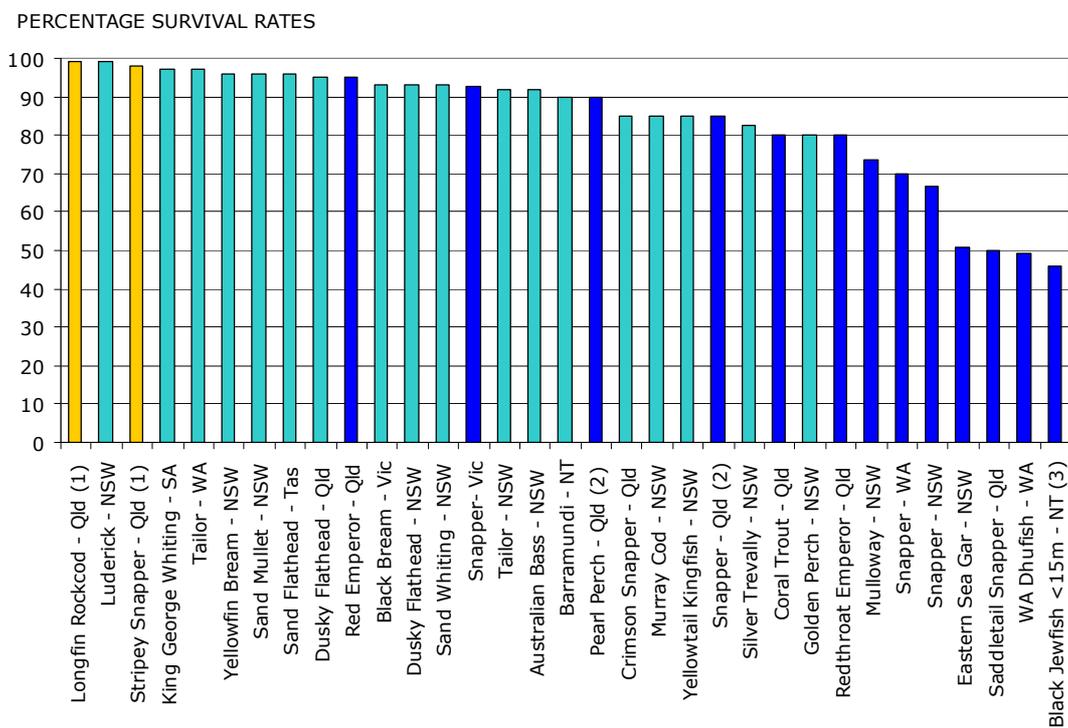


Figure 36: Survival rates from research for key Australian recreational fish species

In *figure 36* species shown in yellow and blue are reef species that when caught, particularly from depths greater than 15-20m, will show the symptoms of barotrauma.

- (1) These are reef species caught in deep water however the survival rates are based on fish caught in shallow water <10m.
- (2) These results are preliminary as the work is still in progress and the final results may be different.
- (3) The research indicates that the survival rate for fish from greater than 15m was near zero.

Best Practices

The 3 simple best practices that will have the most effect on maximising survival of released fish to the greatest extent are:

- ❑ Minimise fish playing time and handling time to the shortest time possible.
- ❑ Use hooks and fishing techniques that minimise deep (gut) hooking of fish.
- ❑ Use knotless landing nets to land fish that are to be released.

For deep water (particularly reef) species there is an additional best practice:

- ❑ Learn to recognise the symptoms of barotrauma and how to deal with it.

Deep Hooking

Deep hooking has been recognised as a major contributor to mortality of fish. Since 2003/04, Suntag is continuing to collect data from taggers on hooking locations to assess the level of deep hooking. *Figure 37* shows how hooking locations are categorised in Suntag. Deep hooking is where hooks are lodged in the throat (or gills) or gut.

A total of 68,395 hooking locations have been recorded by Suntag to 2010/11. *Figure 38* provides a summary of hooking locations for using bait or lure. The overall rate of deep hooking is 6.6% while for bait it is 11.1% and for lure it is 1.7%. *Table 5* provides a summary of hooking locations for a range of popular species caught on both bait and lures.

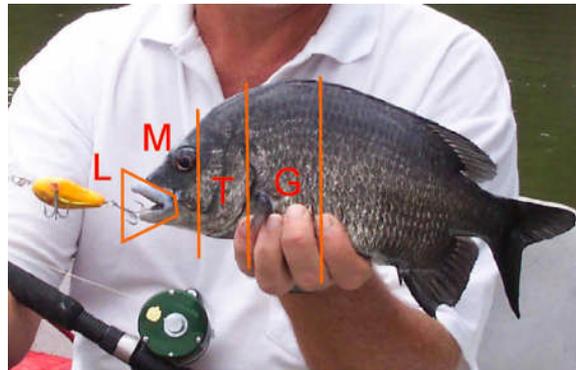


Figure 37: Recording of hook locations and where hooks are lodged in fish using bait and lure

