Suntag Performance Report 2014/15

Table of Contents

WHAT THE FISHING INDUSTRY GETS FROM INVESTMENT IN SUNTAG

Suntag has been providing a service to the fishing industry for almost 30 years since 1986/87. With over 1,130,000 fish records in the database it is now the largest fisheries database in Qld outside government and research institutions and the largest volunteer fisheries citizen science database in the world. Over its lifetime it is estimated that there has been $15-20m invested or provided in kind by government, other funders, researchers, taggers and stocking groups in the data stored in the database.

This year Infofish Australia contributed $74,200 to the running of Suntag. The Suntag grant from Fisheries Queensland was $40,000. Total investment in cash and in kind contributions was $707,200 or $16.70 for every grant dollar. Infofish Australia and ANSAQ believe that there are few other examples of such a multiplier on investment within the Queensland fishing industry. The return on investment in improved knowledge of fish stocks is also substantial although not quantified, however with over 20,000 downloads of Suntag reports and a total reach of 300,000 through Facebook posts on Suntag and Crystal Bowl the knowledge spread has been substantial.

Where Suntag is at has been achieved by providing a high quality service using the latest technology that is responsive to industry needs. The focus of Suntag and its various associated projects has shifted towards being able to predict fish stocks into the future, through a Crystal Bowl approach, in a way that provides information to the industry that can be used to determine the level of future investment in a particular fishery. This commenced with Barramundi in the Fitzroy River in 2011 and extended to Gladstone in 2014. It was extended to King and Blue Threadfin in the Fitzroy River and Mulloway in Moreton Bay in 2015. The aim is to develop the Crystal Bowl at as low a cost as possible, otherwise it will not be sustainable. To achieve this there has been an increased emphasis on collecting data on recruitment of key species.

Having a world-class data collection and storage system ensures that quality data are available however that data needs to be available in a variety of formats to the fishing industry and government to assist in dealing with real world issues that affect the industry and our fisheries. Websites, Facebook pages, Google Earth, video clips and podcasts extend the suite of information formats now used to share information.

A new more integrated approach to information sharing was introduced last year. Facebook pages for Suntag, Crystal Bowl, Gladfish and King Ash Bay became the media for reporting interesting recaptures in near real time. Suntag Mini-reports, videos and interactive views of the data using Google Earth were introduced to the Suntag and Crystal Bowl websites and feature species, locations, timescales, issues or all of those to tell some of the interesting stories from the database. The websites were expanded to provide tagging groups with a page on their own tagging efforts direct from the database in real time. The Suntag News bulletin was revamped to an online news format to promote the mini-reports and other interesting information.

SUNTAG PERFORMANCE REPORT 2014/15

1. SUNTAG HIGHLIGHTS 2014/15

This report provides a summary of what Fisheries Queensland and other contributors have received for their investment in Suntag and what has been provided to the fishing industry and the community.

The Suntag database now represents one of the largest long term investments in fisheries data in Queensland outside of the Queensland Government. At the end of the year the total number of fish records in the database has increased to 1,131,000 with 41,700 added in 2014/15. The database contains details of:

- ✦ 737,700 tagged fish
- ✦ 56,300 recaptures
- ✦ 43,000 fishing trips with catch and effort
- ✦ 287,800 other fish from catch records
- ✦ 790 recruitment surveys
- ✦ 47,300 fish from recruitment surveys
- ✦ 3,000 photographs of tagged and recaptured fish

Suntag shared its information with the fishing and broader community through:

- ✦ 25 Suntag mini-reports and Crystal Bowl reports with 20,000 downloads of reports
- ✦ 2,600 likes of Suntag Facebook page and 480 likes of Crystal Bowl Facebook page
- ✦ 300,000 total reaches through Suntag and Crystal Bowl Facebook posts
- ✦ 272 maps available through Google Earth
- ✦ 7 Suntag enews bulletins to 800 subscribers
- ✦ 473 users registered for Suntag Online
- ✦ 17 website pages with live data from database from clubs and business tagging groups
- ✦ 27 presentations to various clubs and industry groups

This year the database was upgraded to Infofish 2015 to allow data collected during recruitment surveys to be incorporated in the database. Previously these data were stored separately in an Access database and made analysis more complex than it needed to be. This was needed to support an increased focus on recruitment.

Another new initiative was to work with Insight Genesis on the inclusion of tagging data with their mapping of the bottom of impoundments. A trial project was established for Lake Samsonvale.

During the year Suntag supported 15 monitoring programs, research projects and citizen science activities including the Crystal Bowl, Gladfish, Gladstone Healthy Harbour Partnership recruitment monitoring, Fitzroy Partnership for River Health, Calliope Fish Habitat Area proposal, monitoring by fish stocking groups, Westag in Western Australia, Newtag in NSW and more.

2. DATA MANAGEMENT

2.1 SUNTAG ONLINE

Suntag Online is based on an online database (currently Infofish 2015) that is recognised as a world leader. Some of the features of the database that make it world class:

✦ Built using industrial strength database tools
✦ Uses data standards where available (eg standard fish names)
✦ Tagging Manual to Quality Assurance documentation standards available from website
✦ Online access from anywhere in the world with data contributors (taggers/researchers) able to securely access their own data online (read only)
✦ Database linked to Google Earth to allow easy and near real time visualisation of data
✦ Photographs and video stored along with text data
✦ Recaptures can be lodged online through the Suntag website with instant feedback on the fish direct from the database
✦ Recapture certificates sent electronically or by mail to the person that recaptured the fish and the tagger with customised certificates available for some projects
✦ Tagging and other data can be lodged online or via email with 95% of data now lodged electronically
✦ Tagging awards automated providing certificates to recipients
✦ Incorporation of recruitment survey data in 2015 including site details and photographs

Suntag Online was introduced late in 2011/12 to allow taggers to view and monitor their own tagging records and progress towards tagging awards. Access is through a secure login and password. It has been extremely successful in that there are now 473 registered users of Suntag Online.

When taggers log in, they are provided with the top 10 taggers for the month, top 20 taggers for the year, top species tagged for the year and recaptures for the month (*figure 1*). This is automatically updated each time they log in and allows them to keep track of their own and the program's progress.
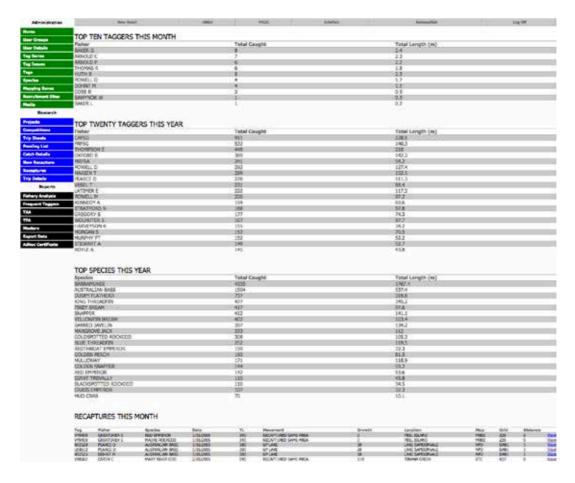
Figure 1: Initial screen when logged in through Suntag Online

2.2 RECRUITMENT SURVEY DATA

Infofish started collecting data on fish recruitment (primarily Barramundi) in Central Queensland in 1999. With the development of the Crystal Bowl to predict fish stocks and the development of report cards on the health of waterways understanding recruitment has become more important.

