

**Infofish Citizen
Science Report
2016-17**

Infofish Citizen Science Report

2016-17

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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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Cover designed by Creative Avenue: We live in a fishing world of extreme challenges

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Acronyms Used in the Report

- AFANT: Amateur Fisherman's Association of the Northern Territory
- ANSA: Australian National Sportfishing Association
- ANSAQ: Australian National Sportfishing Association Qld Inc
- Captag: Capricorn Tag and Release Sportfishing Club
- FBA: Fitzroy Basin Association
- FFSAQ: Freshwater Fishing and Stocking Association of Queensland
- FQ: Fisheries Queensland
- GAWB: Gladstone Area Water Board
- GBRMP: Great Barrier Reef Marine Park
- GBRMPA: Great Barrier Reef Marine Park Authority
- IGFA: International Game Fish Association
- JCU: James Cook University
- MARFA: Mackay Area Recreational Fishing Alliance
- NFZ: Net Free Zone
- QDAF: Queensland Department of Agriculture and Fisheries
- RBB: Rocky Barra Bounty
- RRC: Rockhampton Regional Council
- RUF: Recreational Use Fee
- SA: Suntag Australia Inc
- SEQwater: South East Queensland Water
- T20 fishers: Fishers in the top 20% of fishers that catch 80% of the fish
- TAA: Tagging Achievement Award
- TEA: Tagging Excellence Award
- WAFF: West Australian Fishing Foundation
- WWF: World Wildlife Fund

Acknowledgements

The running of a citizen science program to collect data on our fish species, and involvement in many research projects, is a major undertaking. The program would not be possible without the support of a wide range of organisations and individuals that have contributed either funding, in kind support and voluntary effort. The voluntary effort of all taggers and volunteer fishers is also acknowledged.

Gold Contributors (\$20,000 and over)

Infofish Australia

Department of Agriculture and Fisheries



Queensland Government

Silver Contributors (\$5,000-\$20,000)

None

Bronze Contributors (up to \$5,000)

Queensland Fishing Monthly

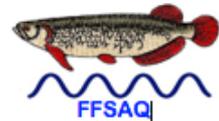


Suntag Australia Inc

Suntag Australia Inc was established in 2016 with the following bodies on the inaugural management committee. The committee is responsible for providing strategic guidance and oversee management of Suntag.

Capricorn Tag and Release Sportfishing Club (Captag)
 Gladstone Sportfishing Club
 Infofish Australia
 Freshwater Fishing and Stocking Association Queensland
 Brisbane Valley Anglers Fish Stocking Association

Queensland Fishing Monthly
 ABT Tournaments
 Stones Corner Marine
 Brisbane River Fishing
 World Wildlife Fund
 Westag (observer)



Suntag Funding

The following organisations or fishing groups contributed funding for their projects, particularly for the purchase of tags.

Fitzroy River Fish Stocking Association
 Emerald Fish Stocking Group
 Holloways Beach Environment Education Centre
 Rocky Barra Bounty
 Boyne Tannum Hookup
 Captag

Copperlode Fish and Kayak
 Gladstone Area Water Board
 Gladstone Sportfishing Club
 Mackay Area Fish Stocking Association
 Catchment Solutions

The following individuals contributed funding for the purchase of tags for their own use or made a donation to Suntag.

Billy Stringer
 Michael Dohnt
 David Lindsay
 Duncan Faichney
 Steve Salmond
 Tony Vesel

Tim Trollworthy
 Keith Harveyson



Projects partnering with Infotish - Suntag

The following projects are undertaken in conjunction with Infotish and/or Suntag.

Crystal Bowl
 Lake Awoonga (Gladstone Area Water Board tagging)
 Gladstone Healthy Harbour Partnership

Fitzroy Partnership for River Health
 Catchment Solutions (Mackay)
 Westag (Tagging Western Australia)

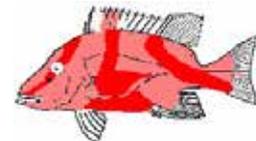
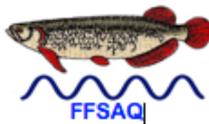


Supporters Contributors and Collaborators

The following organisations have provided support for Infofish or Suntag or activities undertaken by Infofish or Suntag.

International Game Fishing Association
 Hallprint Pty Ltd
 Tha App Team
 Periscope Data
 Insight Genesis
 Rockhampton Regional Council
 BLA (Boating Lifestyle Adventure)
 Great Barrier Reef Marine Park Authority
 Department of Defence
 BarraDave Sportfishing Services

James Cook University
 Fitzroy Basin Association
 Freshwater Fish Stocking Association of Queensland
 Andrew Phipps (Phippsy) - Radio Zinc
 Graham Cumming
 Yarralla Deep Sea Fishing Club
 Sunfish Queensland
 SEQ Water



Businesses participating in Suntag

The following businesses participated in Suntag this year.

Queensland Fishing Monthly
 Stones Corner Marine
 Cast e-mag
 Lively Lures
 Shads Lures
 Infish-Lures

Andy's Fishing Adventures
 Brisbane River Fishing
 CQ Fishing Adventures
 Bait Tackle Store
 All Tackle Sportfishing
 Bli Bli Fishing Park



Clubs participating in Suntag

The following clubs or some members of these clubs have taken part in Suntag this year.

Captag
 Gladstone Sportfishing Club
 Mossman Sportfishing Club
 Ipswich United Sportfishing Club
 Southern Brisbane Sportfishing Club

Townsville Sportfishing Club
 Townsville Saltwater Sportsman's Club
 Hinchinbrook Sportfishing Club
 Bundaberg Sportfishing Club

Fish Stocking Groups participating in Suntag

The following fish stocking groups have taken part in Suntag this year.

Gladstone Area Water Board (Awoonga)
 Mackay Area Fish Stocking Association
 Fitzroy River Fish Stocking Group
 Mount Isa Fish Stocking Group
 Tablelands Fish Stocking Society
 Twin Cities Fishing Stocking Society
 Faust Dam Fish Stocking Association
 Callide Valley Native Fish Stocking Association
 Emerald Fish Stocking Group

Mackenzie River Fish Stocking Association
 Lake Borumba Fish Stocking Association
 Brisbane Valley Anglers Fish Stocking Association
 Pine Rivers Fish Management Association
 Monduran Anglers Stocking Association

Fishing Competitions

Infofish-Suntag works with and supports the following fishing competitions by managing data on fish tagged during these events.

- Rocky Barra Bounty
- Million Dollar Fish (Northern Territory)
- Boyne Tannum Hookup
- Lake Moondarra Fishing Classic
- Longreach Fishing Competition
- Fisherman's Landing Fishing and Social Club Tagged Fish Competition



The Infotish Australia Team

Infotish started out in 1995 as Infotish Services and was a partnership between Bill and Shirley Sawynok. In 2010 it broadened its scope and became Infotish Australia. At the end of 2016-17 it has become a company Infotish Australia Pty Ltd with Stefan Sawynok as the Managing Director. However, it has fundamentally remained a small family business with big aspirations and now has 3 generations working for the business.

Infotish has adopted a Citizen science approach to monitoring of fisheries and continues to build technological tools that aid fisheries monitoring.



Bill Sawynok is the founder of Infotish that he established in 1995 in partnership with wife Shirley. He managed Suntag since then and has overseen the expansion of the business into other areas of fisheries monitoring, in particular the Crystal Bowl. At the end of 2016-17 he has handed over the business to son Stefan but remains the manager of the Rockhampton office and continues to play an active role in the business.



Shirley Sawynok is the Finance Manager for Infotish Australia and was part of the partnership that established Infotish. With the transfer of the business to Infotish Australia Pty Ltd she retains the role of Finance Manager and is based in the Brisbane office. She also manages the finances for a range of other family businesses.



Stefan Sawynok joined Infotish Australia in 2012 and at the end of 2016-17 has become Managing Director of the company. Stefan is based in the Brisbane office and focuses on technology and communications. He has been responsible for the development of Crystal Bowl dashboards, Trackmyfish phone app and the establishment of a business relationship with Hallprint to facilitate overseas expansion of the business.



Pheonix Sawynok is the third generation of the family and joined Infotish on a part time basis in 2017. She is responsible for the preparation of video material for the business.

The Suntag Australia Team

Suntag Australia was established in 2016 to provide strategic guidance and oversee management of Suntag. It is comprised of all the groups that take part in Citizen Science monitoring through tagging under Suntag.



Todd van den Heuvel is the inaugural President of Suntag Australia. He is also President of Capricorn Tag and Release Sportfishing Club (Captag) which is one of the largest tagging club in Suntag Australia. Todd is based in Rockhampton and enjoys Barramundi fishing in the Fitzroy River.



Bill Sawynok is the Secretary of Suntag Australia and is the Rockhampton Manager of Infofish Australia. He has managed tagging since its introduction in 1986. He has played several roles in fisheries including manager of Recfishing Research 2005-2012, past director of the Fisheries Research and Development Corporation and past board member of the Cooperative Research Centre for the Great Barrier Reef.



Shirley Sawynok is the Treasurer of Suntag Australia and the Finance Manager for Infofish Australia. Shirley also manages Suntaggers that allows individual members to take part in Suntag. She also manages tag purchases and distribution, the Infofish shop and is the event manager for the Rocky Barra Bounty.



Steve Morgan is the publisher of the Fishing Monthly magazines and the owner of the ABT fishing tournaments circuit. Steve is also a qualified marine scientist so knows the value of good data. Somehow Steve finds the time to fit in about 150 days (or nights) fishing each year so has a very strong contact with the fishery.



Glen Baker is the proprietor of Stones Corner Marine in Brisbane. Glen has been a member of Suntag since the mid 1990's and is active in tagging in Moreton Bay and SEQ. Glen is extremely passionate about Suntag and has been involved in "recruiting" many new members over recent years.



Charlie Ladd is the Treasurer of Freshwater Fishing and Stocking Association Queensland (FFSAQ) and currently holds management roles in Sunfish Queensland and Brisbane Valley Anglers Fishstocking Association (BVAFA). He has been a member of VAFA since 1996 and FFSAQ for 13 years. Charlie represents the tagging interests of fish stocking groups.



David Hill is the President of the Gladstone Sportfishing Club which has focused on tagging for many years. David is currently working in PNG and commutes from Gladstone to PNG. While David is away Bob Pirie is acting as his proxy. Bob is the long standing Tagging Officer for the Gladstone club.



Liam Fitzpatrick lives in Brisbane and is the representative of Suntaggers in south Queensland. He is also a member of FFSAQ and has been involved in a number of processes dealing with the development of leadership skills.



Jim Higgs is the Great Barrier Reef Fisheries Policy Manager for WWF Australia. He has extensive experience with the collection and analysis of recreational, commercial and indigenous fishing information. He completed a Master of Science at James Cook University based on the analysis on historical fishing club competition records in 1993.



Matthew Hubbard manages Brisbane River Fishing which is a fishing tour operation. He is representing fishing tour and charter operators in their tagging efforts. Matt's focus is on the Brisbane River with King Threadfin and Mulloway being prime targets.



Steve Salmond is in the Army and lives in Townsville and is the representative of Suntaggers in North Queensland. Steve has had a long association with tagging dating back to the 1990s. His career with the Army resulted in a move to the Northern Territory where he continued his tagging. However, after several years Steve was on the move again with fishing taking a back seat. In 2015 Steve returned to Townsville and recommenced tagging and now haunts the Bohle River.

What does the future hold?

Infofish Australia (and its predecessors) has been providing a service to the fishing industry for almost 30 years since 1986. With over 1.3 million fish records and over 850,000 tagged fish in the database it is now the largest fisheries database in Australia 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, stocking groups and volunteer fishers.

Last year saw the establishment of Suntag Australia to provide strategic guidance and oversee management of Suntag. Suntag provides most of the volunteer fishers that provide data through tagging. The management committee is composed of key groups that are involved in tagging with Infofish maintaining the role of day to day management.

This year the focus for Infofish has been the development of the technology tools to take us into the future. The completion of version 2 of the Trackmyfish phone app will improve and expand data collection. There is already considerable interest from major fishing competitions with ABT Tournaments already using the app.

At the information delivery end the expansion of Crystal Bowl dashboards has significantly expanded the data that are now available in real time. There are several stocking groups that have taken up dashboards to track their stockings and the Rockhampton Regional Council has adopted the Crystal Bowl for monitoring of the Fitzroy River in the Capricornia Net Free Zone.

These developments are necessary to ensure that Infofish and its supporting fishing groups remain relevant into the future. With the release of the Queensland Government's Sustainable Fisheries Strategy in June 2017 and its recognition that monitoring needs to improve this had offered the opportunity for a review of Citizen Science monitoring. That review is currently underway and it aims to provide the opportunity for a whole of recreational sector approach to monitoring.

But our sights are not limited to Queensland. With the Westag program in Western Australia on board and the development of a Crystal Bowl approach for the Daly River in the Northern Territory the range of monitoring is increasing. The formation of a business arrangement between Infofish and Hallprint also offers the opportunity to market a package including tags, data collection and information delivery overseas with the first client in Belize in Central America.

A clear pathway has been set for the future and the pace of change will continue to speed up. Infofish has placed itself in a strong position to meet the challenges that lie in front of us.



Bill Sawynok
Infofish Australia

Summary of 2016-17

This was another year of significant change and progress. The focus has been on expanding the range of data provided in real time through Crystal Bowl dashboards and expanding the range of data collected through Trackmyfish.

The Crystal Bowl now has over 100 dashboards that contain over 1,000 maps, graphs and tables that are updated daily and those numbers are ever increasing as the scope of data being presented continues to grow.

The development of the Infofish data warehouse allows data from multiple sources to be maintained and used in analyses. Data from several international databases was downloaded to test the capabilities of the data warehouse. This allows new value add products to be developed to improve information delivery to fishers to assist in their decision making.

The focus of catch monitoring is now on collecting data from T20 fishers (the 20% of fishers that catch 80% of the fish) with statistical modelling of the number of catch records required from T20 fishers for a particular river system, local area or region to get a reliable estimate of catch rates for T20 fishers. This was trialled in the Fitzroy River this year in monitoring of the NFZ and developing our forecasting capabilities.

The Infofish database is one of largest recreational fishers' databases in the world that is based on data collected mostly by volunteers and constitutes a combined investment of \$15-20 million over the past 30 years. This year data from Suntag, Westag and the Northern Territory were incorporated into the primary database. There are now over 1.3 million fish records in the database with over 11,000 volunteer fishers having contributed their data.

Recruitment monitoring was focused on Barramundi in the Fitzroy River and the environmental drivers of recruitment are now well understood. Recruitment monitoring of Bream for the Gladstone Healthy Harbour Report Card was in its second year.

Impoundment monitoring continues with the model developed for Australian Bass in Lake Samsonvale being refined. Tagging of Bass continues in a number of southern impoundments. Barramundi monitoring in impoundments continues to be focused on releasing tagged larger fish (around 200mm) with Crystal Bowl dashboards introduced for tracking stocking in the Fitzroy River. Tracking of tagged stocked Barramundi has also continued in the Mackay, Townsville and Cairns areas. Crystal Bowl tracking has also been introduced to Lake Morris near Cairns.

Competition monitoring has also continued with the focus on the Rocky Barra Bounty, Boyne Tannum HookUp and ABT tournaments. Monitoring includes tagging and collection of catch data. The Trackmyfish app was used in the Bounty and in some ABT tournaments.

Monitoring of fish health continues in the Gladstone area following the large outbreak of health issues in 2011. The incidence of dead or sick fish declined through to 2016 however with the spilling of Lake Awoonga again in April 2017 that situation may change with numbers of Barramundi spilling into the Boyne River.

Infofish Australia's Mission and Strategies

This has been another year of significant change for Infofish with greater recognition of our community base, refining our mission and key strategies and the continued development of the technology tools to implement the strategies.

Infofish Australia's Mission "Social change in fisheries through citizen science"

Strategy 1: Focus on providing information in real time that is relevant to the needs of decision making by fishers and management agencies

Strategy 2: Focus on collecting data that are relevant to the needs of decision making by fishers and management agencies

Strategy 3: Develop the capacity of the community to engage in fisheries citizen science

Strategy 4: Continue to innovate in all aspects of data collection and information delivery to better inform public policy

Real time information for decision making

Strategy 1: Focus on providing real time information that is relevant to the needs of decision making by fishers

Strategy tools (real time information)

Crystal Bowl dashboards

Infofish data warehouse (worldwide fisheries, environmental and climatic datasets)

Crystal Bowl dashboards

With the worldwide reliance on instant information brought about by technology the community has become ever more reliant on real time information in their decision making. However, the fishing industry has largely failed to react to this change and is still mostly relying on outdated information in making decisions. The Crystal Bowl is attempting to change this paradigm.

The Crystal Bowl approach is about using data from as many sources as relevant to an issue, species or location and turning that around into useful information and making it available through dashboards in real time. Having relevant information in real time is much more likely to influence decision making in the same way that daily weather forecasting influences our decision making and behaviour.

Initially the focus of the Crystal Bowl has been to provide information on fish sizes, catch rates, trends in fish stocks and recruitment. However, there will be an ever-expanding array of options as fishers start to use the information, understand what it offers and what more it can do.

The Crystal Bowl now has over 100 dashboards that contain over 1,000 maps, graphs and tables that are updated daily and those numbers are ever increasing as the scope of data being presented continues to grow. *Figure 1* shows a part of a dashboard of Barramundi in the Fitzroy River.

As a pointer to the future the Rockhampton Regional Council has adopted the Crystal Bowl for monitoring the Fitzroy River in the Capricornia Net Free Zone (NFZ). The Fitzroy River Fish Stocking Association and Copperlode Fish and Kayak have also adopted the Crystal Bowl for monitoring their stocking of Barramundi in their area.