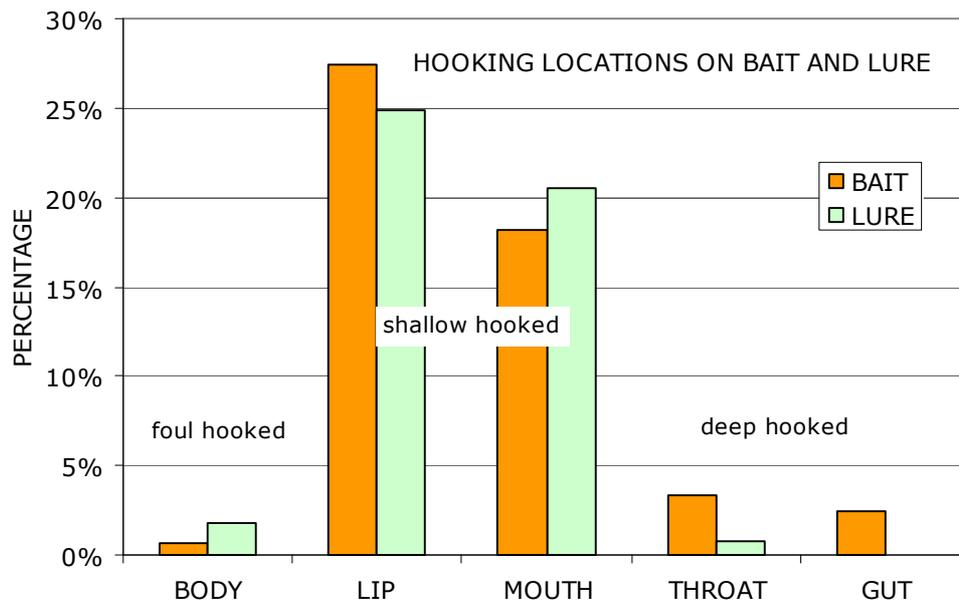


Figure 38 : Summary of hooking location using bait or lure recorded by Suntag

Species	Bait		Lure	
	No of Fish	Deep Hooked	No of Fish	Deep Hooked
Barramundi	693	12.1%	11928	1.8%
Yellowfin Bream	8924	11.9%	1532	0.5%
Dusky Flathead	701	30.1%	6607	2.3%
Red Emperor	1518	8.0%		
Goldspotted Rockcod	1372	15.7%	2925	1.8%

Table 4: Summary of deep hooking rates for a number of popular species

Dealing with Barotrauma

Symptoms of barotrauma are:

- Swollen and hardened stomach (mild symptom)
- Stomach protruding from mouth (severe symptom)
- Bulging eyes (severe symptom)
- Bubbles in the blood if the fish is bleeding (severe symptom)
- Raised scales standing out from body (severe symptom but only on some species)
- No symptoms visible (for fish from very deep water may indicate that the swim bladder has burst)

While there are differing views on dealing with barotrauma, and some of the research is inconclusive as to its benefits, fishers are still encouraged to deal with it (especially if they have the skills in the release methods). Methods for dealing with barotrauma:

- No treatment (generally OK for fish from shallow water <15m)
- Venting gases from swim bladder with a hollow needle (needs knowledge of where to vent).
- Use a release weight to get the fish back down to the bottom.
- Use a bottomless cage to return the fish to depth.

Equipment for venting, release weights and cages is available to a limited extent commercially however many fishers improvise, sometimes using inappropriate tools such as a fishing knife for venting.

15. Support for Research Projects

As well as the projects already mentioned Suntag in Queensland provides support to a number of research projects. That support is generally in the form of collecting tag and recapture data, long term data storage, and in some projects assistance with the tagging.

In 2010/11 Suntag supported the following research and monitoring projects:

- Snapper, Teraglin and Pearl Perch research by FQ
- Mud Crab tag and recapture data in the Barron River by Holloways Beach Environment Education Centre
- Barramundi and Mangrove Jack in the Johnstone River by FQ
- Golden Perch in the Fitzroy Basin rivers by DERM
- Queensland Lungfish and other species being monitored in the Burnett River by FQ
- Stocked Bass in Lake Samsonvale at Brisbane by SEQ Water
- Environmental impacts of stocked Barramundi research by FQ
- Mud Crab and fish in Moreton Bay by CSIRO
- Fish tagging in the Lake Eyre Basin by DERM

16. Historical Tagging Data

In 2003/04 as part of the stock assessment of Tailor old tag datasets were captured and incorporated into the Suntag database. This included tagging records from the late 1980's and also data from the 1970's. Data was uploaded to the Suntag database progressively from 2004/05. This provides a single tagging dataset for Tailor that can be interrogated.

Due to funding constraints no additional historic tagging data was added in 2010/11.

17. Where to in 2011/12?

The Suntag grant was significantly reduced by Fisheries Queensland for 2010/11 and this reduced what could be achieved. Projects to be undertaken in 2011/12 were agreed in conjunction with the reduced Suntag grant.⁹

The Bureau of Rural Resources has undertaken a national review of community monitoring in fisheries and have reviewed 6 monitoring programs. This included 3 programs managed by government and 3 managed by community groups. Suntag and CapReef were 2 of the community programs examined and a report is expected by the end of 2011.

The database and website will continue to be upgraded and development of the visualisation of tagging and other data using Google Earth will continue.

⁹ Details of the projects are available from the Infofish website at www.info-fish.net



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