Previously recruitment survey data were stored in a separate offline Access database but this resulted in some duplicated data and made analysis more complex that it needed to be. This year the recruitment survey data were incorporated into Infofish 2015 making it available online for the first time.

Fish recorded during recruitment surveys are stored in the tag table allowing easier analysis along with other data. Data on the survey sites is also stored in a new table and includes photos of the site and a site map so that all details of the site are stored in the one location. *Figure 2* shows site details of 12 Mile Creek in Central Queensland that is used as a reference site for Barramundi recruitment.

Figure 2: Recruitment site details stored in Infofish 2015

2.3 FISH IDENTIFICATION

To assist with identification of fish species that are tagged, images have been made available by Graham Cumming. These images have been included in the database and are included on the Suntag website. *Figure 3* shows some of the images in the database and *figure 4* shows the images on the website.

Figure 3: Species images in the Infofish 2015 database

Figure 4: Species images on the Suntag website

2.2 FEEDBACK ON RECAPTURES

Tag and recapture certificates are generated direct from the database and can be emailed out to the recipient (those that have email) or printed out and forwarded by smail. There are now 6 certificate templates available for special events (eg Rocky Barra Bounty) as shown in *figure 6* or projects (eg Gladfish) as shown in *figure 5.*

Figure 5: Certificate used for recaptures in the Gladfish project

Figure 6: Templates available for tag and recapture certificates

Reporting of recaptures through the Infofish website was upgraded in 2011/12. There has been a steady increase in recaptures reported through the website (31% in 2014/15 compared with 18% in 2013/14). This is likely to be because of the instant feedback providing the history of the fish, any photos of the fish in the database and a Google map of the tag and location sites as shown in *figure 7.*
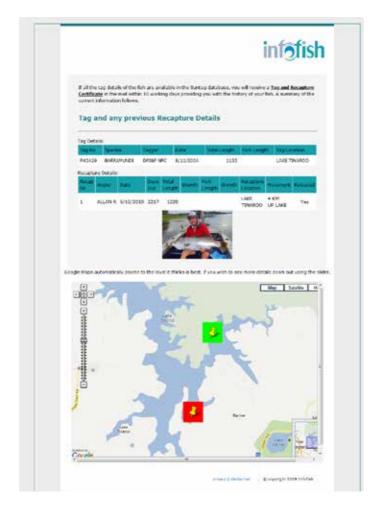

Figure 7: Recapture reported through website

2.3 STORING IMAGES IN THE INFOFISH 2015 DATABASE

Storing images along with the textual data was added in 2011/12. It is being used to track the health of fish in the Gladstone region following fish health issues identified there. Taggers have been taking photos of tagged and recaptured Barramundi to monitor the extent of lesions and other visible health related issues. This year the ability to store a second image was added to the database. There are now 2,972 images (1,333 added in 2014/15) of tagged fish and 209 images (71 added in 2014/15) of recaptured fish. *Figure 8* shows a sample of images of tagged fish stored in the database.
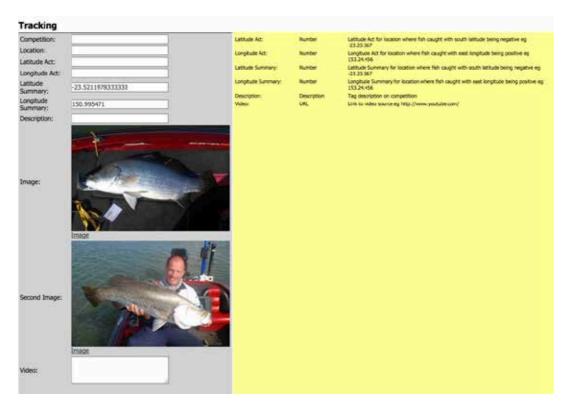

Figure 8: Images (photos or video) of individual fish are stored in the database

2.4 VISUALISING DATA USING GOOGLE EARTH

The database was linked to Google Earth in 2012/13 to allow data to be visualised. Google Earth was selected due to its widespread use by fishers.

Google Earth maps are now routinely generated and stored in the database and can be updated and regenerated at any time. Google Earth maps have been further developed with a time sequence of tagging in an area able to be generated. The time sequence can be set to any desired period or viewed over the entire time scale.

Figure 9 shows the grids for the entire tag records (over 735,000) stored in the database from an altitude of over 2,000km. Data are shown for over 12,000 grids where fish have been tagged. When viewed using Google Earth, clicking on a tag grid will provide a graph

showing the number and size range of fish tagged in each grid or details of a recaptured fish. Google Earth maps associated with Suntag mini-reports are available from the Suntag website.

A total of 272 Google maps have been developed and are available from the database. These maps can be regenerated at any time to reflect the current data in the database.
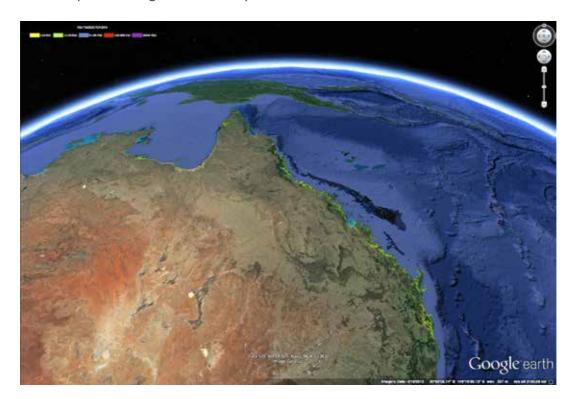

Figure 9: Google Earth map showing all grids where all fish have been tagged from an altitude of over 2,000km

2.5 MOVING FORWARD WITH TECHNOLOGY

Every so often a new piece of technology comes along that makes a big change in how we see the world. Insight Genesis is one such technology.

Suntag tagging maps use grids of 1km^2 partly because in estuaries smaller than that is not very meaningful but also to ensure that specific fishing spots are not published. In impoundments however that big brush masks how the fish use the space available to them.

Enter Insight Genesis from Navico, makers of Lowrance. Insight Genesis is a technology that combines the individual sounding data of fishers and boating enthusiasts into an underwater topographical map.