Figure 1: Crystal Bowl real time dashboard monitoring Barramundi in the Fitzroy River

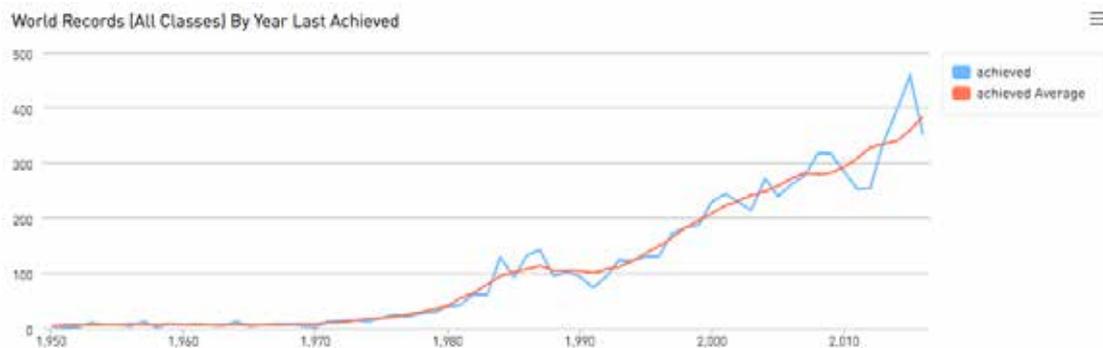
Infotish Data Warehouse

The Infotish database was designed to collect data on tagged fish and was expanded to collect data on catch and effort and recruitment surveys. However, as the future requires being able to download and store data from a broad range of databases and other sources, Infotish has developed a data warehouse.

The data warehouse allows data from multiple sources to be maintained and used in analyses. Data from several international databases was downloaded to test the capabilities of the data warehouse. This allows new value add products to be developed to improve information delivery to fishers to assist in their decision making.

As an example a comparison was made between fish world records maintained by the International Game Fish Association (IGFA) and Australian records maintained by the Australian National Sportfishing Association (ANSA). *Figure 2* shows a steady increase in the number of records overall achieved through to around 2000 as maintained by both organisations. From 2000 onward the number of IGFA records maintained a steady increase while the number of ANSA records has steadily declined. This suggests that there has been a different approach to maintaining records between the 2 organisations.

IGFA



World Records Per Days Reported

ANSA



Australian Records Per Days Reported

Figure 2: Comparing granted record fish claims maintained by IGFA and ANSA

Collecting data relevant to decision making

Strategy 2: Focus on collecting data that are relevant to the needs of decision making by fishers and management agencies

Strategy tools (collecting relevant data)

- Tagged fish monitoring
- Catch monitoring
- Net Free Zone monitoring
- Recruitment monitoring
- Impoundment monitoring
- Competition monitoring
- Fish Health monitoring
- Pest species monitoring

Tagged fish monitoring

Tagged fish monitoring is the oldest component of Infofish data collection being established in 1986 in Queensland but now includes data from Western Australia and the Northern Territory. There are now over 1.3 million fish records in the database including data on 0.85 million tagged fish. The Infofish database represents the largest long-term investment in recreational fisheries data collection in Australia outside government. Details on the datasets are contained in the sections on Suntag, Westtag and Northern Territory.

Catch monitoring

The traditional approach to catch monitoring has been through diary and boat ramp surveys and Infofish has carried out boat ramp surveys through projects such as CapReef and Gladfish. However, boat ramp surveys are labour and analysis intensive, costly and results can take some considerable time to produce. They also do not necessarily provide timely information that can assist in decision making by fishers and even management agencies.

To this end Infofish has developed a new approach using Prices Law that is based on the Pareto distribution. That provides a scientific base to the well-known saying that “20% of fishers catch 80% of the fish”. The catches of T20 fishers (those in the top 20%) are more sensitive to changes in the fishery than the broader recreational fishing population and will show up trends sooner.

The focus is now on collecting data from T20 fishers with statistical modelling of the number of catch records required from T20 fishers for a particular river system, local area or region to get a reliable estimate of catch rates for T20 fishers.

This approach is being used in the Fitzroy River where catch data are being collected from T20 fishers (not just taggers) in a variety of ways for use in the monitoring of the NFZ through the Crystal Bowl and developing forecasting capabilities.

As an example, *figure 3* shows that over the past 10 years in the Fitzroy River there were 570 fishers that reported catching 14,750 Barramundi while there were just 76 (13.3%) that caught 80% of the fish.

By providing this information through Crystal Bowl dashboards it allows trends to be monitored in real time and provides information that fishers can use in decision making. It is also significantly more cost effective and that is a key requirement for monitoring to be sustained over long periods of time.

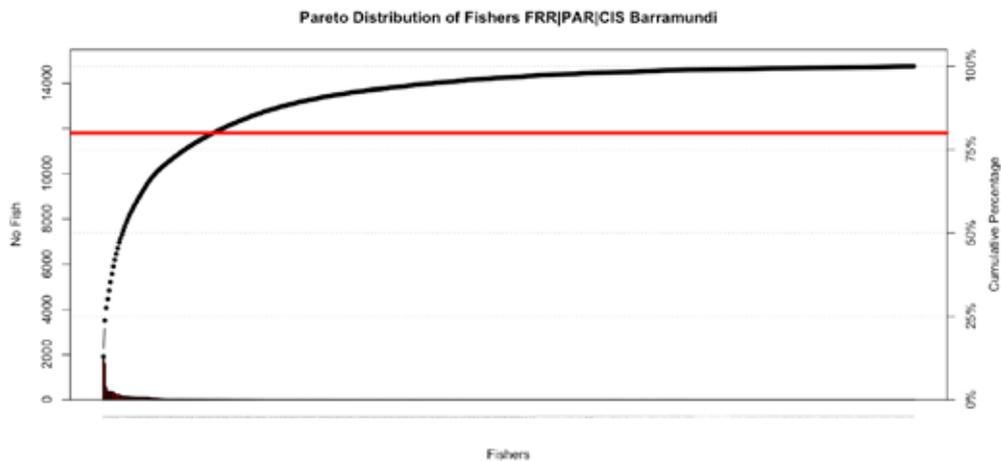


Figure 3: Pareto distribution of the Barramundi catch in the Fitzroy River over the past 10 years

Net Free Zones monitoring

The Queensland Government declared 3 Net Free Zones (NFZ) in Nov 2015 where commercial net fishing was removed. The zones were:

- ✦ Cairns (Trinity Bay)
- ✦ Mackay (St Helens Bay to Cape Hillsborough)
- ✦ Capricornia (Fitzroy River, Keppel Bay and Corio Bay)

Fisheries Queensland is undertaking monitoring of catch and effort in each of the zones through boat ramp surveys to determine changes compared to adjacent locations. Infofish is also undertaking monitoring in the Capricornia NFZ using T20 fishers. In the Mackay NFZ Infofish is supporting the Mackay Recreational Fishing Alliance (MRFA) in monitoring catch through boat ramp surveys. MRFA undertook surveys before (Oct 2015) and after (Feb-Apr 2016) the introduction of the NFZ. A follow up survey was conducted from Feb-Apr 2017 for comparison with the 2016 survey.

Infofish produced a report on the results of those surveys. *Figure 4* shows the catch rates over the 3 surveys adjusted to a standard trip (2.5 fishers fishing for 6 hours or 15 hours fishing effort). Details of the surveys are contained in the report “Assessing Fishing Trends St Helens to Cape Hillsborough Net Free Zone” available from MFRA.

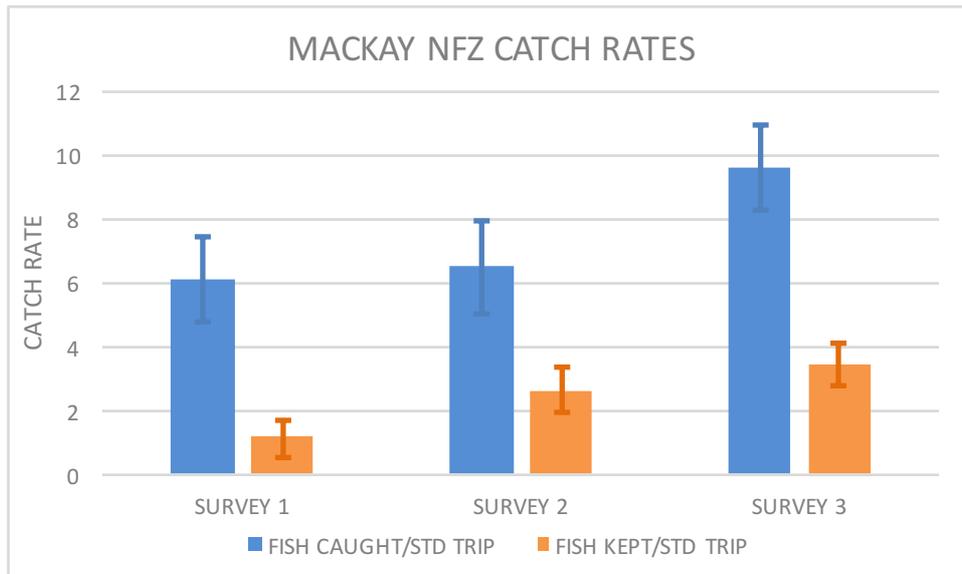


Figure 4: Catch rates per standard fishing trip in the Mackay NFZ

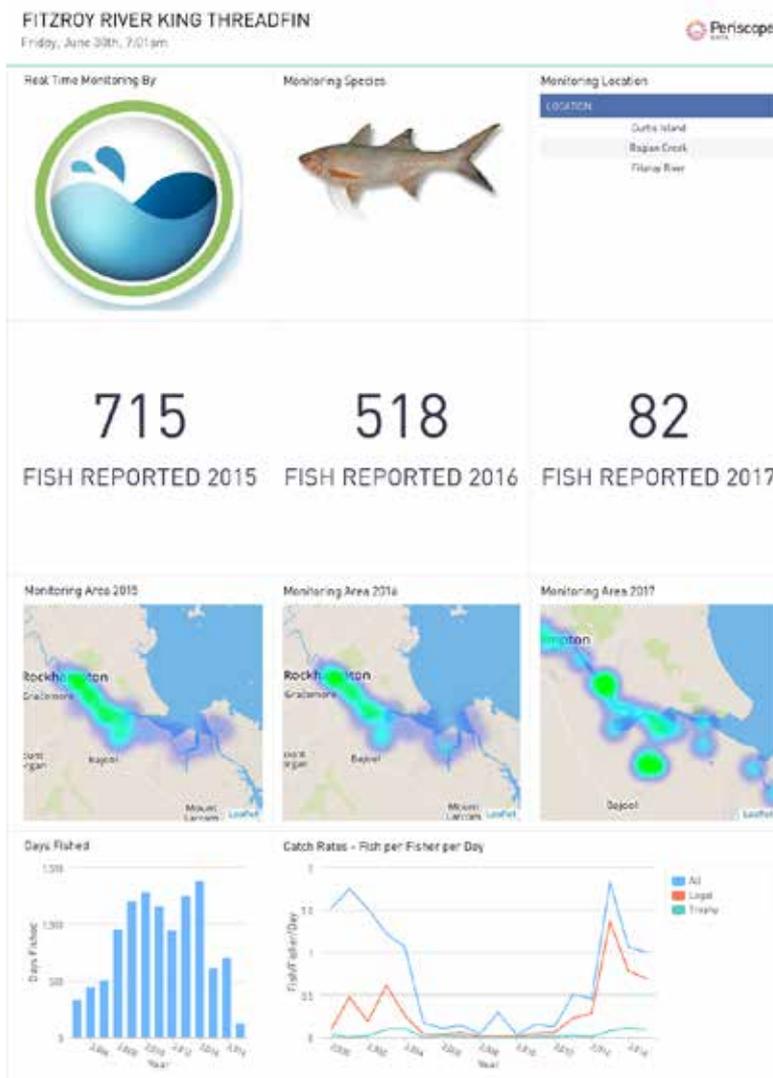


Figure 5: Real time tracking of King Threadfin in the Fitzroy River as part of the NFZ

For the Capricornia NFZ the Rockhampton Regional Council (RRC) this year adopted a “Rockhampton Region Recreational Fishing Strategy” as part of the implementation of the NFZ. As part of the strategy the RRC has included the Crystal Bowl for monitoring the NFZ. This includes forecasts for Barramundi, King and Blue Threadfin in the Fitzroy River and real time monitoring of those forecasts.

Figure 5 shows part of the dashboard being used to monitor King Threadfin in the Fitzroy River as part of the NFZ. Tagging is an integral part of the data required for monitoring given the loss of commercial catch data. A correlation was established between the fish tagged and the commercial catch of Barramundi. Captag is leading the collection of data in the NFZ however other T20 fishers fishing the river are also providing data.

Catch details from the T20 fishers are then provided through Crystal Bowl dashboards that are updated daily providing useful information in real time that can be used to more effectively monitor the fishery.

Recruitment monitoring

Any future-oriented service for fishers must understand recruitment, as future stocks are critically dependent on recruitment. Infofish has recognised this and over the years has steadily expanded its recruitment monitoring.

Monitoring of Barramundi recruitment started in Central Queensland in 1999 and the drivers of Barramundi recruitment are now well understood and the level of Barramundi recruitment can be accurately forecast based on river flows and rainfall. Barramundi recruitment is monitored in the Fitzroy River, Gladstone, Broadsound and Capricornia NFZ. Recruitment is forecast as poor, moderate or strong and is based a climate index and is measured by the catch rate of recruits.

Barramundi recruitment is monitored through a combination of recruitment surveys using a standardised castnet method and tagging later in the recruitment period when the fish are large enough to be caught on line.

River flow and rainfall data are converted to a climate index to allow recruitment to be plotted against the climate. The index ranges from a low of 5 (poor for recruitment) to 30 (good for recruitment).

Data are assessed based on the number of recruits/fisher/day so that the strength of recruits can be compared with forecasts and from year to year. *Figure 6* shows the catch rate for Barramundi recruits in the Fitzroy River for the past decade (2017 for half the season).

The recruitment forecast for the 2017 season was moderate based on projected rainfall and river flow while at mid-season the recruitment is indicated as strong and the forecast has been revised to moderate-strong. A final assessment of recruitment will be made in Nov at the end of the season.

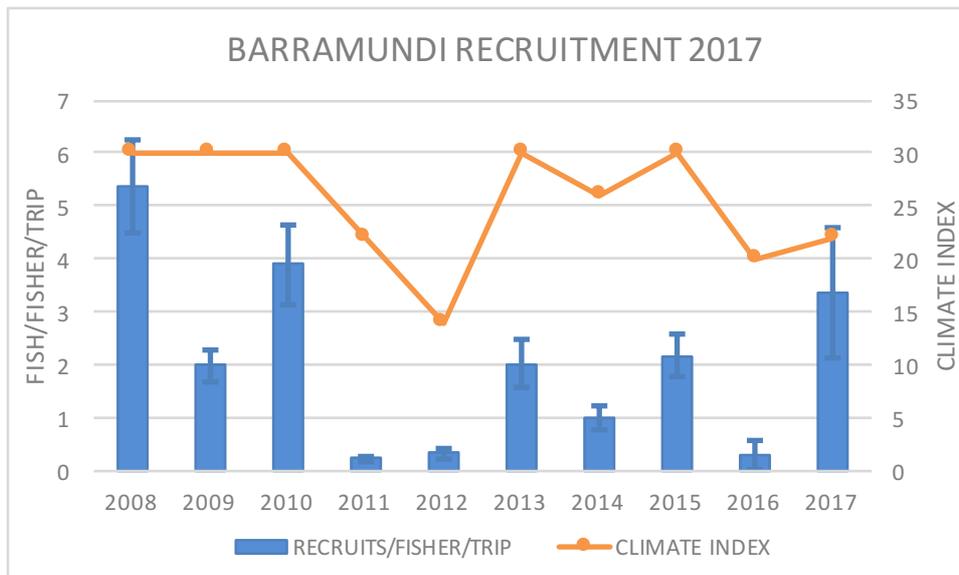


Figure 6: Crystal Bowl live tracking of Barramundi recruitment in the Fitzroy River

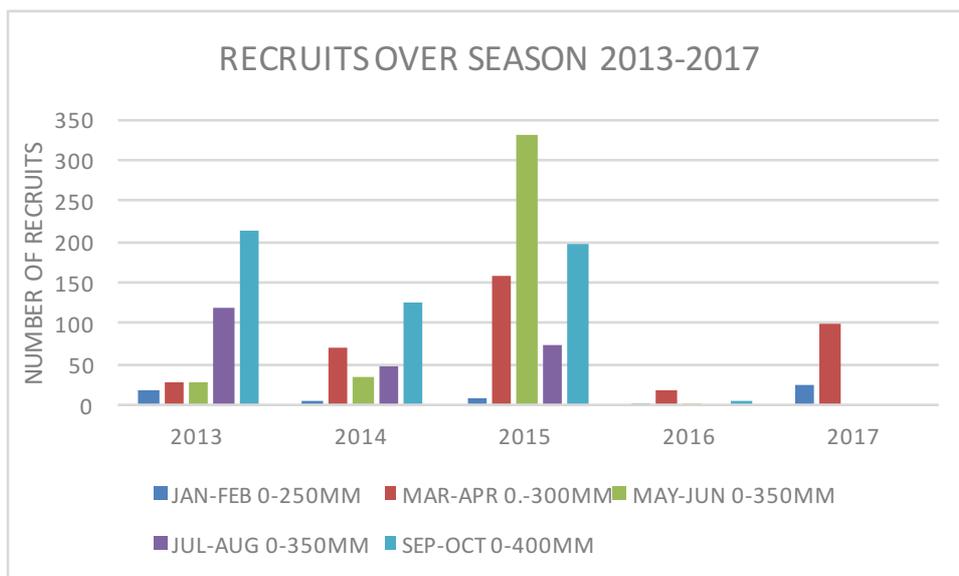


Figure 7: Crystal Bowl live tracking of Barramundi recruitment in the Fitzroy River 2013-17

Barramundi grow rapidly over the season from Jan-Oct when they can reach 400mm in a good year. Assessing Barramundi recruits over the season was improved by tracking recruits based on their size using 2 month intervals as shown in figure 7.