Using data from Lake Somerset combined with even a crude cut and paste of the Insight Genesis community map the tagging data makes a lot more sense as shown in *figure 10*. What it shows is the way in which the fish stick to the old riverbed. Regular fishers at

Somerset were not surprised but getting a very visual confirmation that the environment and tagging data line up is a big first.
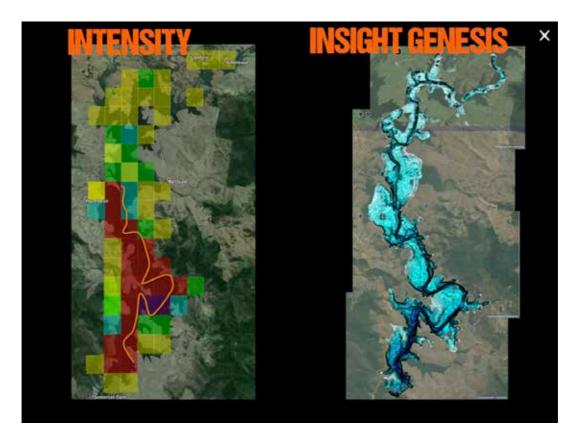

Figure 10: Tagging data in Lake Somerset matches bottom mapping by Insight Genesis

2.6 SUNTAG AWARDS

Suntag awards are provided as a way of recognising the contribution of taggers to Suntag. There are a number of awards provided under Suntag. These are:

- ✦ Tagging Achievement Award (42 achieved in 2014/15)
- ✦ Tagging Excellence Award (3 achieved in 2014/15)
- ✦ Frequent Tagger Award (3 achieved in 2014/15)
- ✦ Phil Brooks Memorial Tagging Award

Taggers that use Suntag Online can look up their progress towards awards. When a particular award is achieved the system sends an email to the tagger, Infofish Australia and ANSAQ Records Officer. Recipients can then log in and print their own certificates or request a certificate from Infofish Australia. They can also print certificates for old awards where the certificate was never received, lost, destroyed or damaged. Certificates include a photo of the species for the particular award as shown in *figure 11*. For those taggers without access to Suntag Online an email is sent to Infofish Australia and the certificate can be emailed or printed and sent in the mail.

Figure 11: Tagging Achievement Award certificate for Murray Cod

3. INFORMATION DISTRIBUTION

3.1 WEBSITES

Infofish Australia manages a number of websites linked to Suntag. *Figure 12* shows the homepage of the Suntag website. Websites are:

Infofish Australia	www.info-fish.net
Suntag	www.info-fish.net/suntag
Suntaggers	www.suntaggers.com
Crystal Bowl	www.info-fish.net/crystal-bowl
Rocky Barra Bounty	www.rockybarrabounty.com
Mulloway Marathon	www.mullowaymarathon.com.au
Gladfish	www.info-fish.net/gladfish
CapReef	www.info-fish.net/capreef
King Ash Bay	www.info-fish.net/king-ash-bay

Figure 12: Home page on the Suntag website

3.2 FACEBOOK PAGES

Infofish Australia manages a number of Facebook pages that are linked to Suntag. Facebook pages are:

Suntag   www.facebook.com/Suntag.Queensland
Crystal Bowl   www.facebook.com/infofish.crystal.bowl
Gladfish   www.facebook.com/Gladfish
King Ash Bay   www.facebook.com/king-ash-bay
Rocky Barra Bounty   www.facbook.com/RockyBarraBounty
Mulloway Marathon   www.facebook.com/mullowaymarathon

Figure 13: Interesting recaptures reported through the Facebook page

The Suntag Facebook was introduced in 2011 and Crystal Bowl page in 2012 to provide information on interesting recaptures and other information as shown in *figure 13.* This allows information on fish to be provided more quickly and to a much wider audience.

For the year there were 72 posts on the Suntag Facebook page with 2,603 likes (948 In 2013/14). Total reach for 2014/15 was 252,000 with an average reach of 3.500 and a maximum reach of 13,400 for a single post.

For the year there were 48 posts on the Crystal Bowl page with 470 likes. Total reach for 2014/15 was 43,400 with an average reach of 900 and a maximum reach of 7,760 for a single post.

3.3 SUNTAG ENEWS

Facebook has become the prime means of reporting on interesting recaptures of fish along with other interesting snippets of information related to fish. This led to a review of the Suntag News bulletin. After 200 editions of the bulletin in its original format (one page sent out by email) it was revamped to an online newsletter telling the interesting stories hidden within the data (*figure 14*) rather than focus on individual fish.
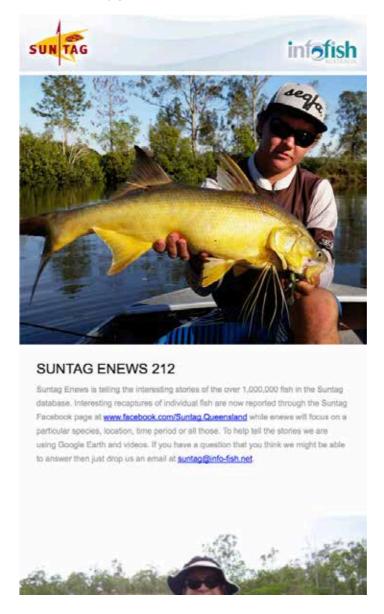

Figure 14: Suntag enews bulletin in 2014/15

The new format includes links to Suntag mini-reports, Google Earth maps and video clips on the Suntag website making it much more interactive. With the change in format the frequency of sending out the News bulletins has been reduced. There were 7 editions (206-212) sent out this year.

3.4 SUNTAG MINI-REPORTS

This year there has been a strong focus on Suntag mini-reports. These reports provide a snapshot of Suntag data for a particular species, location, timescale, issue or all of those. The reports are short and designed to provide information to fishers in a simple and easily understood format (*figure 15*). A total of 18 reports were produced this year (*Appendix 2*) and a total of 25 since the reports were introduced in 2014. There have been almost 20,000 downloads of mini-reports in total from the website so are proving to be very popular.

Figure 15: Example of Suntag mini-report on Impact of Climate on Barramundi in 12 Mile Creek

3.5 SUNTAG ON YOUTUBE

Last year saw the introduction of Suntag video clips on YouTube. Video clips on how to tag fish have been produced and can be viewed from the Suntag website as shown in *figure 16*.

Figure 16: Video clips on tagging available from the Suntag website

4. SUNTAG TRAINING ONLINE

Last year also saw the introduction of Suntag Training Online. Training of taggers has always posed significant challenges given the limited funding available and the geographic spread of taggers. An online training module was developed this year and introduced in Mar 2014. It is still in its infancy and will be improved, as we better understand the best ways to deliver that training. There are now 41 accredited taggers and that number will grow next year.

A 3 step accreditation process allows taggers to gain basic accreditation (*figure 17*). The process involves:

- ✦ A Personal Tagging Plan
- ✦ A number of available courses on the tagging process requiring tests to be passed
- ✦ Submission of 3 photos of tagged fish

All taggers that complete the process successfully become Accredited Suntaggers and are issued with an accreditation card. The training module will be added to for specialised tagging and refined as feedback is received.

Figure 17: Suntag accreditation is now available through online training

5. SUNTAGGERS

Suntaggers was established in 2011/12 to allow individuals to take part in Suntag. In 2013/14 a logo was introduced for Suntaggers. Suntaggers includes individuals and any tagger from an ANSA club becomes a Suntagger automatically when they tag fish under Suntag. In 2014/15 there were 116 individual Suntaggers and 626 members in total.