Barramundi recruitment is used as a fish indicator by the Fitzroy Partnership for River Health as part of a report card on the health of the Fitzroy River. Figure 8 shows some early Barramundi recruits captured in a Fitzroy River wetland in Jan 2017.



Figure 8: Early Barramundi recruits in Jan 2017 from a Fitzroy River wetland

As part of the development of the Gladstone Healthy Harbour report card the Gladstone Healthy Harbour Partnership are using Bream recruitment as the fish indicator for the report card following trial surveys in 2015.

Recruitment surveys were undertaken in 2016 and 2017 at 26 sites from the Narrows in the north to Rodds Harbour in the south. Recruitment surveys were undertaken using the standardised castnet method as used for previous surveys. The focus was on Yellowfin and Pikey Bream as shown in *figure 9*.



Figure 9: Pikey Bream (left) and Yellowfin Bream (right) recruits recorded during Gladstone recruitment surveys

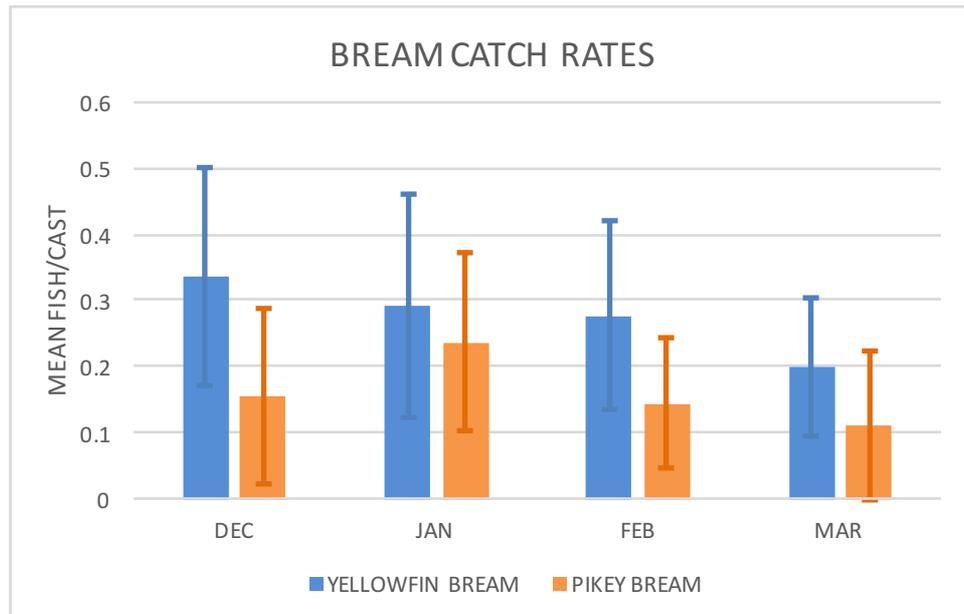


Figure 10: Catch rates of Bream recruits over the recruitment season

Catch rates were assessed for the 2 years and historic data from a number of sites since 2011-12 to develop a score for recruitment from A-E. Recruitment in 2016 was assessed as D while 2017 was assessed as B. Details are contained in the report “Fish recruitment indicators for the Gladstone Harbour Report Card using data derived from castnet sampling”.

Impoundment monitoring

Tagging allows stocking groups to monitor their stocking efforts in a cost effective way and provides data on growth, movement, survival, escapement and mixing with wild populations.

Last year a model was developed to estimate the number of stocked fish in an impoundment that could be used to provide an estimate of numbers to be stocked to maintain catch rates or project the future effect of different stocking proposals. The model uses stocking and tagging data and a scenario approach based on worst-, middle- and best-case scenarios.

The scenarios use different rates of survival of fingerlings, annual reductions in numbers in each stocking using recapture rates and the effect of escapement from overtopping of the impoundment. This then allowed an estimate to be made of the number of fish needed to be stocked in the coming year to maintain current catch rates. *Figure 11* shows the estimated number of Bass in Lake Samsonvale based on the 3 scenarios. A report was produced “Lake Samsonvale Stocking and Monitoring 1990-2015.” The report is available from the Infofish website www.infofishaustralia.com.au.

This year saw the first uptake of Crystal Bowl dashboards for the tracking of tagged stocked Barramundi with the Fitzroy River Fish Stocking Association adopting the dashboards to track their stockings from 2005-2017. *Figure 12* shows the dashboard tracking fish from the 2015 stocking at Alligator Creek with most of the fish being recaptured over 40km downstream in the Fitzroy estuary.

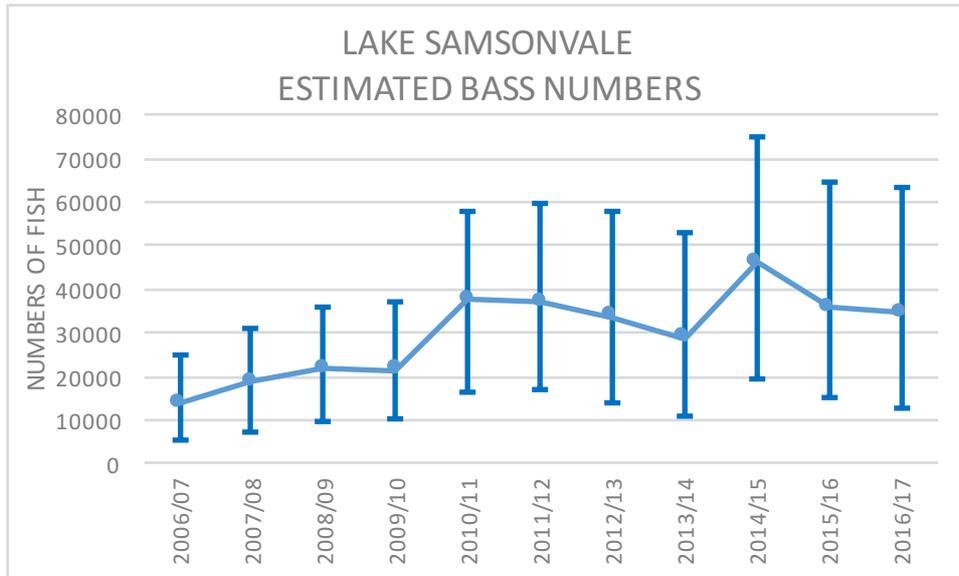


Figure 11: Estimated numbers of Bass in Lake Samsonvale (most likely and range)

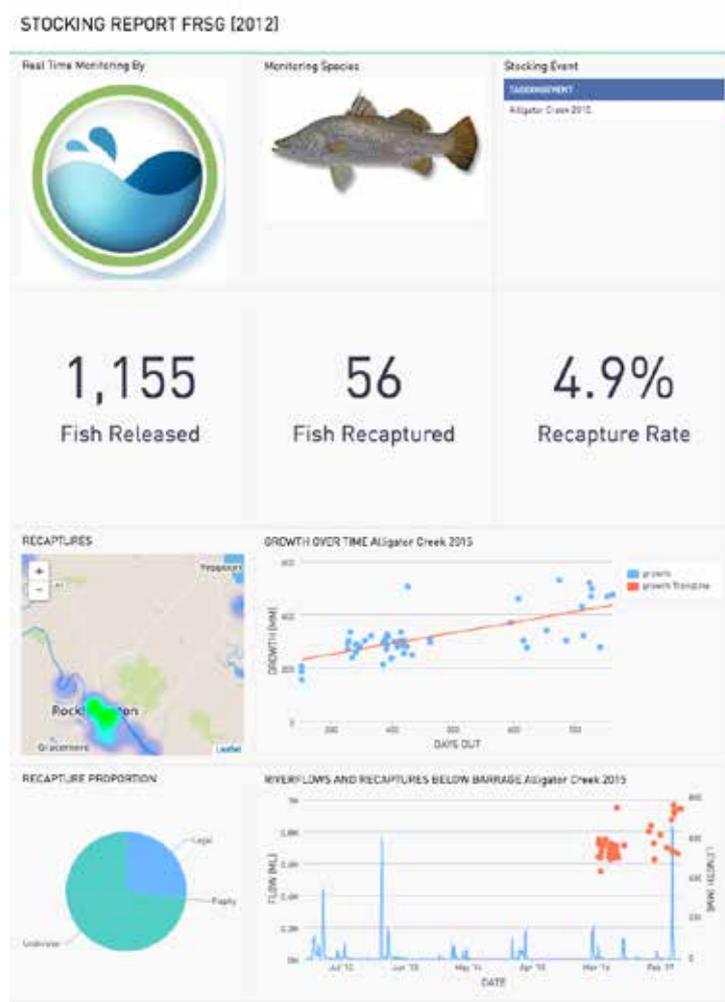


Figure 12: Crystal Bowl dashboard live tracking of Barramundi stocked in the Fitzroy River in 2015

Competition monitoring

Data collected during fishing competitions can provide a snapshot of the state of the fishery based on the competitions targets or objectives. Long-term data from competitions can provide useful data on trends.

There is a growing trend in fishing competitions to include the tagging of fish. Some events offer prizes for the recapture of a tagged fish while others use tagging to monitor their local fisheries. The following fishing competitions have a tagging component supported by Infofish and Suntag:

- ✦ Rocky Barra Bounty at Rockhampton (1999-2016)
- ✦ Boyne Tannum Hookup at Gladstone (2000-2017)

Catch and effort data from these competitions have also been collected as part of the CapReef, Gladfish and Crystal Bowl programs.

The Rocky Barra Bounty targets Barramundi in the Fitzroy River and has been held in Sep-Oct each year for the past 17 years. 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.

Catch rates in the Bounty are now used, along with data from local taggers and T20 fishers, to assess trends in catch rates in the Fitzroy River. *Figure 13* shows the catch rates for the past 10 years from 2007-2016. In 2008 at the end of a long dry period it took 25.1 hours to catch a Barramundi while in 2011 it was 1.6 hours. In that year the event went for 1,200 minutes and there were 1,210 Barramundi caught (1 fish/minute). In 2016 it took 15.5 hours of effort to catch a Barramundi however that year there was a minor flood in the river that created the worst conditions in the 17 years of the event. Further details of the event are available from www.rockybarrabounty.com.

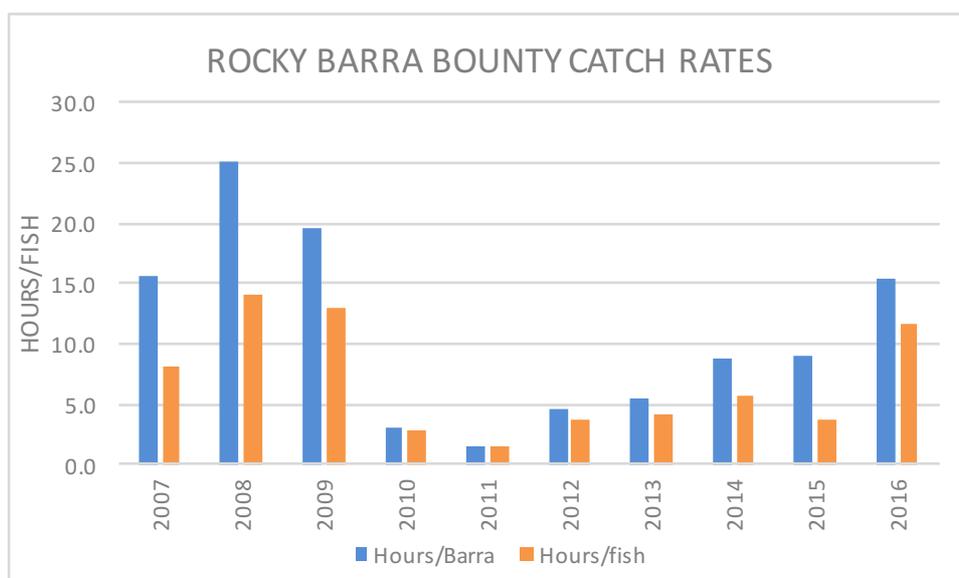


Figure 13: Hours to catch a Barramundi or fish in the Rocky Barra Bounty 2007-2016

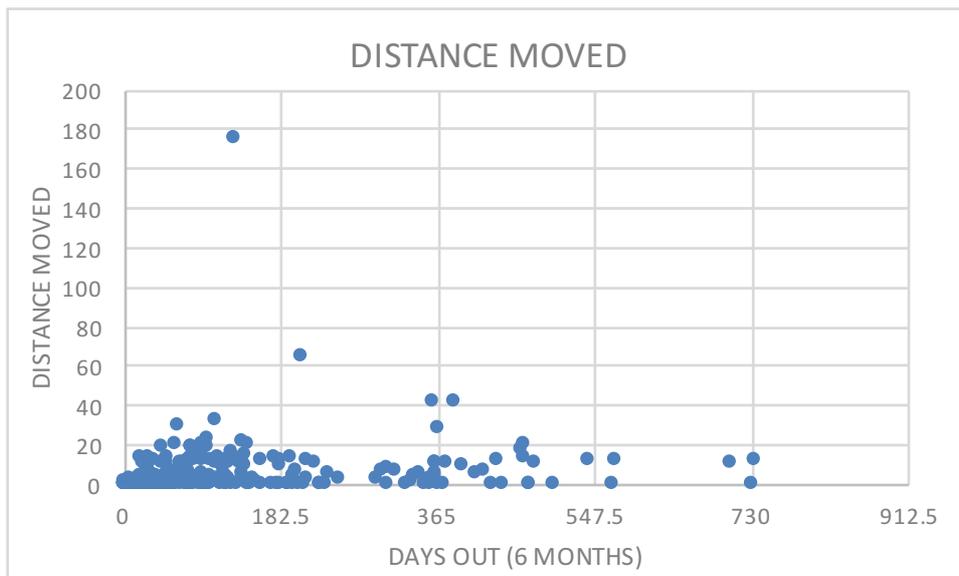


Figure 14: Movement of tagged fish released at the Boyne Tannum HookUp

The Boyne Tannum HookUp in Gladstone is one of the largest fishing competitions in Australia with around 3,000 participants. From 2000 the Gladstone Sportfishing Club has managed a live weigh-in section of the event where fish are brought in alive, tagged, held in display tanks and then released.

All fish have been released at the competition headquarters at Bray Park near the mouth of the Boyne River. Of the fish recaptured 77.2% were recaptured within 6 months and 95.1% were recaptured within 20km of where released. *Figure 14* shows the distance fish moved compared to the time at liberty. Details of tag and catch and effort data collected during the HookUp are in the report “Boyne Tannum Hook Up 2008-2017” available at www.boynetannumhookup.com.au.

Competition monitoring will increase significantly with the introduction of the Trackmyfish phone app. The ABT Tournament circuit has already adopted the app for its competitions.

The app was used to collect data in the ABT Marring River Event in May 2017 and to provide a live scoreboard. Also there was live video streaming throughout the event of 2 top competitors so that the event could be followed by a larger audience. *Figure 15* shows the website that provided live coverage of the event.

It is expected that several large competitions will also take up the app for their events with the Flathead Classic on the Gold Coast considering use of the app for their event.

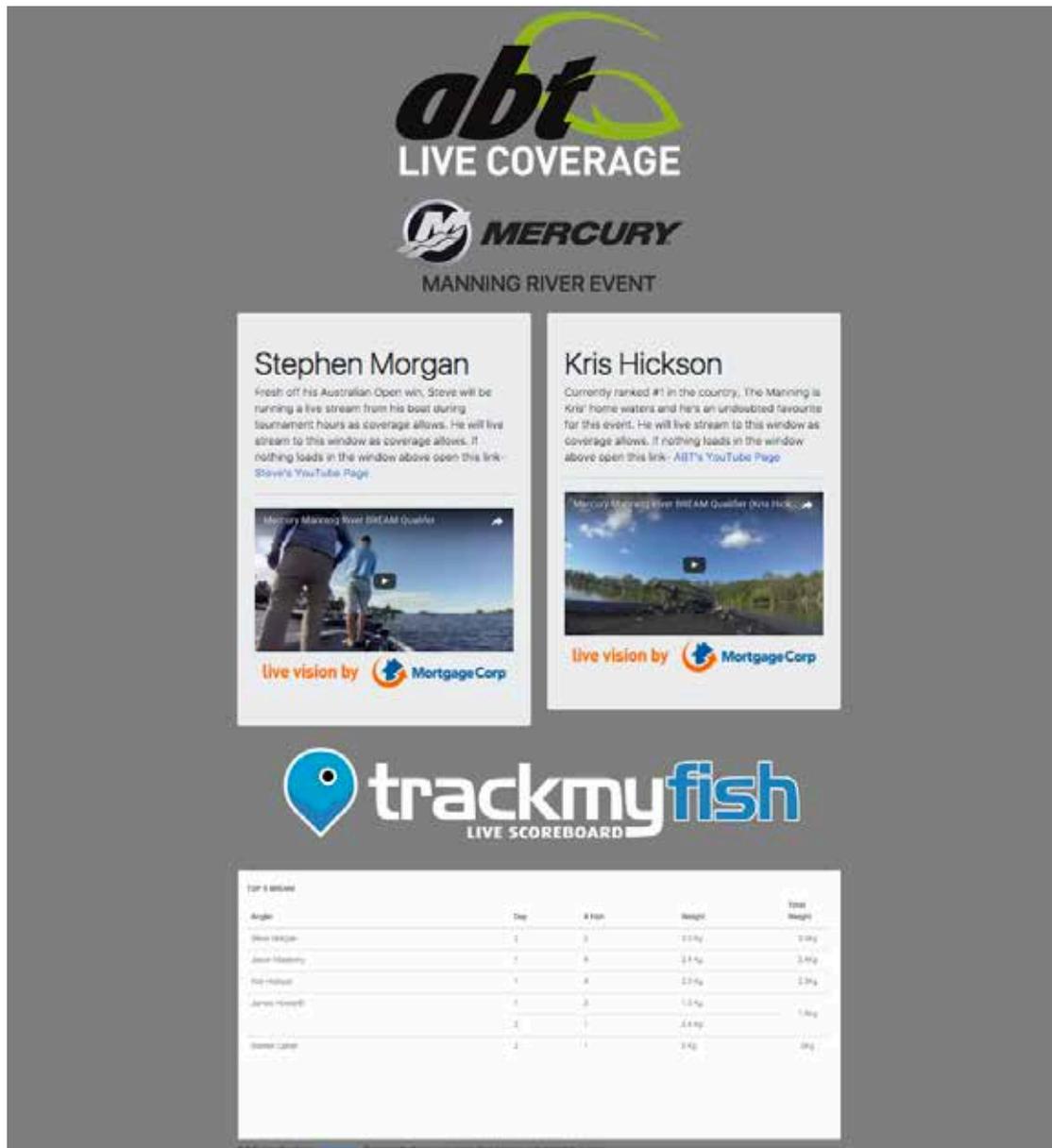


Figure 15: Live coverage of the ABT Manning River Event in May 2017

Fish Health monitoring

Flooding in the Gladstone area in 2011 resulted in the overtopping of Lake Awoonga with an estimated 30,000+ large Barramundi spilling from the lake. This resulted in significant deaths of the fish followed by serious health issues in the Gladstone area. Fish deaths in the Gladstone area continued from 2011-2015 but the numbers reported diminished each year with no deaths reported in 2016.

With the remnants of Cyclone Debbie causing major flooding along much of the Queensland east coast south of Townsville in Apr 2017 it resulted in the further spilling of fish from Lake Awoonga. Dead fish were reported downstream from the lake in the Boyne River. *Figure 16* shows some of the large Barramundi that were found dead in the Boyne River following the spilling of Lake Awoonga.



Figure 16: Large dead Barramundi in the Boyne River after the spilling of Lake Awoonga in Apr 2017

Pest Fish monitoring

Tilapia were first confirmed in the Rockhampton area in 2012 and since then have become wide-spread in the lower Fitzroy River. The Fitzroy Basin Association (FBA) is taking the lead in dealing with Tilapia and Infofish is providing information in support of their work. Tilapia have now been recorded from several locations in the Capricornia area and following the flooding this year it is likely that they will be much more widespread. It is likely that they have or will spread to the Gladstone area. *Figure 17* shows some of the Tilapia removed from a Fitzroy floodplain lagoon.



Figure 17: Tilapia from a Fitzroy floodplain lagoon

Working with the Community

Strategy 3: Develop the capacity of the community to engage in fisheries citizen science

Community groups and client bodies

Suntaggers

Captag

Gladstone Sportfishing Club

Brisbane Valley Anglers

Fish Stocking Groups

Government agencies

Natural Resource Management groups

Great Barrier Reef Marine Park Authority

Environmental groups

Education bodies

Researchers

Fishing competitions

Fishing Tour Operators

Interstate groups

Overseas clients

Strategy tools for Community engagement

Engage and work direct with community groups

Facilitate leadership development

Attracting volunteers

Feedback to contributors

Rewarding volunteer contributions

Training and accreditation

Working with the community

Infotish engages with a wide range of community groups, client bodies and direct with fishers and supports activities being undertaken by those groups or individuals, particularly those associated with fisheries citizen science.

Suntag Australia Inc was set up in 2016 to provide strategic guidance and oversee management of Suntag into the future and allow user groups to contribute to its management. The members of the management committee are in the section “The Suntag Australia Team”.

Infotish maintains a program of attending club or fishing groups meetings and providing presentations on information that is relevant to particular groups.

Infotish convened a workshop on the “Net Free Zones – One Year On” at Cape Hillsborough in Nov 2016. It has also been closely involved with the RRC on the development and implementation of the “Rockhampton Recreational Fishing Development Strategy”. It is also convening a “Rockhampton Recreational Fishing Forum” to be held in Sep to showcase progress in the 3 NFZs.

Leadership development

Having a world-class future oriented information service is not enough in itself to influence fisher’s decision making. It requires the information to be presented in ways that that will lead to engagement and uptake. That requires the information to be credible, presented simply and provided to opinion makers relevant to the information that is provided.

The key opinion makers largely come from T20 fishers and are no longer the baby boomers, so there is a need to engage with the later generations as the next round of leaders. However, those generations access and use information in different ways to the baby boomers and they exercise leadership in different ways.

Infofish has recognised this and is actively working with those younger fishers with a view of developing their leadership skills and providing information to them in a way that they will use. Leaders will generally come from the T20 fishers and so the focus is on those fishers. Infofish has run a series of informal evenings in Brisbane with young fishers to assist with the development of leadership skills.

Attracting volunteers

As well as fishing clubs, stocking groups and fishing businesses individuals can register as volunteers. In Qld that is through Suntaggers and in WA that is through Westtaggers. Almost all volunteers wish to take part in tagging as their primary objective and this year for Suntaggers there was a new tagger signing up every 3 days. This was achieved through information delivery and not any recruitment drive.

Suntaggers have access to a range of resources and support services through the Suntaggers website www.suntaggers.com.au. Infofish manages the website and *figure 18* shows the homepage on the Suntaggers site.

The website provides the following:

- ✦ Allows fishers to join Suntaggers through online registration (*figure 19*)
- ✦ Suntaggers Shop for buying tagging equipment
- ✦ Resources for taggers (maps, projects, awards)
- ✦ Access to taggers own records (read only) through Suntag Online
- ✦ Infofish and Suntag reports
- ✦ Taggers can load trip and tag data for inclusion in database (after validation)
- ✦ Taggers can monitor progress towards tagging awards and print certificates
- ✦ Improved reporting and feedback on recaptures
- ✦ Links to Facebook pages

Once registered Suntaggers need to purchase their own tagging equipment. That can also be done through the website where Starter Kits are available for both dart (spear) and gun (anchor) tags. Videos are also available from the website to show new taggers how to tag fish correctly.

Starter kits (*figure 20*) include tag applicator, record book, measuring ruler and other ancillary equipment. The shop includes a secure payment method for online purchases. When registration is complete and a tagging kit purchased tags are then supplied free of charge (subject to availability).

Suntag Online allows taggers to load their fishing trip and tagging data and to monitor their own data (read only) and provide feedback on any anomalies. It also tracks recaptures of taggers and progress towards awards. Currently there are around 900 registered users.

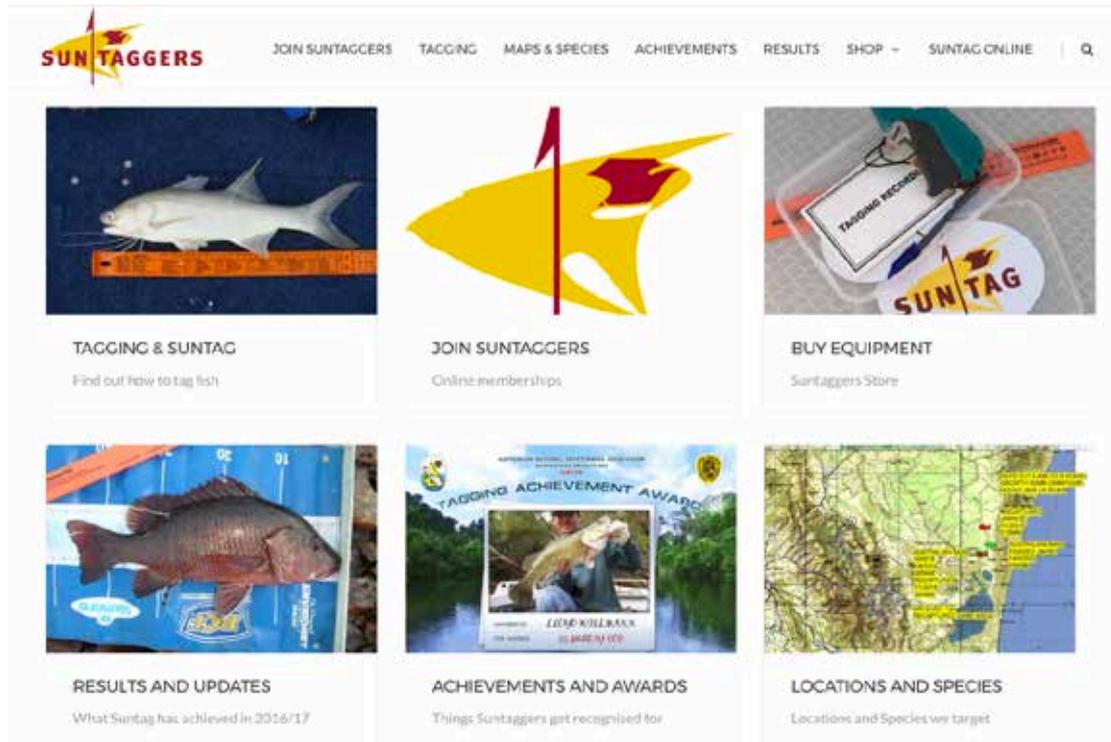


Figure 18: Suntaggers website homepage

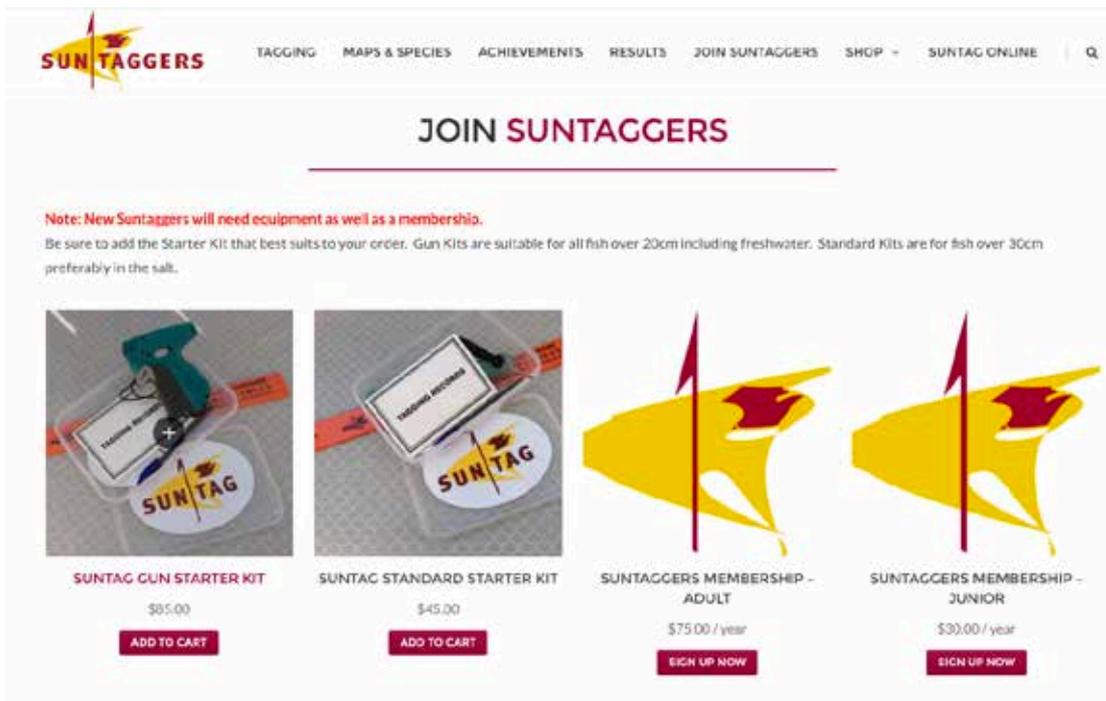


Figure 19: Joining Suntaggers through the Suntaggers website



Figure 20: Suntaggers can purchase Starter Kits from the Suntag Shop

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 Suntag programs are the dart or spear tag and the anchor or gun tag. Both these tags are used in a number of sizes. The durability of these tags is demonstrated by recaptures of fish up to 20 years after tagging and having the number still able to be read.

Feedback to contributors

To ensure that fishers that are contributing data to Infofish through Suntag and Westag remain engaged it is important that there is continual feedback. That is done in several ways and with the expansion of data collection there will be an increase in the feedback to contributors.

For taggers, the most important element is feedback on recaptures of fish that they have tagged. Recapture details are provided to both the person that recaptured the fish as well as the tagger. Recapture details are reported though:

- ✦ 1800 free call number
- ✦ Infofish websites
- ✦ Facebook
- ✦ Infofish etrip form
- ✦ Commercial fishers
- ✦ Email
- ✦ Mail

Feedback is provided in several ways.

- ✦ Verbally when reported through the 1800 toll free number
- ✦ Details are provided from the database when reported through the website
- ✦ Certificates to both the fisher recapturing the fish and the tagger

The methods of reporting recaptures have changed significantly. *Figure 21* shows how recaptures were reported since 2000 in 5 year intervals. Up to 2010-2015 the 1800 phone number was the most common method for reporting recaptures. That is not surprising as the phone number is on the tag. However, for 2015-2020 (up to 2017) the website has taken

over as the most used reporting method, even though there is no reference to the website on the tag.

Reporting by commercial fishers has fallen to an all-time low and reporting by mail has almost disappeared. An increasing number of recaptures are being reported through Facebook however the numbers are still very low.

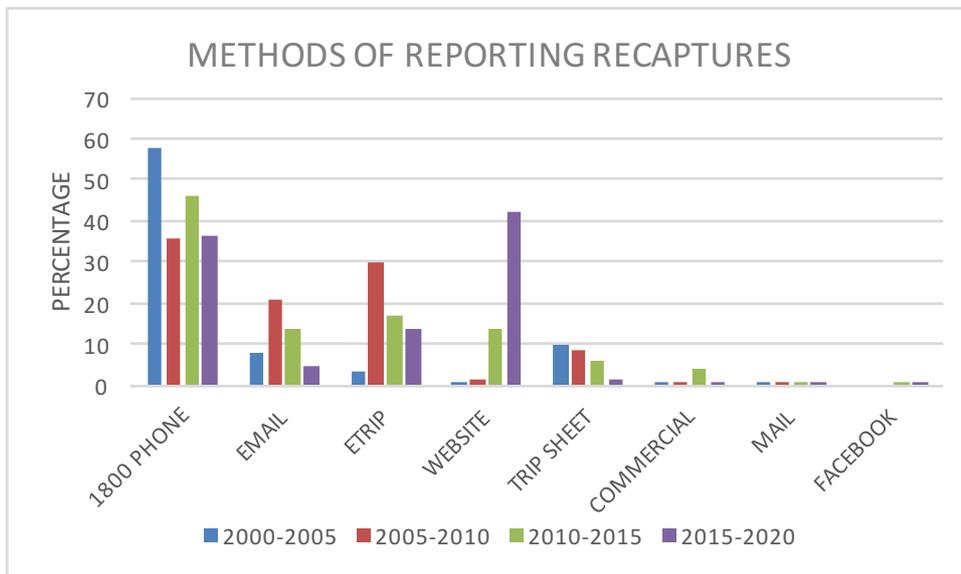


Figure 21: Methods of reporting recaptures from 2000-2020 using a 5-year time span

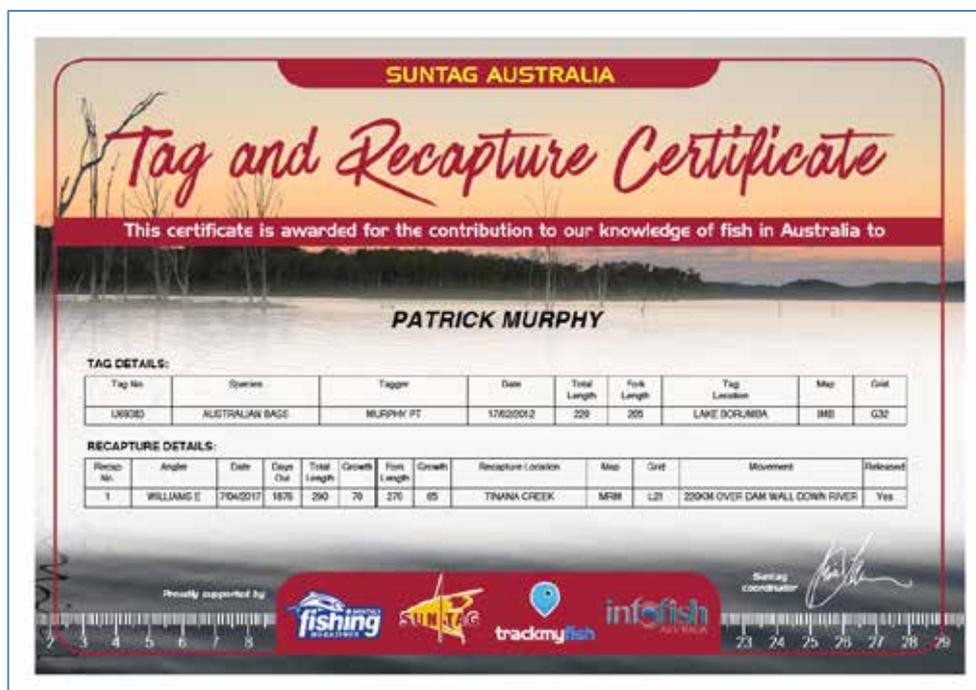


Figure 22: One of the new tag and recapture certificates

Certificates are generated electronically and there are several templates that can be used as backgrounds for the certificates. Customised templates are available for the Rocky Barra Bounty and Boyne Tannum HookUp and can be provided for other projects or competitions. This year a range of new templates were introduced courtesy of Fishing Monthly magazines as shown in *figure 22*.