The Suntag website includes pages for groups active in Suntag and provides real time details of their tagging direct from the database. A Suntaggers website was established this year to provide members with access to all aspects of Suntag. *Figure 18* shows the homepage of the Suntaggers website.

Figure 18: Suntaggers website homepage

6. INFOFISH SHOP

Purchases of tagging equipment and accessories can be made through the Suntag website. The shop was upgraded to a fully featured online shop in 2012 with a secure payment facility. A sample screen from the store is shown in *figure 19.*

Figure 19: Online Store allows easy purchase of tagging equipment and accessories

7. SUNTAG FUNDING 2014/15

Funding of Suntag remained an issue for 2014/15. Funding of $40,000 was provided by DAF in 2014/15 however the total investment (excluding taggers contribution) was $137,000. The grant is less than 1/3rd of the cost of providing the Suntag service. Grant funds were largely supplemented by the Infofish Australia contribution of $72,000, $5,000 from ANSAQ and $18,000 in funding from other sources.

8. SUNTAG STATISTICS

At the end of 2014/15[1] the following statistics summarise the data collected under Suntag and other programs that use Suntag to store their data:

- ✦ 1,131,000 total fish records
- ✦ 737,700 fish tagged (23,000 records added in 2014/15)
- ✦ 288,000 fish from catches (12,600 records added in 2014/15)
- ✦ 58,500 recaptures (1,450 in 2014/15)
- ✦ 39,800 fishing trips with catch and effort (3,200 in 2014/15)
- ✦ 790 recruitment surveys
- ✦ 47,300 fish from recruitment surveys (8,000 in 2014/15)
- ✦ 88,900 hooking locations (5,800 in 2014/15)

Figures for 2014/15 are progressive as data for the year is still being received and it will be some time before the figures are finalised. *Figure 20* shows the numbers of fish records added to the database each year.
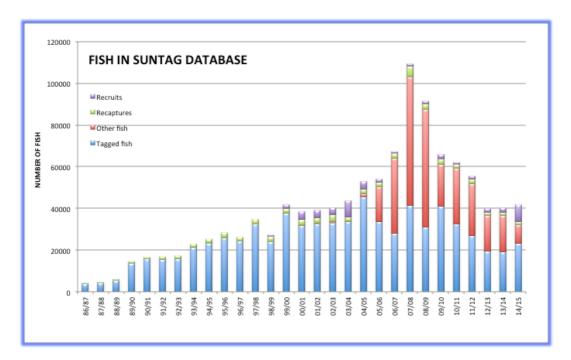

Figure 20: Numbers of fish records added to Suntag database annually

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[1] Approximate numbers in Infofish 2015 database at 30 June 2015

PERFORMANCE REPORT

1.   REPORTING REQUIREMENTS

This report outlines the performance of Infofish Australia in delivering Suntag services on behalf of the Australian National Sportfishing Association Qld Inc (ANSAQ) in accordance with the Agreement between ANSAQ and the State of Queensland (DAF).

SUNTAG BUSINESS PLAN OBJECTIVE 1

Collection and storage of tag, recapture, catch, effort, recruitment, hooking and associated research data by Suntag taggers, stocking groups and fisheries researchers.

OBJECTIVE 1 TARGETS

- ✦ 20,000 fish tagged
- ✦ 1,000 recaptures
- ✦ 1,500 fishing trip catch and effort details
- ✦ 3,000 hooking locations recorded

MEETING OBJECTIVE 1 TARGETS

- ✦ 23,000 fish tagged (target exceeded by 15%)
- ✦ 1,450 recaptures (target exceeded by 45%)
- ✦ 3,200 fishing trip catch and effort details (target exceed by 213%)
- ✦ 5,800 hooking locations recorded (target exceed by 193%)

SUNTAG BUSINESS PLAN OBJECTIVE 2

Provide a world class information service to the fishing community based on data collected through Suntag.

OBJECTIVE 2 TARGETS

- ✦ Updating of Infofish website
- ✦ 6 editions of Suntag News
- ✦ 800 subscribers to Suntag News
- ✦ 50 posts on Facebook pages
- ✦ 1,000 followers on Facebook page
- ✦ 12 downloads of data for researchers/others
- ✦ 5 articles in fishing media
- ✦ 10 new Google Earth visualisations
- ✦ 5 presentations at meetings/workshops/conferences
- ✦ 5 Suntag mini-reports
- ✦ 1 scientific paper published using Suntag data
- ✦ Suntag Annual Report 2014/15

MEETING OBJECTIVE 2 TARGETS

✦ Suntag website completely revamped Dec 2014 and continually updated (target met)
✦ 7 editions Suntag enews 206-212 (target met)
✦ 810 subscribers to Suntag News (target met)
✦ 72 posts on Facebook page with total reach over 252,000, average reach 3,500 and biggest reach 13,400 (*figure 21*) (target exceeded by 44%)
✦ 2,657 likes on Facebook page (target exceeded by 266%)
✦ 36 data requests from researchers/others (target exceeded by 300%)
✦ Monthly Suntag News column in Qld Fishing Monthly (10 months from Sep 2014-Jun 2015), 3 articles in Barra, Bass and Bream (target exceed by 260%)
✦ 34 new Google Earth visualisations for a total of 272 visualisations (target exceeded by 340%)
✦ 27 presentations to fishing clubs and other groups (target exceeded by 540%)
✦ 18 Suntag mini-reports (target exceeded by 360%) with almost 20,000 download of 25 reports produced since 2014
✦ 4 technical reports produced (target exceeded by 400%)
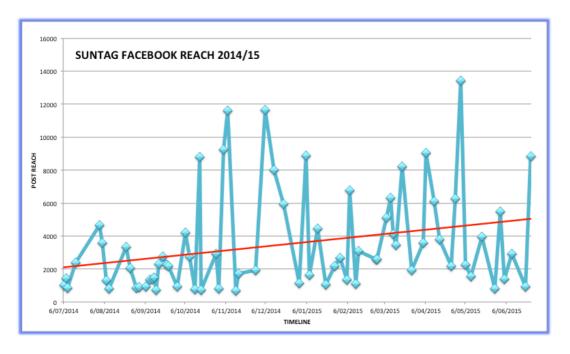✦ Infofish Citizen Science and Suntag Report 2014/15 (in progress)

Figure 21: Timeline of Suntag Facebook posts 2014/15

2. SERVICE DELIVERY STANDARDS AND PERFORMANCE

The following service standards for Suntag apply to internal operations for the collection of data and the provision of feedback to persons involved in the program. These services standards apply to the Infofish 2015 database and provide the basis for measurement of performance.

Electronic lodgement of fishing trip and tagging data

STANDARD
Data on fishing trips (including tagged fish) is to be forwarded by email to Suntag or lodged through Suntag Online within 10 days of a fishing trip and entered into the database within 10 days. **Timeframe from a fishing trip to when the data is available from the database is therefore 20 days**.

PERFORMANCE
95% of data received electronically
75% of data received within 10 days of a fishing trip
95% of received data entered into database within 10 days of receipt
80% of fishing trip catch and tag data available from database within 20 days
30% of fishing trip catch and tag data available from database within 5 days

Manual lodgement of fishing trip and tagging data

STANDARD
Data on fishing trips (including tagged fish) is to be forwarded by mail to Suntag within 30 days of a fishing trip (end of each month) and entered into the database within 10 days. **Timeframe from a fishing trip to when the data is available from the database is therefore 40 days**.

PERFORMANCE
5% of data received manually
70% of data received within 30 days of a fishing trip
100% of received data entered into database within 10 days of receipt
70% of fishing trip catch and tag data available from database within 40 days

Missing tag data

STANDARD
As much of the tagging is carried out on a voluntary basis not all tag data are submitted. A measure of this is recaptures where the tag data are missing, which provides a measure of the effectiveness of data collection. **Recaptures where tag details are missing should be no more than 5%.**

PERFORMANCE
For 2014/15 there were 3.6% of recaptures where tag details were missing compared with 4.6% in 2013/14.

Processing recaptures

For recaptures of tagged fish reported by fishers through the 1800 toll free hotline feedback is provided in real time over the telephone. Where the recapture is reported through the website there is feedback provided direct from the database. Where recaptures are provided by other means feedback is provided within 5 days. **Electronic recapture certificates are forwarded by email within 5 days or by smail within 10 days where the tagging and recapture details are available.**

PERFORMANCE
98% of fishers reporting recaptures through the 1800 number are provided details over the telephone
95% of fishers with email received electronic recapture certificates within 5 days (80% within 1 day)
100% of fishers are forwarded a printed recapture certificate within 10 days where requested

At any time around 5% of recaptures reported do not have the corresponding tag record in the database that delays the provision of feedback.

3.   SERVICE DELIVERY

The following provides a summary of the overall activities undertaken by Infofish Australia in 2014/15 in delivering Suntag.

- ✦ Data entry/loading to database of **21,900** tagged fish records for **735,600** tagged fish in total
- ✦ Data entry of **3,200** trip sheets for **43,000** trips in total
- ✦ Added **1,450** recaptured fish records for **56,300** recaptures in total
- ✦ Added **8,850** fish from catch records for **305,800** fish records in total
- ✦ Added **5,800** hooking records for **88,900** records in total
- ✦ Added **133** recruitment surveys for **790** records in total
- ✦ Added **8,000** fish from recruitment surveys for a total of **47,300** records in total
- ✦ Purchased **9,000** tags from Suntag grant funds ($7,000)
- ✦ Issued **20,000** tags (some from previous stock/paid for by taggers/paid for by other projects)
- ✦ Collected and managed data from a total of **626** taggers participating in Suntag that have tagged at least 1 fish in the past year
- ✦ Approximately **3,000** tag and recapture certificates were issued to persons recapturing tagged fish and the corresponding tagger
- ✦ Provided feedback to a total of **720** fishers on **1,450** recaptured fish
- ✦ Provided feedback to **340** taggers that had **1,450** fish recaptured

4.   COLLECTING RECAPTURE DETAILS

Recapture details in 2014/15 were collected in a number of ways.

Reporting method	Number
1800 phone	560
Website	450
Etrip form	210
Email	100
Commercial	110
Trip form	20
Mail	0
Total	1450

Table 1: Methods of reporting recaptures

The following outlines the maintenance of the 1800 toll free hotline service:

- ✦ Approximately 600 tag return calls received for the year
- ✦ Approximately 750 recaptures reported by other means
- ✦ Automatic diversion to mobile phone when out of office
- ✦ Automatic diversion to second phone if the hotline is engaged
- ✦ Answering of calls 24hour/7days no matter where physically located
- ✦ Less than 0.5% of calls taken on message bank (many callers just hang up if the message bank is on)

5.   SUNTAG ONLINE

This service to taggers was introduced in 2012. It allows taggers a secure login to the Infofish 2015 database. Tagger access is limited to read only of their tag records only.

The following outlines the use of this service in 2014/15:

- ✦ 473 taggers registered for Suntag Online
- ✦ Suntaggers reports generated 227/218 maps
- ✦ 500 etrip forms lodged direct through Suntag Online
- ✦ 1,330 photos of tagged fish lodged

FINANCIAL REPORT 2014/15

EXPENDITURE OF SUNTAG GRANT FUNDS

Purchase of tags (9,000 tags)	$ 7,000
Tag distribution and administration 50hrs x $38	$ 1,900
Data entry/validation 200hrs x $38	$ 7,600
Suntag management/analysis/reports 240hrs x $65	$15,600
Tech support (database/website/Facebook/Google Earth) 121.5 x $65	$ 7,900
Total (ex GST)	**$40,000**

CASH CONTRIBUTIONS

Tag purchases clubs, stocking groups, competitions, individuals	$ 8,000
ANSAQ	$ 5,000
Corporate contributions	$ 2,000
Funding from other projects (indirect contribution to tagging)	$ 8,000
Total	**$ 23,000**
Total funds received	**$ 63,000**

CONTRIBUTION BY INFOFISH AUSTRALIA

Tag distribution and administration 190 x $38	$ 7,220
Data entry/validation 156hrs x $38	$ 5,930
Suntag management/analysis/reports 674hrs x $65	$ 43,800
Tech support (database/website/Facebook/Google Earth) 234.5 x $65	$ 15,240
Equipment upgrade (computers, printers, network, software)	$ 2,010
Total	**$ 74,200**

IN KIND CONTRIBUTION BY SUNTAG TAGGERS

Tagging and other data on fish 22,000* x 1.0 hour** x $25	$550,000
Data entry by taggers 20,000 x $1	$ 20,000
Total	**$570,000**
* Estimate of number of fish tagged by Suntag taggers	
** Fishing time to catch a fish to tag (from Suntag trips)	

TOTAL BUDGET

Suntag Grant from Fisheries Queensland	$ 40,000
Cash contributions	$ 23,000
Contribution by Infofish Australia	$ 74,200
In kind contribution by taggers	$570,000
Total (ex GST)	**$707,200**
Benefit ratio from grant for each dollar provided	**16.7:1**

All figures including hourly rates are ex-GST and in accordance with the Suntag Business Plan 2014-15. Grant expenditure covers net grant funds provided to Infofish Australia by ANSAQ. A summary of times and costs for the delivery of Suntag by Infofish Australia is in *appendix 6*.

QUALITY SYSTEMS AND TRAINING

The following activities were undertaken in relation to quality systems and training:

✦ Suntag web based database available from anywhere in the world with Internet access
✦ Suntag Manual 2013 available online through database and website (total **530** downloads)
✦ Suntag Manual, Suntag Forms, Tagging Grid Maps and Tagging Projects available from the Infofish website
✦ Data from fishers maintained electronically with a file for every individual fisher with over **700** files – paper records are no longer maintained
✦ A total of **230** tagging grid maps are maintained and are available from the website through Google Earth or as a pdf
✦ Suntaggers now register online with **75** registered this year
✦ A total of **41** taggers have completed the Suntag Training Online and become accredited taggers

COMMUNICATION PRODUCTS

The following communication products were produced in relation to Suntag:

✦ 6 Suntag enews bulletins (201-206) issued
✦ Suntag and Crystal Bowl websites promote Suntag results with **20,000** downloads of reports
✦ Suntag has **2,600** likes on its Facebook page (950 in 2013/14)
✦ Material and articles on Suntag results provided to a wide range of media publications - Suntag has a regular page on Qld Fishing Monthly
✦ Radio interviews on ABC radio

SUNTAG REPORTS, PRESENTATIONS AND PUBLICATIONS

Suntag data continues to be extensively used by researchers, fishers and the broader community.