Rewarding Volunteer Contributions

At this stage, rewarding contributions by fishers has focused on taggers however as data collection expands it is likely that additional rewards for volunteer contributions will be developed.

The Suntag Hall of Fame was established in 2016 to recognise those taggers that have made significant contributions to tagging. Mick Dohnt (*figure 23*) remains the leading tagger with over 25,000 fish tagged.

The inaugural 13 inductees into the Hall of Fame were:

- ✦ Mick Dohnt (Brisbane Sportfishing Club, Moretag and Suntaggers)
- ✦ Lloyd Willmann (Southern Brisbane Sportfishing Club)
- ✦ Keith Harveyson (Townsville Sportfishing Club)
- ✦ Michael Powell (Captag)
- ✦ Daniel Powell (Captag and Suntaggers)
- ✦ Barry Oxford (Brisbane Valley Anglers Fish Stocking Association)
- ✦ Jeff Sorrell (Bribie Island Sportfishing Club, Moretag)
- ✦ Bob Dover (Kingaroy Sportfishing Club)
- ✦ Peter Stoneley (Gladstone Sportfishing Club)
- ✦ Geoff Chapman (Cairns Sportfishing Club)
- ✦ Glen Baker (Qld Sportfishers, Suntaggers)
- ✦ Alan Dolan (Lively Lures)
- ✦ Bill Sawynok (Captag)

Suntag provides several awards to recognise the efforts of its top taggers. 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)

Progress towards awards is monitored in the Suntag database and advice is automatically sent to recipients when they reach an award milestone. This year Suntag dashboards were introduced as an additional tool to monitor awards. *Figure 24* shows part of the dashboard showing Tagging Achievement Awards.



Figure 23: Mick Dohnt the inaugural member of the Suntag Hall of Fame



Figure 24: Suntag dashboard (part) showing Tagging Achievement Awards



Figure 25: New Tagging Achievement Award certificate introduced in 2016

In reaching award milestones is acknowledged with a certificate that includes a photo of the species for the award as shown in figures 25. This year the award certificates are being updated as ANSAQ is no longer a part of Suntag.

In 2016-17 these are additional awards that have been achieved:

- ✦ 44 Tagging Achievement Award (37 achieved in 2015-16)
- ✦ 3 Tagging Excellence Award (4 achieved in 2015-16)
- ✦ 0 Frequent Tagger Award (2 achieved in 2015-15)

Taggers that use Suntag Online can look up their progress towards awards. When an award is achieved, the system sends an email to the tagger and Infofish Australia. 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.

Training and Accreditation

Training of taggers has always proven to be a challenge given the limited funding and the geographic spread of taggers. In 2015, online training was introduced along with an accreditation process. This year the Accreditation process was upgraded and a new website established <http://accreditation.suntag.org.au/>. There are currently 47 accredited taggers.

A 3 step accreditation process allows taggers to gain basic accreditation (*figure 26*). 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

Taggers that complete the process successfully become Accredited Suntaggers and are issued with an accreditation card.

Training and accreditation are currently limited to tagging but as data collection expands it is likely that these elements will also be expanded. With the introduction of the Trackmyfish phone app there have been a range of training aids prepared for use of the app.

Training videos, as shown in *figure 27*, on how to tag fish are available from the Suntaggers website www.suntaggers.com.au.

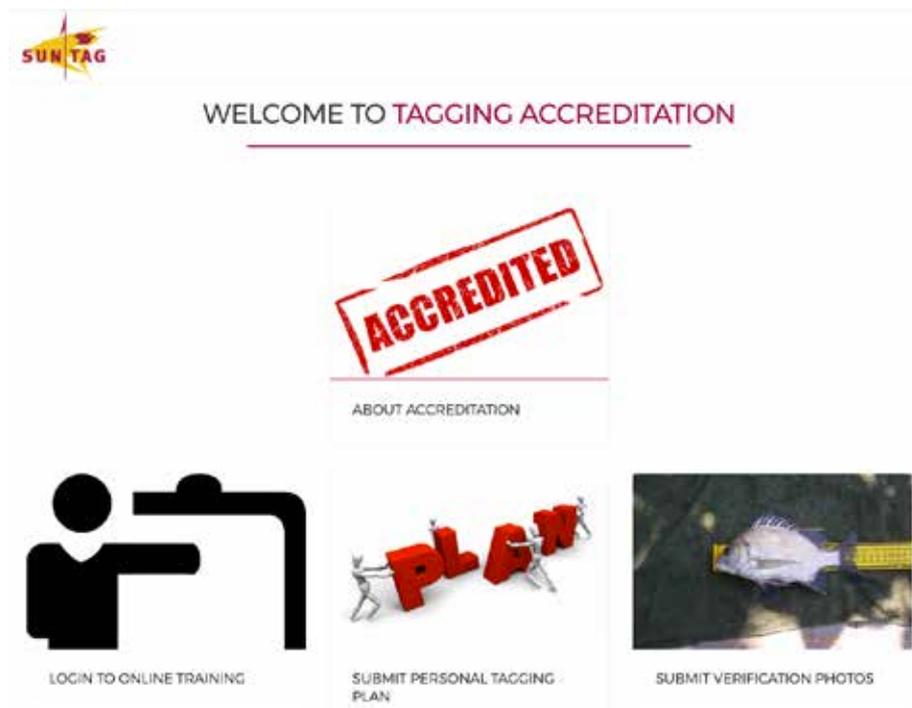


Figure 26: Suntag accreditation available through online training

TAGGING BASICS

✓ HOW TO TAG ? WHY TAG FISH

Tagging and Releasing fish is not difficult but it's important for the health of the fish that the fish are handled with care. The following short videos demonstrate the key aspects of tagging. If you follow these guides you will be on your way to successful Tag and Release.

Tagging Basics

How to tag a fish - dart tags



The image is a video thumbnail for a tutorial titled 'HOW TO TAG FISH: DART TAG'. It shows a large fish, likely a sea bass, being held in a red plastic mouthpiece. A yellow banner at the top of the video frame contains the title. A play button icon is centered over the fish. In the bottom left corner of the video frame, there is a logo for 'SUNTAG' featuring a fish and a tag. The background of the video is a blue textured surface.

Figure 27: Video clips on tagging available through Suntaggers website

Innovation in data collection and information delivery

Strategy 4: Continue to innovate in all aspects of data collection and information delivery to better inform public policy

Strategy tools (applying technology)

- Trackmyfish phone app
- Crystal Bowl dashboards
- Crystal bowl forecasting
- Visualising data
- Infofish-Suntag reports
- Infofish- Suntag Websites
- Infofish-Suntag Facebook (social media)
- Infofish 2017 database
- Technology partnerships

Trackmyfish phone app

With the ever-increasing use of mobile phones for a range of new uses Infotish has invested in the development of a phone app to collect a broad range of fish catch, tagging, competition, stocking and other data from more recreational fishers. The app was developed in conjunction with the App Team based on the Sunshine Coast and version 2 of the app was released in May 2017 and is available for both iPhone and Android.



Figure 28: Trackmyfish app set to improve and increase data collection

The app is based around taking a photo of a fish and can be configured to a wide range of fishing scenarios. The app can be used where there is no mobile reception as it stores the data until it is in service and then the data can be uploaded to the database. Figure 28 shows the login screen of the app.

The app will allow significantly more data to be collected from a broader range of fishers and from a broader range of geographic locations including in other states besides Queensland and from overseas. Details are available at the Trackmyfish website at www.trackmy.fish.

In the longer term, it is expected that Trackmyfish will become the primary method for collecting data to enhance the delivery of real time information.

Crystal Bowl dashboards

This year saw the continued expansion in the use of Crystal Bowl dashboards using Periscope data technology. This allows dashboards to be set up through the Crystal Bowl website and elsewhere to reflect data in the Infotish-Suntag database or Infotish Data Warehouse in real time.

Figure 29 shows the part of the dashboard set up to provide a state overview of the data on Dusky Flathead.

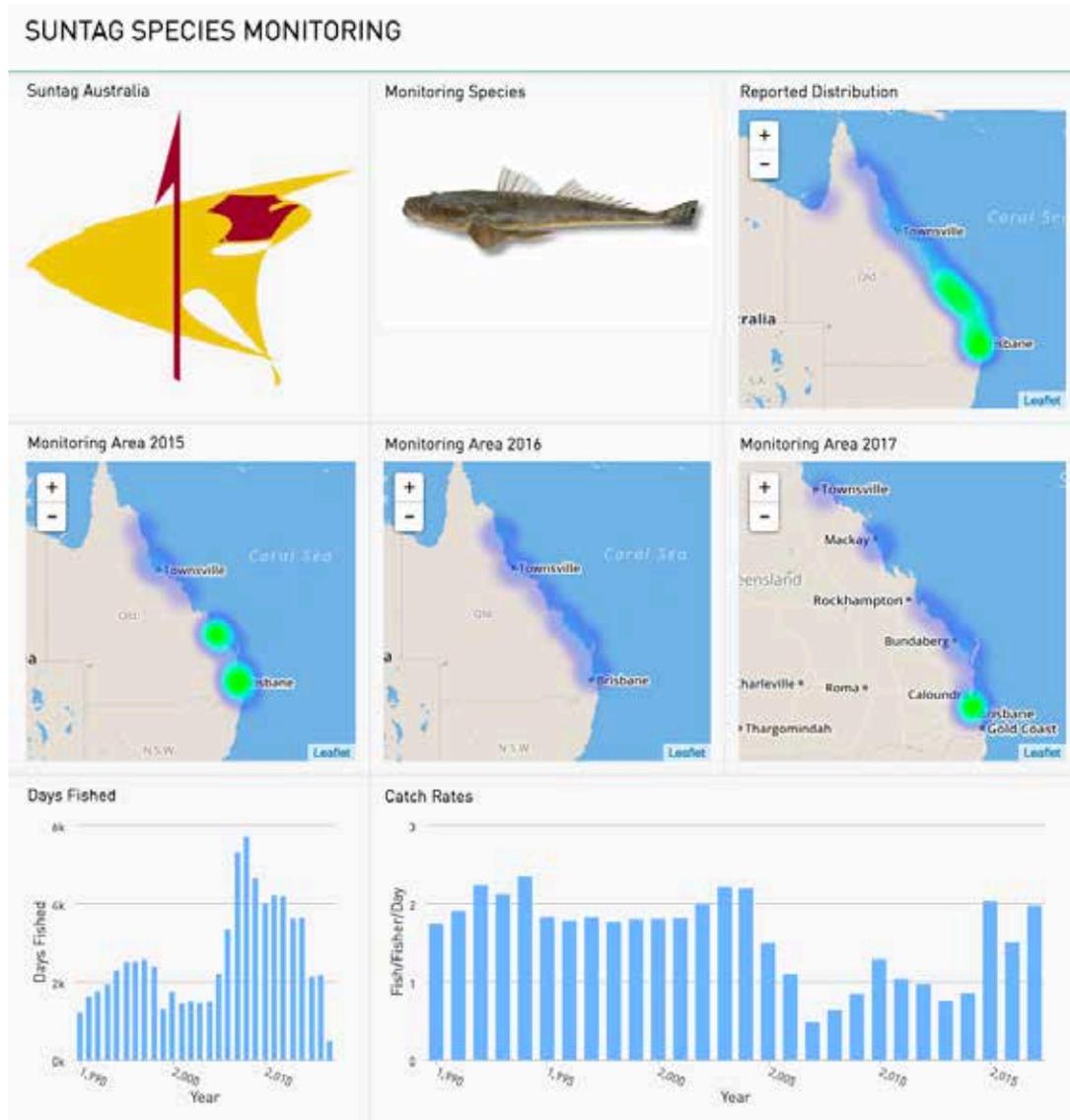


Figure 29: Crystal Bowl dashboard set up to provide a state overview of the data on Dusky Flathead

Crystal Bowl forecasting

Where there is sufficient current and historic data the Crystal Bowl goes a step further and forecasts a range of parameters in relation to a species or location. The Fitzroy River in Central Queensland was the birth place of the Crystal Bowl and is the testing ground for many of the innovations that have emerged.

The first forecasts were made in 2011 for Barramundi in the Fitzroy River in relation to catch rates and fish sizes. Since then forecasts have extended to catch rates, fish sizes, trends in stocks and recruitment. Forecasts for Barramundi have extended to Gladstone and Broadsound and for King Threadfin in the Fitzroy River.

For Barramundi forecasts are made at the end of a season for the next season. A review is undertaken mid-season to adjust forecasts and a comparison of forecasts compared with actual is undertaken at the end of the season. *Figure 30* shows the forecasts for Barramundi

in the Fitzroy River for the 2017 season and the mid-year review of fish sizes and catch rates. Figures in red show the revised forecasts. In the review, of the 10 forecasts 6 were within 10% of the forecast range and did not require adjusting.

MEASURE	FORECAST	ACTUAL	GRAPH
FITZROY	2017 SEASON	JUNE 2017	
Fish sizes		Taggers	
Undersize fish 200-579mm	40% (30-50%)	31.0%	
Legal - trophy fish 580-999mm	55% (45-65%)	65.3%	
Trophy fish >1m	5% (0-15%)	3.7%	
Percentage of fish in size ranges		Highest LEGAL 2017 65.3 Trophy 2017 3.7 Lowest 2009 4.2 2010 0.1	
Actual catch rates taggers and avid fishers	Taggers/avids Overall 2.5 (2.3-2.7) Legal fish 0.75 (0.6-0.9) Legal revised 1.2 (1.0-1.4)	Taggers/avids Overall 2.1 Legal fish 1.3	
Catch rates percentage change compared with 2016	Taggers/avids Overall 0% (-10-+10%) Legal fish +30% (20-40%) Legal revised +100% (90-110%)	Taggers/avids Overall -17.6% Legal fish +115.3%	

Figure 30: Infotish turning data collected into information products

Visualising data through Google Earth

To make sense of the huge volume of data in the Infotish database it was decided to use Google Earth as the primary tool for visualising the data. This was because of the widespread use of Google Earth by fishers. There are now around 400 Google Earth views that provide a view of the data. These maps can be regenerated at any time to reflect current data in the database.

Google Earth maps can now be generated to display the following:

- ✦ Tag and recapture location of recaptured fish
- ✦ Tag locations showing extent of tagging using Suntag grid maps
- ✦ Extent of fishing effort in an area
- ✦ Time sequencing of tag locations showing changes over time
- ✦ Flyovers following fish from tag to recapture site
- ✦ Photographs, video, graphs and environmental data can be added to the maps
- ✦ Combined fishing effort and tagging
- ✦ Recruitment survey details

Figure 31 shows fish movements into and out of the Great Sandy Marine Park. This was provided to the review of the Marine Park currently underway. This and other Google Earth maps can be viewed interactively from the Infofish database.

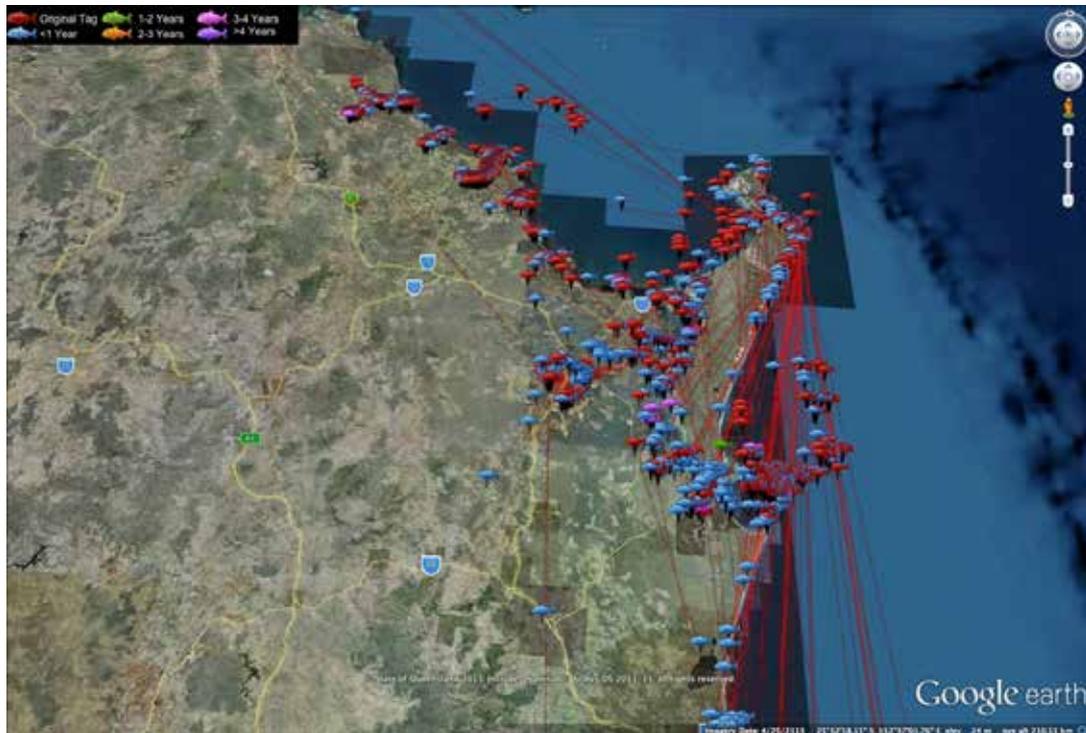


Figure 31: Google Earth map showing fish movement for the review of the Great Sandy Marine Park

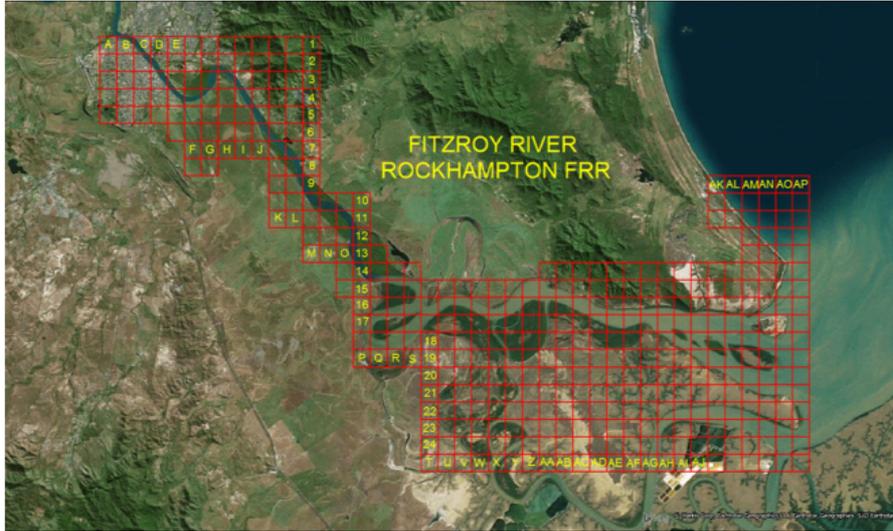
Fundamental to the visualisation of data was the introduction of a map/grid system in the early days of Suntag to allow locations where fish were tagged or recaptured to be recorded. Grids were mostly 1km² while some were 2km². This allowed fine scale locations to be recorded without giving away “secret spots”.

Maps are produced using MapInfo GIS software and then transferred to Google Earth. There are now over 300 maps covering Queensland in use and these are available from the Suntag website in Google Earth format or as a pdf. Figure 32 is the map of the Fitzroy River both as a pdf and in Google Earth. This allows spatial analysis of the data at a fine or aggregate scale as required.

MapInfo was upgraded this year and grid maps are now able to be produced for anywhere in the world. Maps are gradually being extended for use with Trackmyfish and are now available for the NSW north coast, coastal areas in Western Australia, Northern Territory (McArthur River, Daly River and Darwin Harbour), around Adelaide in South Australia and the first overseas map for Belize in Central America.



SUNTAG AUSTRALIA GRID MAP
 FITZROY RIVER ROCKHAMPTON FRR
 Last updated 24 JUNE 2017



Grid map remains the property of Infofish Australia



Figure 32: Tagging grid maps of the Fitzroy River in pdf and Google Earth format

Infofish-Suntag Reports

In the last decade the Internet has changed everything about information delivery. The era of paper printed reports is largely over with various electronic versions taking over. Information is also required to be presented in smaller chunks if it is to gain attention. Also delivery of visual information has taken over from words. Facebook, Twitter, YouTube and Instagram generally require a very short attention span and there is an ever-growing competition for people's time. That is the environment in which information delivery must compete.

Infofish-Suntag mini-reports provide a snapshot of Infofish-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. These reports and other Infofish reports are available from www.infofishaustralia.com.au. Figure 33 shows how the reports are presented on the home page of the website based on geographic location. Clicking on view reports goes direct to the relevant reports. The Infofish website provides access to over 40 reports with 27,000 downloads of these reports so they are proving to be popular.

New reports this year included an updated report on the Rocky Barra Bounty and Boyne Tannum HookUp fishing competitions. A second report was produced on the "Assessing Fishing Trends in the St Helens Bay to Cape Hillsborough Net Free Zone 2015-2017" and another report was produced on the "Great Sandy Straits Commercial Catch from 2000-2015".

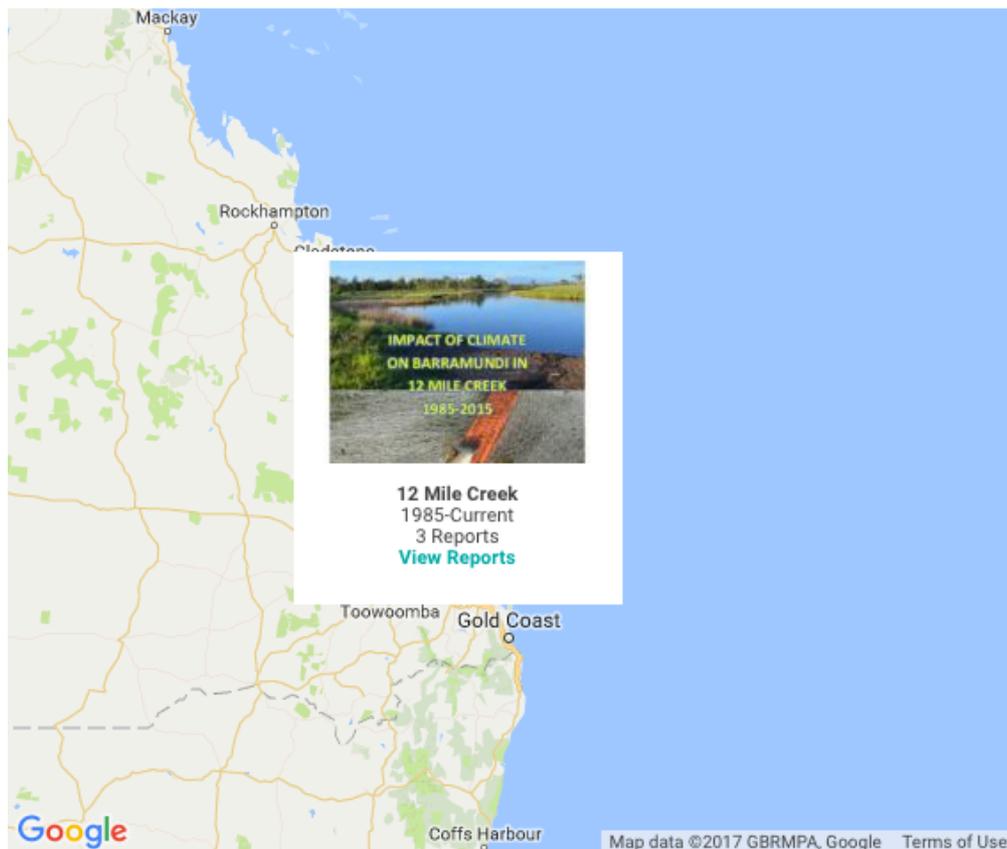


Figure 33: Infofish reports on 12 Mile Creek in Central Queensland

Infotish-Suntag Websites

Infotish maintains the following websites:

- Infotish Australia www.infotishaustralia.com.au
- Crystal Bowl www.crystal-bowl.com.au (currently being upgraded)
- Rocky Barra Bounty www.rockybarrabounty.com

Infotish also manages the Suntag websites:

- Suntag www.suntag.org.au
- Suntaggers www.suntaggers.com.au
- Suntag Accreditation www.accreditation.suntag.org.au

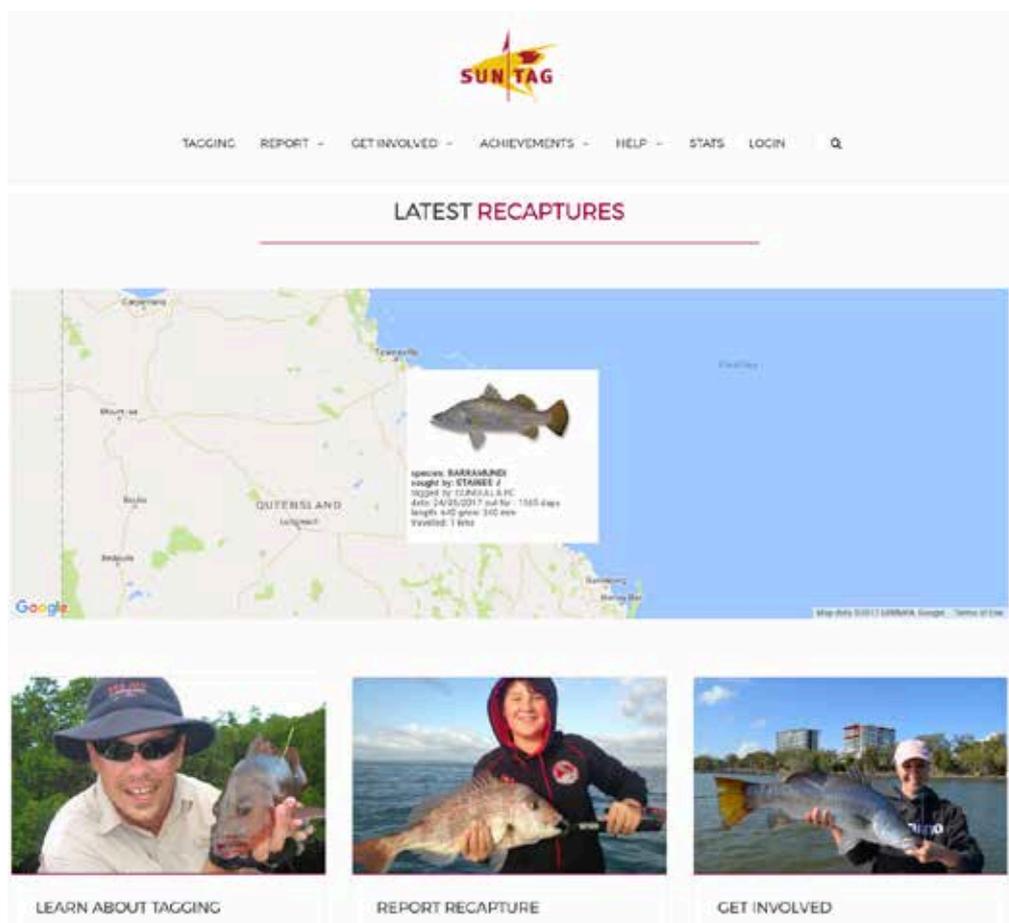


Figure 34: Suntag website homepage

The Infotish Australia website provides information on the business and access to reports. The Crystal Bowl website is currently being upgraded. It provides access to real time monitoring dashboards and to regional forecasts. The Suntaggers website allows fishers to register with Suntag, purchase tagging equipment, view tagging videos and a range of other resources. The Rocky Barra Bounty website covers the fishing competition held each year on the Fitzroy River. The Suntag website homepage is shown in *figure 34* and provides details of tagging, reporting recaptures, how to get involved and access to Suntag dashboards and other resources.

Infotish-Suntag Facebook Pages

Facebook, Twitter, YouTube and Instagram are some of the platforms that are part of the ever-growing competition for people’s time. Facebook has become a prime medium for distributing real time information from Suntag and other Infotish projects. Each project has its own Facebook page to compliment the website. Infotish Facebook pages are:

- Crystal Bowl www.facebook.com/infotish.crystal.bowl
- Rocky Barra Bounty www.facebook.com/RockyBarraBounty

Infotish also manages the Suntag Facebook page:

- Suntag www.facebook.com/Suntag.Queensland

For the first time posts on the Suntag Facebook page have exceeded an average reach of 10,000 (10,750). There were 33 posts for the year with a total reach of almost 354,000 and the best single post had a reach of almost 47,000. *Figure 35* shows the Suntag Facebook page while *figure 36* shows the reach of each of the posts.



Figure 35: Suntag Facebook page

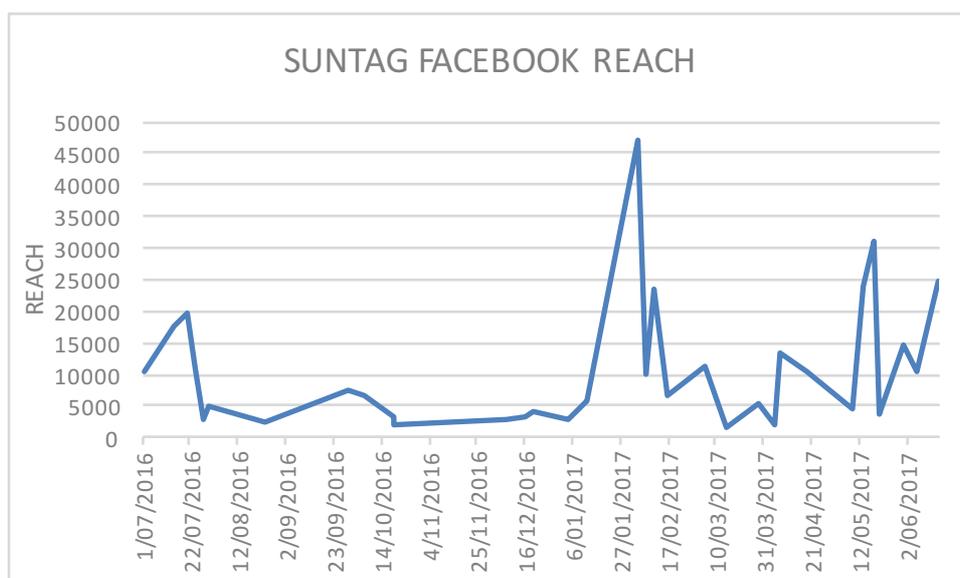


Figure 36: Timeline of Suntag Facebook posts in 2016-17

Infofish 2017 Database

The Infofish 2017 online database is the central hub for the collection and storage of a range of fisheries data from Suntag, Westag and Infofish Citizen Science projects. The database is located at <http://qld.info-fish.net/infofish> and requires a secure login for access. *Figure 37* shows images stored in the database.

Some of the features of the database are:

- ✦ The database now has over 1.3 million fish records (Qld 1.16 million, WA 42,000 and NT 31,000)
- ✦ Includes tagging data collected by Suntag, Westag in Western Australia and tagging data from McArthur River and Daly River in the Northern Territory
- ✦ Allows taggers to view their own tagging, recaptures and awards (read only) through a secure login and password (currently over 900 registered users)
- ✦ Login page provides the latest statistics including, top 10 taggers for month, top 20 taggers for the year, top species for the year and recaptures this month
- ✦ Photographs, videos and standard fish images stored along with text data
- ✦ Database linked to Google Earth to allow easy and near real time visualisation of data
- ✦ Recaptures can be lodged online through the Suntag website with instant feedback on the fish direct from the database
- ✦ Tagging and other data can be lodged online or via email with over 98% of data now lodged electronically
- ✦ Incorporation of recruitment survey data including site details and photographs

Tracking		
Competition:	<input type="text"/>	Latitude Act: Number Latitude Act for location where fish caught with south latitude being negative eg -23.23.567
Location:	<input type="text"/>	Longitude Act: Number Longitude Act for location where fish caught with east longitude being positive eg 153.24.456
Latitude Act:	<input type="text"/>	Latitude Summary: Number Latitude Summary for location where fish caught with south latitude being negative eg -23.23.567
Longitude Act:	<input type="text"/>	Longitude Summary: Number Longitude Summary for location where fish caught with east longitude being positive eg 153.24.456
Latitude Summary:	-23.52119783333333	Description: Description Tag description on competition
Longitude Summary:	150.995471	Video: URL Link to video source eg http://www.youtube.com/
Description:	<input type="text"/>	
Image:		
Second Image:		
Video:	<input type="text"/>	

Figure 37: Images of fish stored in the Infofish 2017 database

Technology partnerships

Suntag has used Hallprint tags since its inception and so with the development of tag data collection (Trackmyfish) and information delivery (Crystal Bowl dashboards) it became logical to move toward marketing a complete tagging package. As Hallprint already market tags worldwide this opens the opportunity to market Trackmyfish and Crystal Bowl dashboards internationally along with Hallprint tags. *Figure 38* shows the home page of the Hallprint website.

This partnership has yielded the first international client in Belize in Central America.



Figure 38: Hallprint fish tags website home page

Suntag in 2016-17



Suntag Highlights 2016-17¹

- ✦ The establishment of Suntag Australia Inc in 2016 was the most significant change in Suntag management in the past decade
- ✦ Total fish and crab records in the database now exceed 1.15 million records with over 782,000 tagged fish and 61,000 recaptures
- ✦ A total of over 10,100 taggers (500 this year) have now participated in Suntag and over 18,000 fishers have reported the recapture of a tagged fish (950 this year)
- ✦ Over the past 10 years 35 Frequent taggers (T1 fishers) have accounted for 96,000 (35%) of the total number of fish tagged while the remaining 3,270 taggers accounted for 119,000 (43%) of the fish tagged
- ✦ Over the past 10 years fish stocking groups accounted for 40,000 (14%) fish tagged and researchers 23,000 (8%)
- ✦ Mick Dohnt remains the top tagger overall having tagged a total of over 25,400 fish or 3.3% of the total fish tagged
- ✦ Infofish recruitment surveys are now fully integrated into the database with 1,040 surveys and 68,500 fish recorded
- ✦ Fishing trips with catch and effort details now total 48,100 (2,200 this year)
- ✦ Barramundi is the most tagged species with 257,000 tagged and 19,000 recaptured (over 22,400 including multiple recaptures)
- ✦ The overall recapture rate for fish, excluding crabs was 7.9% with a 6.6% recapture rate for 2015-20 (to 2017)
- ✦ The release rate of recaptured fish for the past 13 years was over 60% and almost 75% for the past 3 years
- ✦ The released rate of legal sized fish by recreational fishers (excluding taggers) now exceeds 40% for Barramundi and Dusky Flathead, 30% for Mangrove Jack and over 80% for Australian Bass

Suntag Background

Suntag commenced in 1986 as the Sportfish Tagging Program under ANSAQ to obtain movement and growth of key recreational species. In the mid-1990s it became Suntag and has been managed by Infofish since 1995. Over its 30 years it has grown to be one of the largest fisheries' databases in the world where data have been mostly collected by volunteers.