✦ **36** requests for extracts of data from Suntag were processed (*appendix 1*)
✦ **18** Suntag mini-reports were produced, distributed to interested parties and made available through the website (*appendix 2*)
✦ **2** other reports provided to meet specific clients and not publically released (*appendix 2*)
✦ **3** scientific publications or technical reports used Suntag data (*appendix 3*)
✦ **13** media items featuring Suntag information (*appendix 4*)
✦ **22** presentations made to conferences, workshops, meetings featuring Suntag data (*appendix 5*)

SUPPORT FOR RESEARCH AND MONITORING

The following projects undertaken by DAF have a tagging component with tagging data managed by Infofish Australia.

- ✦ Monitoring of Barramundi (Johnstone River and Lake Tinaroo)
- ✦ Monitoring of Barramundi (Lake Belmore, Lake Fred Tritton, above Lake Dalrymple)
- ✦ Monitoring of Murray Cod (Dumaresq River)
- ✦ Monitoring of Lungfish (Burnett River)
- ✦ Monitoring of Barramundi (Gladstone)
- ✦ Monitoring of Australian Bass (Noosa River)

The following externally funded projects or events have a tagging component with tagging data managed by Infofish Australia. Infofish provides a tagging service to the corporate world, students and community groups undertaking projects involving tagging.

- ✦ Gladfish monitoring trends in recreational fishing (Gladstone)
- ✦ Crystal Bowl predicting Barramundi stocks (Fitzroy River and Gladstone)
- ✦ CapReef monitoring (Central Qld offshore)
- ✦ Monitoring McArthur River (Northern Territory)
- ✦ Westag (Western Australia)
- ✦ Newtag (NSW)
- ✦ Monitoring stocked fish in Lake Awoonga (Gladstone)
- ✦ XXXX Island tagging project (Keppel Islands)
- ✦ Shark tagging in Central Queensland (CQUni)
- ✦ SEQWater fish monitoring (South East Queensland)
- ✦ Griffith University monitoring Mud Crabs (Gold Coast)
- ✦ HBEEC monitoring Mud Crabs in Barron River and Thomatis Creek (Cairns)
- ✦ Rocky Barra Bounty (Rockhampton)
- ✦ Boyne Tannum Hookup (Gladstone)
- ✦ Bundaberg VMR Fishing Competition (Bundaberg)
- ✦ Noosa River to Reef Family Fishing Classic (Noosa)
- ✦ Lake Moondarra Fishing Competition (Mt Isa)

TECHNICAL INNOVATION

The main areas of technical innovation relate to the continued development of the online database, Infofish websites, Facebook pages and management of email groups.

- ✦ Online database upgraded to Infofish 2015 (new additions in 2014/15)
- ✦ All Infofish websites upgraded – significant upgrade to Suntag/Crystal Bowl websites – Suntaggers website introduced
- ✦ Facility to maintain websites, email groups and bulk email distribution
- ✦ Linking Infofish 2015 database to Google Earth to allow visualisation of data
- ✦ Suntag video clips on YouTube
- ✦ Online training module

INFRASTRUCTURE SUPPORT AND MAINTENANCE

Infofish Australia maintains the following office systems that provide benefit to its Suntag operations. Suntag is attributed a 50% benefit from this infrastructure.

- ✦ Integrated Office system comprising LAN network server, 2 Apple iMACs (new in 2013), Windows PC, 2 laptops, 3 iPads and 4 iPhones
- ✦ Internet access via ADSL 2
- ✦ Four printers including Document Centre providing fax, scanning, printing, 1 colour inkjet printer, 1 colour laser duplex printer
- ✦ 2 UPS power supply protection units
- ✦ External hard drives for backup of database and website
- ✦ Technical support from One Pixel (website and database) and Quality IT (network and hardware)
- ✦ Up to A3 size laminating unit
- ✦ Label printer
- ✦ Paper shredder

BILL SAWYNOK
Infofish Australia
7 July 2015

APPENDIX 1 - DATA/INFORMATION TO RESEARCHERS AND OTHERS

Suntag and other data	Provided to	Date
CQ Recruitment survey data 1999-2014	Bill Venables CSIRO	Jul 2014
Tag and recapture data Fitzroy River and Gladstone1985-2014	Bill Venables CSIRO	Jul 2014
Summary of tagging and recaptures for Lake Borumba	Borumba Fishing Club	Sep 2014
Summary of recreational fishing in Gladstone	GHHP Dr SM Zobaidul Kabir (CQU)	Sep 2014
Recreational Barramundi catch for Fitzroy River and Gladstone 2010-14	Alex Campbell DAFFQ	Oct 2014
Barramundi tag and recaptures Fitzroy River and Gladstone 1985-2014	Alex Campbell DAFFQ	Oct 2014
Tag, recapture, trip and fishing method data Fitzroy River, 12 Mile Creek and Gladstone 1985-2014	Bill Venables CSIRO	Oct 2014
Golden Snapper tagging in Mossman area	Stephen Parker Suntaggers	Oct 2014
Barramundi size ranges in Gladstone in 2009	John Kirkwood GHHP	Nov 2014
Barramundi growth in salt and fresh water	Jacob Box (maths assignment) Bundaberg Sportfishing Club	Nov 2014
Tagging in Bundaberg area	Kevin Charteris Bundaberg Sportfishing Club	Nov 2014
Lat/long for Gladstone and Fitzroy map grids	Bill Venables CSIRO	Nov 2014
Mulloway tagging and sizes	Tony Ham Fisheries Queensland	Dec 2014
Bream recruitment data in Gladstone	John Kirkwood GHHP	Dec 2014
Noosa Bass and Murray Cod recapture	Daniel Smith DAFFQ	Dec 2014
Noosa Bass	John Mosig	Dec 2014
Barramundi recruitment for Fitzroy River 2013-2014	Nathan Johnson Fitzroy Partnership for River Health	Feb 2015
Recruitment survey sites in Gladstone and Bream	Jonathan Staunton-Smith DAF	Feb 2015