Suntag is now the primary repository of tagging data in Queensland for tagging carried out by Suntag taggers, FQ researchers, fish stocking groups, government and community monitoring programs and some research institutions and universities.

¹ All figures based on Suntag records in the database at 30 June 2017

Infofish and Suntag now have a substantial dataset spanning a 30 years timeline and data have been used for a wide range of purposes including:

- ✦ Growth and movement
- ✦ Marine park planning
- ✦ Stock assessments
- ✦ Fish survival
- ✦ Monitoring stocked fish
- ✦ Environmental impact assessments
- ✦ Real time monitoring
- ✦ Ecosystem modelling
- ✦ Stock predictions
- ✦ Climate change
- ✦ Assessing recruitment
- ✦ Ecosystem and fish health
- ✦ Assessing local/regional fishing
- ✦ Assessing fishing trends including changes in lure types
- ✦ Impact of changes to regulations

Fish in Suntag Database

The database passed its most significant milestone with over 1 million fish and crab records in the database in 2013. Current statistics for the Suntag section of the database (added in 2016-17):

- ✦ 1,156,700 fish records (38,100)
- ✦ 782,600 tagged fish (19,500)
- ✦ 61,800 recaptures (1,600)
- ✦ 48,100 fishing trips with catch and effort (2,200)
- ✦ 325,000 other fish from catch records (7,000)
- ✦ 1,040 recruitment surveys (120)
- ✦ 68,500 fish from recruitment surveys (10,200)
- ✦ 4,080 photographs of tagged and recaptured fish (320)

Total fish added to the database each year in the last 10 years is shown in *figure 39*. The most fish were added to the database in 2007-08 when 108,170 fish were added.

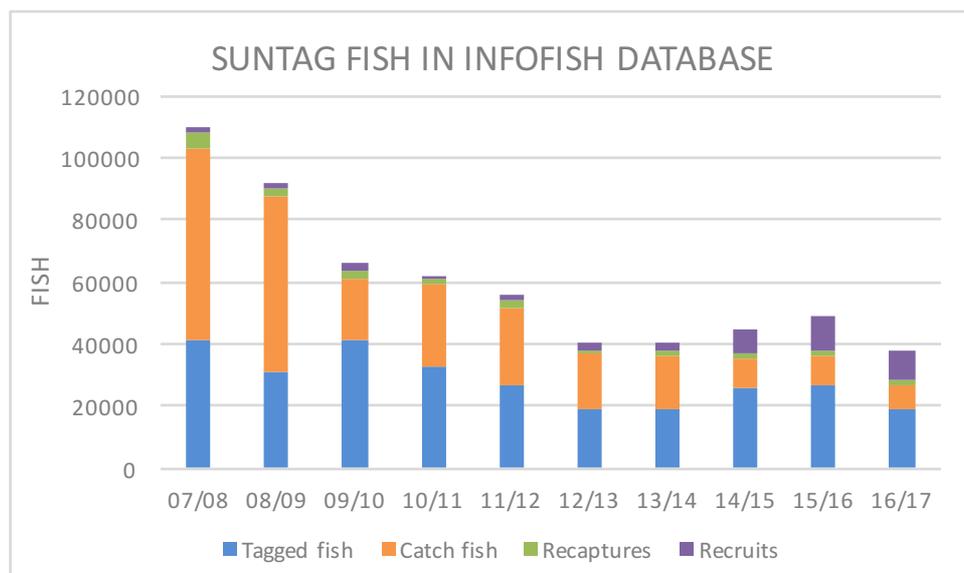


Figure 39: Total fish added to database each year from 2007-08 to 2016-17

Suntag Participation

Numbers participating in Suntag are shown in *figure 40*. A total of 10,100 taggers have now participated in Suntag having tagged fish since 1986-87. In 2016-17 there were 502 fishers that tagged at least one fish. A total of over 18,000 fishers have participated in Suntag though reporting the recapture of a tagged fish.

In 2016-17 there were over 950 fishers that reported the recapture of a tagged fish with many fishers recapturing more than one fish. A total of over 1,450 fishers contributed data to Suntag this year through tagging fish, reporting recaptures and catches.

The steady decline in fishers tagging over the past 10 years reflects a general decline in participation in recreational fishing and a fall in fishing club numbers. The fall this year is the result of some ANSAQ taggers leaving Suntag due to the organisation setting up an alternative tagging program. There were over 500 taggers that tagged at least 1 fish this year with 105 new taggers registered this year (about 1 every 3 days).

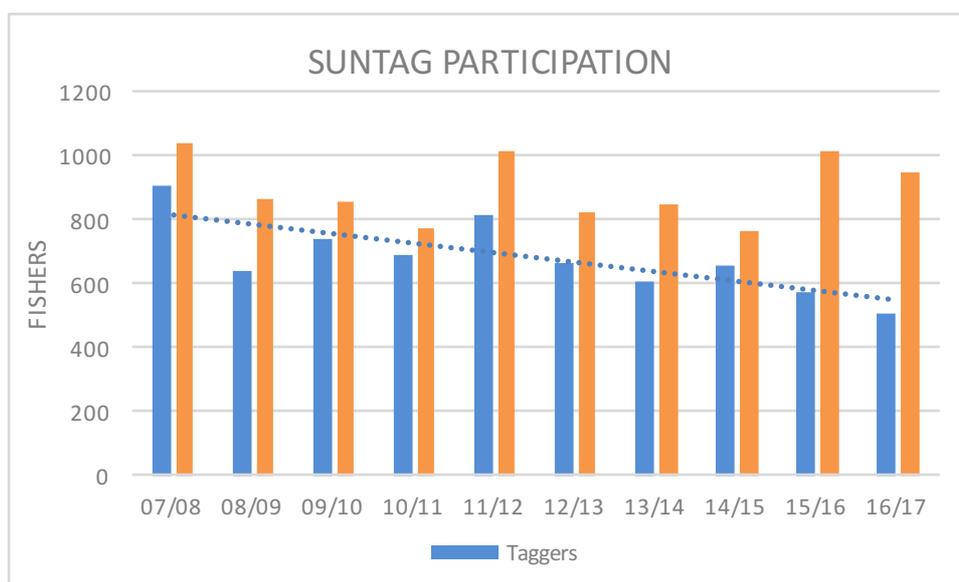


Figure 40: Summary of participation in Suntag from 2007-08 to 2016-17

Fish Tagged and Recaptured

Figure 41 shows the number of fish tagged and recaptured each year in the past 10 years. In 2016-17 there were 19,500 fish tagged and 1,600 recaptures (including multiple recaptures) recorded. Tag numbers for this year will increase as late data are received and the total will be around 20,000. From 2007-08 to 2011-12 there were over 25,000 fish tagged in each year. The fall in 2012-13 and 2013-14 was due to reductions in funding issues as was also the case this year. While funding was halved the numbers of fish tagged were comparable with 2012-13 and 2013-14.

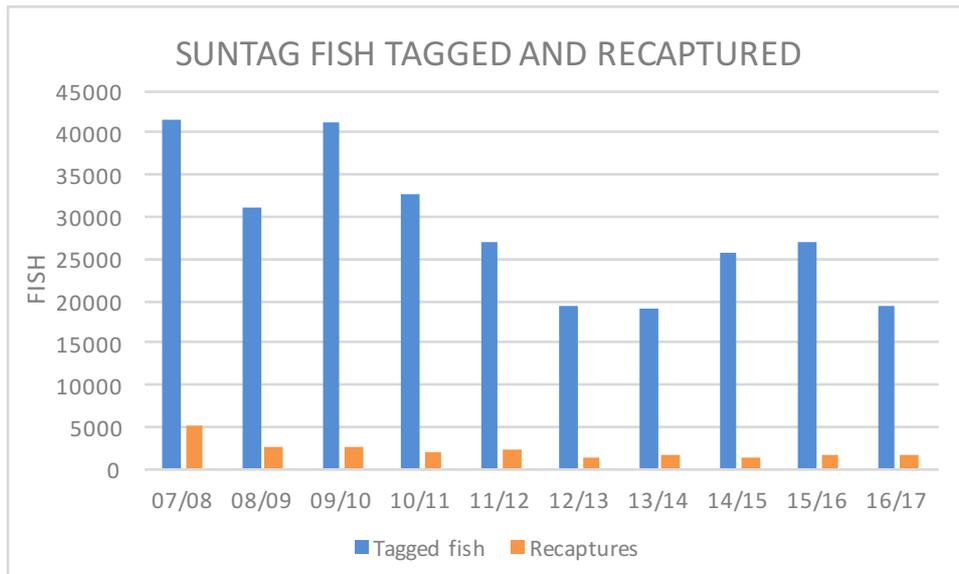


Figure 41: Fish tagged and recaptured each year from 1986-87 to 2015-16

Categories of taggers

Figure 46 shows the categories of taggers that have tagged fish. These are:

- ✦ Frequent taggers (tagged over 1,000 fish)
- ✦ Other Suntag taggers (tagged at least 1 fish)
- ✦ Fish stocking groups
- ✦ Researchers (QF and others)

Over the past 10 years just 35 Frequent Taggers (T1 fishers in the top 1%) accounted for 96,000 (35%) of the fish tagged while the remaining 3,270 taggers account for 119,000 (43%). Fish stocking groups have tagged 40,000 (14%) and researchers 23,000 (8%). Mick Dohnt remains the top taggers with 25,400 fish tagged or 3.3% of the total fish tagged.

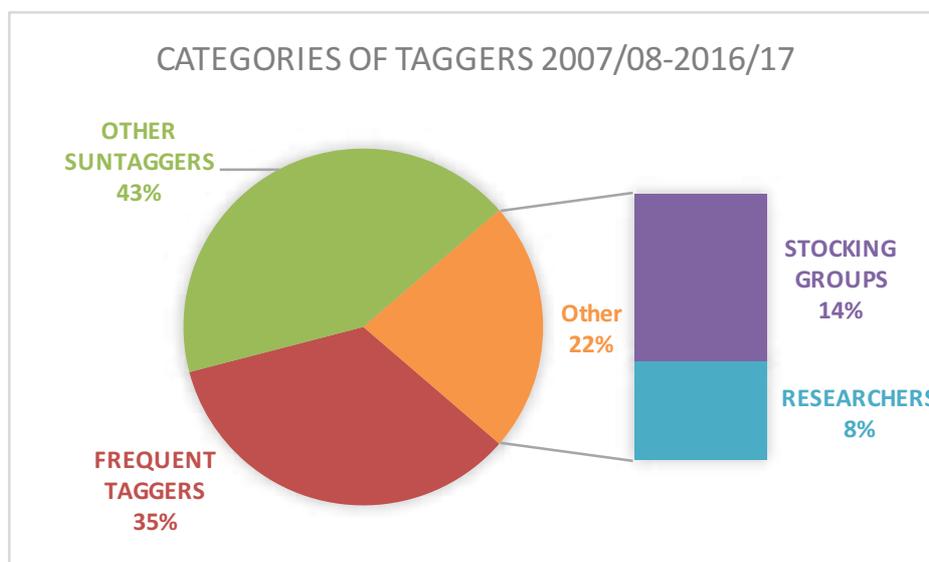


Figure 42: Categories of tagger participation in Suntag 2007/08-2016/17

Suntag Key Species Tagged and Recapture Rates

Barramundi remains the most tagged species and was the first species where over 200,000 fish were tagged. The total number of Barramundi tagged is now 257,000 with 19,000 recaptures of individual fish and 22,400 total including multiple recaptures. Numbers of Barramundi tagged were boosted from 2004 when fish stocking groups released large numbers of tagged Barramundi into impoundments and waterways. The overall recapture rate for Barramundi recaptured once is 7.4% however is as high as 19.0% in the Fitzroy River estuary and 19.1% in 12 Mile Creek in Central Queensland.

Australian Bass is the second most tagged species with 77,000 tagged and 5,800 recaptured once and a recapture rate of 7.5%. *Figure 43* shows the number of the top 10 species 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 6.8% include Dusky Flathead (8.2%), Goldspotted Rockcod (9.9%), Golden Perch (7.8%), Mud Crab (14.5%), Red Emperor (12.1%) and Blackspotted Rockcod (11.9%).

Species with recapture rates below 5% include Yellowfin Bream (3.8%), Barred Javelin (2.6%), Pikey Bream (4.9%), Speckled Javelin (2.3%), Giant Trevally (3.6%) and School Mackerel at (1.9%).

Saddletail Snapper has the highest recapture rate at 13.3% of any of the fish species tagged. This result is interesting as the survival rate for released Saddletail Snapper from experimental work is 50% and one of the lowest survival rates for any species assessed. The difference most likely results from fish being tagged in shallow water (less than 20m) where barotrauma is less of an issue.

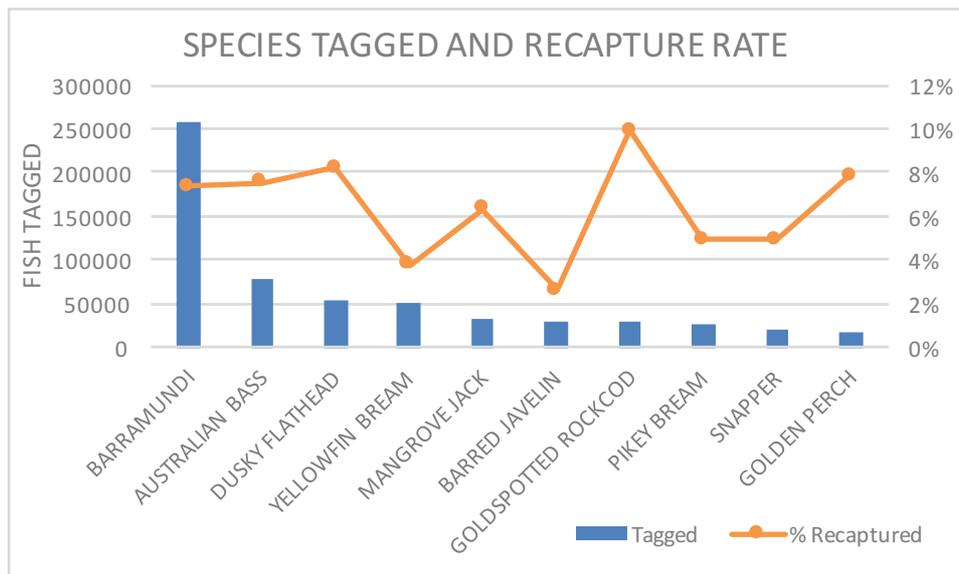


Figure 43: Total numbers of top 10 species tagged and their recapture rate

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 recapture rate in Fitzroy River is 19.0% from 34,500 fish tagged and for Weipa is 1.6% from 37,200 fish tagged.

The recapture rate was simply calculated as the ratio of the total number of all fish recaptured over time compared with the total number tagged over that same time. Some data that were not typical of fishing effort were excluded.² The overall long-term recapture rate for all fish, excluding crabs, at the end of 2016-17 was 7.9%. The recapture rate for 2010-15 was 6.5%. The recapture rate for 2015/20 has only 2 year of data and the rate was 6.6%.

Figure 44 shows the overall and 5 year recapture rates from 1985-90 to 2015-20 (part only) for all fish. This suggests that fishing effort peaked from 1990-95, fell significantly from 1995-2000 and has remained steady at around 6.5% since then with an increase from 2005-10.

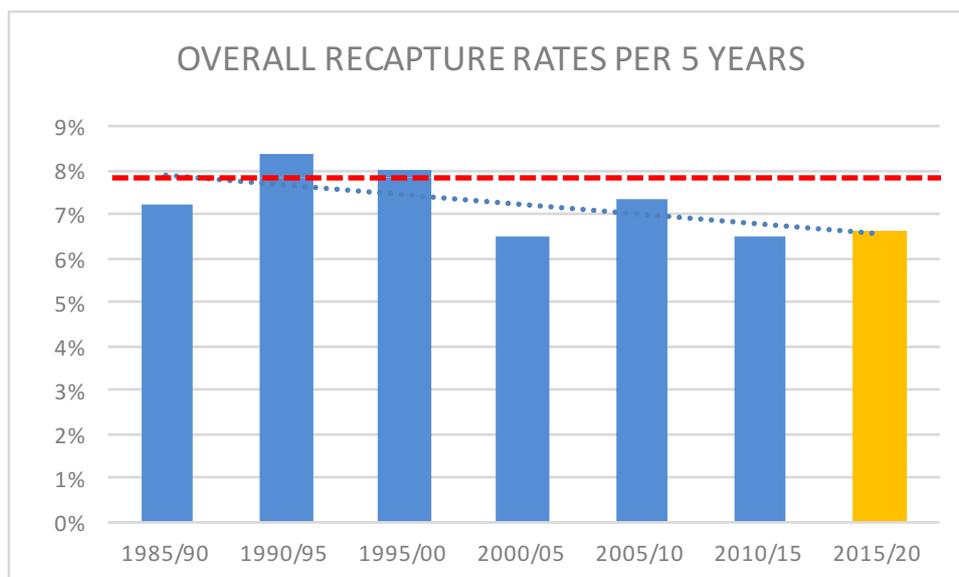


Figure 44: Recapture rate from 1985-2017 per each 5 year period

Figure 45 shows the number of participants and participation rates in recreational fishing as a percentage of the Queensland population from 1996-2014. This shows a drop in the percentage of the population participating in fishing from the mid 1990s to 2014. The trend in participation is also reflected in a reduction of fishing effort over the same time.