recruitment		
Commercial catch of Barramundi, King Threadfin, Blue Threadfin	Dave Swindells Rockhampton Commercial Fishers	Feb 2015
Mulloway movement	Ian Stagles WA Fish Foundation	Feb 2015
Time from stocking to capture of Barramundi in Tinaroo and Awoonga	Ben Little Kimberley Training Institute	Feb 2015
Summary of recaptures of Barramundi electrofished in Boyne River in 2011	Tony Ham/Steve Brooks DAF	Feb 2015
Commercial recaptures of Barramundi collected from Glenmore Seafood	Jamie Nicolson DAF	Feb 2015
Growth rates of Herbert Creek Barramundi	Cristian Atwell Recreational fisher	Feb 2015
Summary of Feb recruitment surveys in Gladstone	John Kirkwood GHHP	Mar 2015
Commercial Barramundi tag returns in Fitzroy River	Dave Swindells Rockhampton Commercial Fishers	Mar 2015
Commercial Barramundi tag returns in Fitzroy River	DAF/QRFN/Captag/FRFSG	Apr 2015
Mary River Cod tag and recapture data	Steve Poole	Apr 2015
Observations of commercial catch in Fitzroy River based on Suntag data	Andrew Thwaites DAF/Kim Martin QRFN/Captag/FRFSG	Apr 2015
Shoalwater summary 2000-2015	Minister for Agriculture and Fisheries Bill Byrne	Apr 2015
Barramundi sizes Shoalwater, Rocky Barra Bounty and Fitzroy	Kim Martin QRFN	Apr 2015
Tag and recapture details for Jackson Lagoon	Peter Jackson Landowner	Apr 2015
Google Earth maps of proposed Mackay NFA	Lance Murray/Luke Galea/Big Mick Mackay Recreational Fishing Alliance	May 2015
King Threadfin movement in the Fitzroy River	Steve Morgan Fishing Monthly magazine	May 2015
Recaptures from the 2014 Boyne Tannum Hookup	Reggie Bunting Gladstone Sportfishing Club	Jun 2015
Bream recruitment data for Gladstone	Bill Venables CSIRO	Jun 2015

APPENDIX 2 – SUNTAG REPORTS

Infofish report	Provided to	Downloads	Date
Monitoring Australian Bass in Brisbane River 1990-2013	SEQ ANSA clubs/DAFFQ/ ANSAQ www.suntag.org.au	897	Feb 2014
Monitoring Snapper in SE Queensland 1985-2013	SEQ ANSA clubs/DAFFQ/ ANSAQ www.suntag.org.au	577	Feb 2014
King and Blue Threadfin in the Fitzroy River	CQ ANSA clubs/DAFFQ ANSAQ www.suntag.org.au	681	Feb 2014
Insight into Trends in Recreational Fishing in Pumicestone Passage	SEQ ANSA clubs/DAFFQ/ ANSAQ www.suntag.org.au	3,259	Feb 2014
Tagging at Mary River and Tinana Creek barrages 11989-2013	Maryborough SC/DAFFQ/ ANSAQ www.suntag.org.au	694	Mar 2014
Tagging Stocked fish in the Cairns Area 2002-2013	CAFSG/DAFFQ/ANSAQ	729	Mar 2014
Barred and Speckled Javelin in Burnett River	Bundaberg SC/DAFFQ/ ANSAQ www.suntag.org.au	1,268	Mar 2014
Tracking fish into the Future in Rockhampton Region	CQ ANSA clubs/RRC/DAFFQ /ANSAQ www.suntag.org,au	940	Jun 2014
Moreton Bay Marine Park and Tagging	SEQ ANSA clubs/DAFFQ/ ANSAQ www.suntag.org.au	973	Jun 2014
Tagging in Gulf of Carpentaria Gilbert River to Flinders River 1985-2014	CSIRO/DAFFQ/ ANSAQ/ www.suntag.org.au	643	Jul 2014
Mackay Post Office Amateur Fishing Club Catches 1998-2013	Mackay RFA/ MPOAFC	Not online	Jul 2014
Looking into the "Crystal Bowl" Predictions compared with observed 2014 Barramundi season Fitzroy River and Gladstone	Rockhampton-Gladstone fishers/DAFRFQ/ www.crystal-bowl.com.au	1,492	Jul 2014
Barramundi in Herbert Creek	DAFFQ/ANSAQ/Captag/ www.suntag.org.au	368	Jul 2014
Weipa tagging 1985-2014	DAFFQ/ANSAQ/Weipa SC/Gladstone SC/ www.suntag.org.au	495	Aug 2014
Infofish Citizen Science and Suntag Report 2013/14	DAFFQ/ANSAQ/ www.suntag.org.au	518	Aug 2014

Tagging Australian Bass and Golden Perch in Burnett River catchment 1986-2014	DAFFQ/ANSAQ/FFSAQ/ Burnett stocking groups www.suntag.org.au	987	Sep 2014
Rocky Barra Bounty meets Crystal Bowl	Bounty fishers/ANSAQ/ DAFFQ/Captag/ www.suntag.org.au	1,407	Oct 2014
The Big Picture Tagging and Recaptures 1985-2014	DAFFQ/ANSAQ www.suntag.org.au	522	Oct 2014
Looking into the "Crystal Bowl" Barramundi Fitzroy River and Gladstone Review of 2014 season Predictions for 2015 season	Rockhampton-Gladstone fishers/DAFFQ/ www.crystal-bowl.com.au	1,348	Nov 2014
Dusky Flathead South East and Central Queensland 1985-2014	SEQ and CQ ANSAQ clubs/ANSAQ/DAFFQ www.suntag.org.au	534	Dec 2014
Yellowfin and Pikey Bream South East and Central Queensland 1985-2014	SEQ and CQ ANSAQ clubs/ANSAQ/DAFFQ www.suntag.org.au	324	Jan 2015
Impact of Climate on Barramundi in 12 Mile Creek 1985-2015	CQ ANSAQ clubs/ANSAQ/DAFFQ www.suntag.org.au	518	Feb 2015
Shoalwater Bay – Fish stocks in southern creeks entering Shoalwater Bay 2000-2015	Dept of Defence/GBRMPA/ DAF/Captag (restricted distribution)	Not online	Apr 2015
The Awoonga Barramundi story 1985-2014	GAWB/DAF/CQ ANSAQ clubs www.suntag.org.au	696	May 2015
Looking into the "Crystal Bowl" June 2015 Predictions compared with observed Mid-season Barramundi review Fitzroy and Gladstone	ANSAQ/DAF/GBRMPA/ GPC/GHHP/FPRH/RRC/ GRC/LSC/ www.crystal-bowl.com.au	208	Jun 2015
Looking into the "Crystal Bowl" Threadfin	ANSAQ/DAF/GBRMPA/ www.crystal-bowl.com.au		Jun 2015
Total reports 25	Total downloads	20,078	

APPENDIX 3 – SCIENTIFIC PUBLICATIONS AND TECHNICAL REPORTS

Paper or Report	Authors	Publication
Gladfish 2014	Bill Sawynok, John Platten, Wendi Parson and Stefan Sawynok	www.info-fish.net/gladfish Apr 2015
Fish Resources of Calliope River, Gladstone Central Queensland 2014	Department of National Parks, Recreation, Sport and Racing	www.nprsr.qld.gov.au/.../**calliope-river**-fisheries-resource-assessment.pdf 2014
Calliope River Fish Recruitment	Bill Sawynok, Wendi Parsons and Stefan Sawynok	Report to Dept of National Parks, Sport and Racing May 2015
Gladstone Fish Recruitment 2015	Bill Sawynok, Wendi Parsons, Johnny Mitchell and Stefan Sawynok	Report to Gladstone Healthy Harbour Partnership Jun 2015

APPENDIX 4 – MEDIA

Media item	Media type	Date
Suntag posts 72 Total reach 247,000 Average reach 3,400 Most reached 13,400	Facebook Likes 2,630	Jul 2014 – Jun 2015
Crystal Bowl posts 48 Total reach 46,900 Average reach 980 Most reached 8,050	Facebook Likes 485	Jul 2014 – Jun 2015
Moreton Bay Marine Park – the impact on tagging	Qld Fishing Monthly magazine	Jul 2014
Video of recapture of tagged fish by Andysfishing on YouTube	Video on YouTube 1,951 views	Aug 2014
Suntag page Qld Fishing Monthly	Fishing magazine	Sep 2014
Tagging fish and joining Suntag by Andysfishing on YouTube	YouTube video 714 views	Sep 2104
Interesting Bass recapture in Mary River article	Wide Bay Rural Weekly	Sep 2014
Suntag page Qld Fishing Monthly	Fishing magazine	Oct 2014
Suntag page Qld Fishing Monthly	Fishing magazine	Nov 2014
Crystal Bowl 2015 interview	ABC Radio Rockhampton	Nov 2014
Suntag page Qld Fishing	Fishing magazine	Dec

Monthly		2014
Suntag page Fishing Monthly	Fishing magazine	Jan 2014
Crystal Bowl 2015 interview	ABC Radio Rockhampton	Jan 2015
Yeppoon, Great Barrier Reef Marine Park by Bluebottle Films	YouTube video	Jan 2015
Barramundi survival article	Barra Bass and Bream	Feb 2015
Suntag page Fishing Monthly	Fishing magazine	Feb 2015
'Crystal Bowl' predicts future of central Qld Barramundi Barra Survival Is tagging worth it?	Barra Bass and Bream 47 3 articles	Mar 2015
Information on tagged fish	Brenda Foley Northern Fisheries Instruction Sheet for Sea Rangers	Mar 2015
Suntag page Fishing Monthly	Fishing magazine	Mar 2015
Fishing Monthly editorial	Fishing magazine	Mar 2015
Suntag page Fishing Monthly	Fishing magazine	Apr 2015
Suntag page Fishing Monthly	Fishing magazine	May 2015
Suntag page Fishing Monthly	Fishing magazine	Jun 2105
Radio interview on Crystal Bowl	ABC Radio Rockhampton	Jun 2015

APPENDIX 5 – PRESENTATIONS

Presentation	Provided to (number)	Date
Suntag Awards Night (Brisbane)	Suntag members in Brisbane (30)	Jul 2014
Tagging in Lake Boondooma (Kingaroy)	Kingaroy Sportfishing Club (20)	Aug 2014
Mary catchment tagging (Gympie)	Mary River Catchment Coordinating Committee (35)	Sep 2014
Tagging in Lake Samsonvale (North Pine Dam)	NPD Fishing stocking Group (30)	Sep 2014
Tagging in SEQ (Brisbane)	Tackle Land group (25)	Sep 2014

Tagging in Burnett River (Bundaberg)	Bundaberg Sportfishing Club (30)	Oct 2014
Crystal Bowl 2015 (Rockhampton)	Captag (35)	Nov 2014
Suntag data in Gladstone area	Gladstone Sportfishing Club for Seafood Festival	Nov 2014
Data on SEQ species	Ipswich United Sportfishing Club (20)	Dec 2014
Tagging in SEQ	Public forum in Sandgate (22)	Dec 2014
Infofish projects including Suntag and Crystal Bowl	Citizen Science workshop in Perth (24)	Dec 2014
Mulloway in Moreton Bay	Suntaggers and Brisbane clubs in Brisbane (12)	Dec 2014
Suntag and Moreton Bay tagging	Brisbane Fly Fishers (30)	Jan 2015
Suntag and Moreton Bay tagging	Stones Corner Marine	Jan 2015
Suntag impoundment data	Kingaroy Sportfishing Club (25)	Feb 2015
Suntag impoundment data	Southern Cross Fishing Club Toowoomba (50)	Mar 2015
Suntag impoundment data	Ipswich United Sportfishing Club (20)	Mar 2015
Mulloway Marathon presentation night	Mulloway Marathon potential participants Brisbane (60)	Mar 2015
Shoalwater Update	Captag (35)	Apr 2015
Suntag, Brisbane River and Moreton Bay tagging	Qld Fishing Monthly	April 2015
Suntag and Insight Genesis	Lowrance	May 2015
Stocking in Lake Samsonvale	Pine River Fish Management Association (30)	May 2015
Net Free Area briefing including tagging	Rockhampton Regional Council (18)	May 2015
Tag-a-toga	Kingaroy Sportfishing Club (10)	May 2015
Looking into the Crystal Bowl (presented by Gene Wilde on behalf of Infofish)	EIFAAC International Symposium on Recreational Fishing Lillehammer Norway	Jun 2015
Moreton Bay tagging	Stones corner Marine	Jun 2015
Brisbane River Mulloway	BLA	Jun 2015

APPENDIX 6 – SUMMARY OF SUNTAG TIMES PER MONTH FOR 2014/15

Summary of Suntag Times 2014/15													
Monthly times	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Totals
Management Bill Sawynok	87.75	100	79.75	58.25	65.25	68.25	102.5	74	76.5	101.3	42.25	54	909.75
Data validation Bill Sawynok	30	41	30	30	30	30	20	40	20	25	30	30	356
Tech support Stefan Sawynok	30	30	30	30	30	30	30	30	30	30	30	30	360
Administration Shirley Sawynok	20	20	20	20	20	20	20	20	20	20	20	20	240
Total	167.75	191.0	159.7	138.25	145.2	148.25	172.5	164.0	146.5	176.2	122.25	134.0	1,865.75
Costs (ex GST)													
Management	5,704	6,500	5,184	3,786	4,241	4,436	6,663	4,810	4,973	6,581	2,746	3,510	$59,134
Tech support	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	$23,400
Administration	760	760	760	760	760	760	760	760	760	760	760	760	$9,120
Data entry/validation	1,140	1,558	1,140	1,140	1,140	1,140	760	1,520	760	950	1,140	1,140	$13,528
Total	9,554	10,768	9,034	7,636	8,091	8,286	10,133	9,040	8,443	10,241	6,596	7,360	$105,182
Suntag Grant	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**2,750**	**$33,000**
Infofish contribution over grant	**6,804**	**8,018**	**6,284**	**4,886**	**5,341**	**5,536**	**7,383**	**6,290**	**5,693**	**7,491**	**3,846**	**4,610**	**$72,182**

Hourly rates are $65.00 for management and $38.00 for administration, data entry and data validation
Suntag grant (management, administration and technical support component) = $33,000
Infofish Australia contribution above grant = $72,182