² Data from fish tagged in no fishing zones (green zones) in Keppel Bay in 2007-08 and 2011-12 and Mud Crab were not reflective of normal fishing effort and were excluded

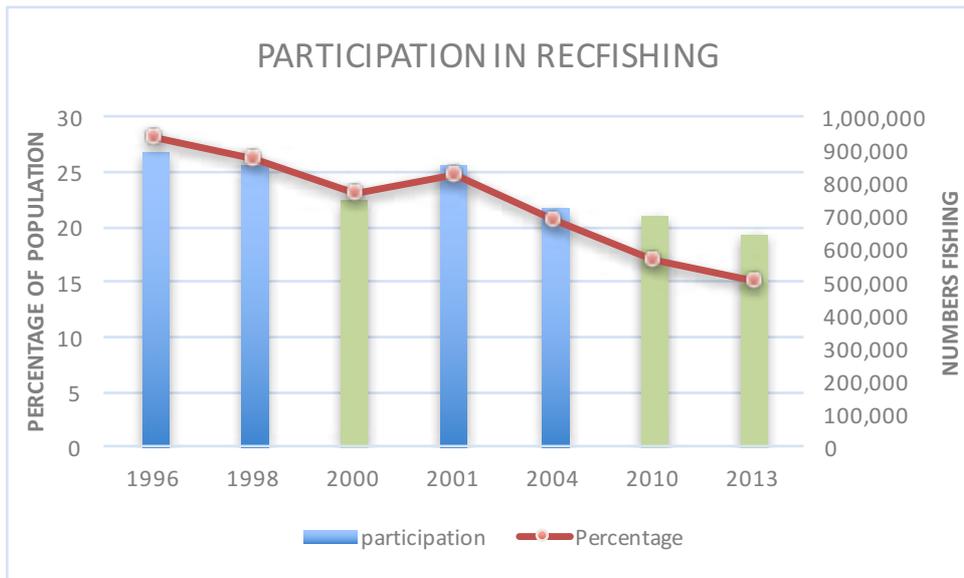


Figure 45: Participation rates in recreational fishing in Queensland from 1996-2014 - RFish surveys 1996-2004 and Statewide surveys 2000, 2010 and 2013-14

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 the total number of recaptures each year for Suntag taggers and other recfishers (excludes Suntag taggers), however the analysis does not take into account whether the fish were of legal size or not.

Figure 46 shows the release rates for Suntag taggers and recfishers over the last 30 years. There is a clear trend among recreational fishers towards releasing more fish with the release rate for the past 13 years since 2003-04 over 60%. Since 2001-02 the recapture rate for other than Suntag taggers has been over 30% and since 2013-14 has been over 40%. Suntag taggers have had a consistently high release rate of tagged fish of over 90% almost every year since 1991-92.

Figure 47 shows the release rate of recaptured legal sized Barramundi, Dusky Flathead, Australian Bass and Mangrove Jack by recfishers (excluding Suntag taggers) over the past 30 years. These were fish that could have been legally kept. For Barramundi up to 1989 the minimum legal size was 500mm, from 1989-1999 it was 550mm and then rose to 580mm. For Dusky Flathead the legal size was 300mm from 1985-2002, was 400-700mm from 2002-2009 and 400-750mm from 2009-2015. For Bass the legal length was 300mm and for Mangrove Jack was 350mm.

There is a clear trend over the 30 years with an ever-growing percentage of legal size fish being released for all 4 species. The trend for the saltwater species has followed a similar pathway over that time with the rate for each of the species exceeding 40% for the first time this year. Barramundi are leading the release rate being over 40% for the past 3 years and almost 60% this year. The release rate of legal size Bass has been considerable and consistently higher than the saltwater species and was over 80% this year.

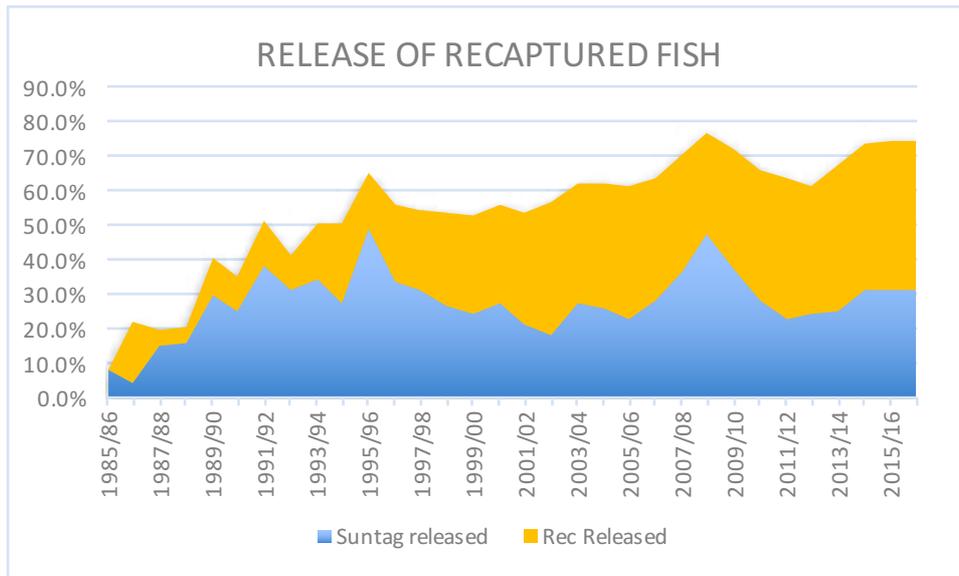


Figure 46: Percentage of recaptured tagged fish released by recreational fishers and Suntag taggers each year compared to total recaptures for both group

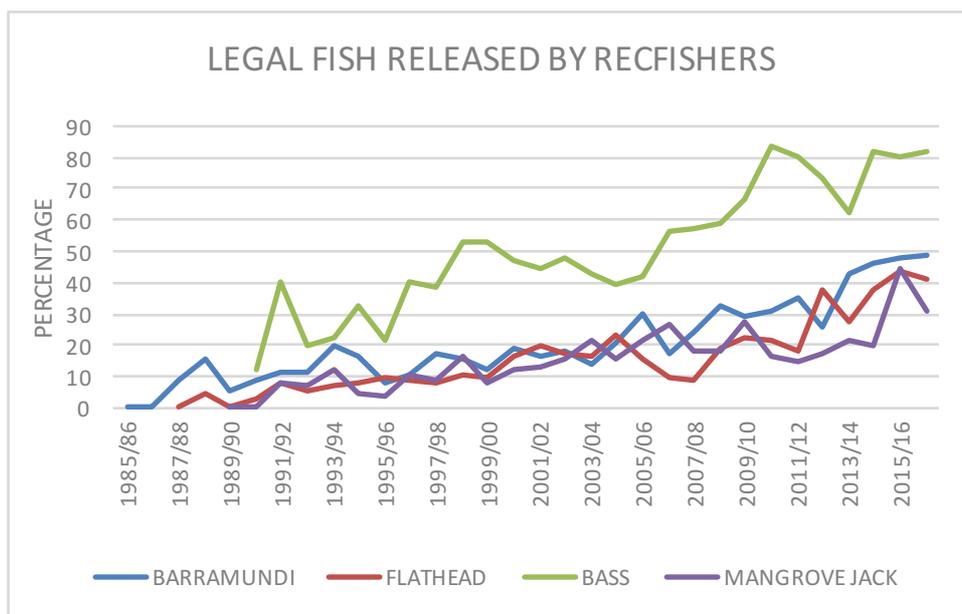


Figure 47: Trend in recaptures released by recfishers for legal Barramundi, Flathead, Mangrove Jack and Bass

Suntag Lure Type

From 2000 taggers have been able to record the lure type that they have used however there were insufficient records until 2002. Since then there were 47,000 records where the lure type was sufficiently recorded to categorise lures as either hardbody or softbody. Hardbody lures includes minnow types, jigs, spoons, slugs, blades and flies while softbody lures includes the whole range of soft plastic unscented and scented and soft vibes.

Figure 48 shows the percentage of lures types recorded each year. In 2002 hardbody lures were used to catch 96% of fish tagged on lures. In 2003 there was a dramatic increase in the use of softbody lures that coincides with the introduction of a greater range of soft plastic

lures including the Squidgy range. For the next decade, through to 2013, hardbody lures still were favoured with 50-60% of fish caught. However, from 2014 onwards softbody lures took over and have dominated the lure type at around 70% since then.

The change likely coincided with improved sounder technology and the use of soft vibes in deeper water. Overall softbody lures are suitable for a larger range of species, habitats and fishing styles and are generally cheaper than hardbody lures and that is reflected in the change.

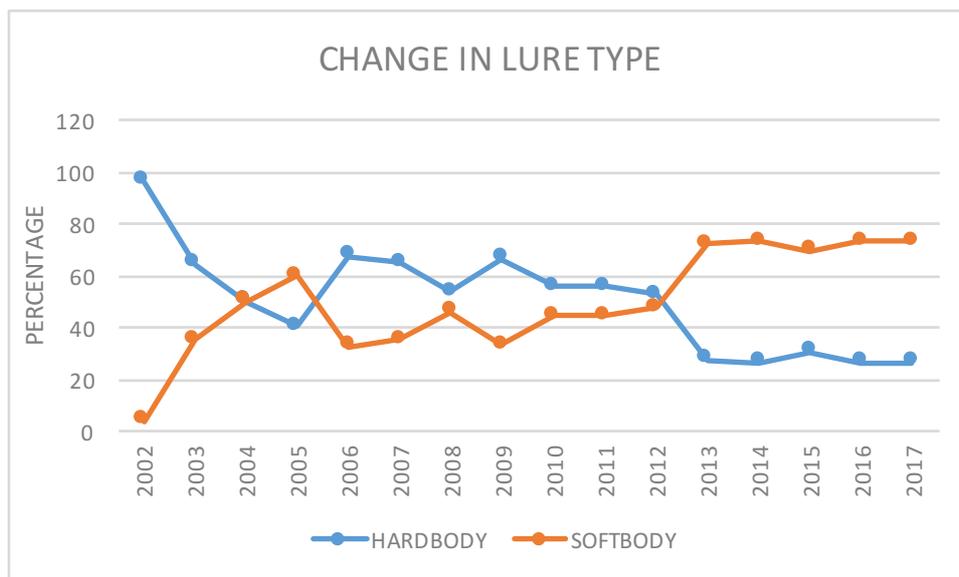


Figure 48: Trend in use of hardbody and softbody lures from 2002-2017

Westag in 2016-17



Westag Highlights for 2016-17³

Westag tagging and fishing trip highlights for the year were:

- ✦ A total of over 1,040 taggers have now participated in Westag and 870 fishers have reported the recapture of a tagged fish
- ✦ Total tagged fish in the database is now over 36,600 and over 1,320 recaptures
- ✦ Key species tagged with recapture rates were Samsonfish 10,060 (2.5%), Barramundi 4,080 (3.4%), Mangrove Jack 3,950 (3.1%), West Australian Dhufish 2,000 (9.5%) and Sailfish 1,880 (0.1%).

Westag Background

Westag commenced in 1998 and is managed by ANSA WA. Westag adopted the Infotish database in 2011 and Infotish has provided technical support since then. In 2014 Infotish ran a Citizen Science workshop in conjunction with Westag in Perth looking to provide a more coordinated approach to citizen science and tagging. A report titled “Developing a Citizen

³ All figures based on Westag records in the database at 30 June 2017

Science Culture among Western Australian Recreational Fishers” is available outlining the outcomes from the workshop.

Fish in Westag Database

This year Westag data were incorporated into the Infofish database to overcome the need to manage and maintain separate databases. Current statistics for the Westag section of the database (added in 2016-17):

- ✦ 41,900 fish records (1,000)
- ✦ 41,600 tagged fish (860)
- ✦ 1,600 recaptures (45)

Westag Participation

A total of 1,120 taggers have participated in Westag having tagged fish since 1988-89. In 2016-17 there were 83 participants that tagged at least one fish. There have also been 950 fishers that have reported a recapture of a tagged fish with 38 reporting a recapture in 2016-17.

Participation in Westag over the past 10 years is shown in *figure 49*. Over the 10 years numbers participating in Westag peaked in 2010-11 at 164. From 2012-13 when there were 42 taggers there has been a steady increase through to 2016-17.

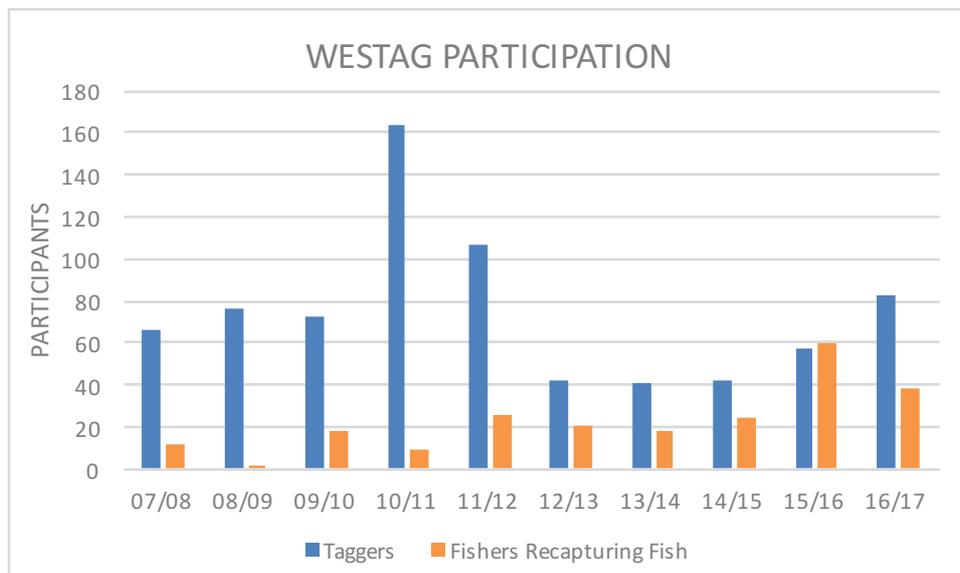


Figure 49: Summary of participation in Westag from 2007-08 to 2016-17

Westag Fish Tagged and Recaptured

The Westag section of the database now has over 41,600 tagged fish records. There have been over 1,570 recaptures over the same period. The overall recapture rate is 3.8%. *Figure 50* shows the number of fish tagged and recaptured each year over the past 10 years from 2007-08 to 2016-17. In 2016-17 there were 854 fish tagged and 44 recaptures recorded.

This year tag data from the West Australian Fishing Foundation (WAFF) release of 2,100 tagged Mulloway in 2013/14 were added to the database.

The number of fish tagged in the last few years is greater than shown as taggers have not submitted all tag records. Efforts are underway to collect old tagging records as there are a number of recaptures where there is no corresponding tag record.

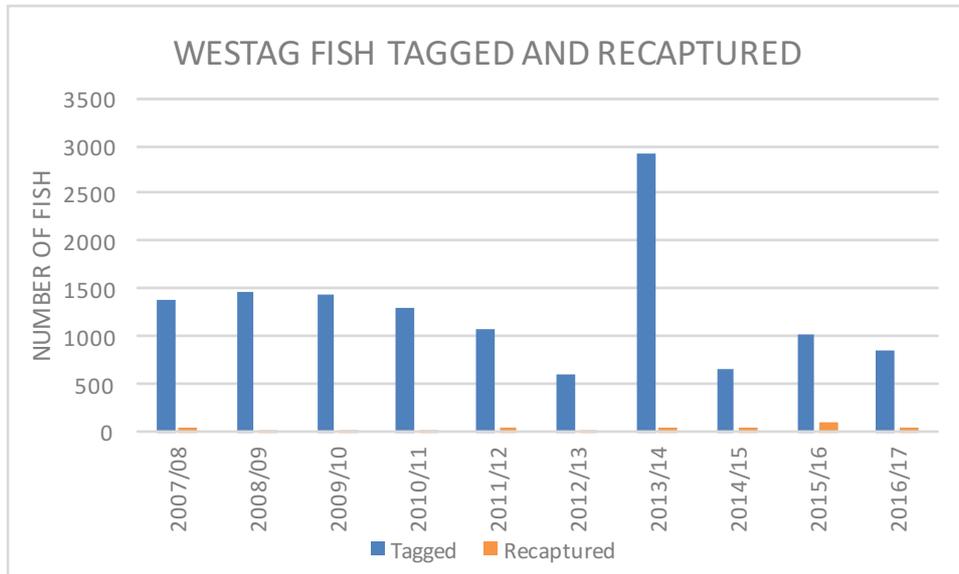


Figure 50: Westag fish tagged and recaptured each year from 2007-08 to 2015-16

Westag Key Species Tagged and Recapture Rates

There were 10 species where over 1,000 fish were tagged as shown in figure 51. Key species and their recapture rates are Samsonfish 10,073 (2.6%), Mangrove Jack 5,219 (2.6%), Barramundi 5,095 (3.3%), Mulloway 3,412 (6.7%), West Australian Dhufish 2,340 (10.3%).

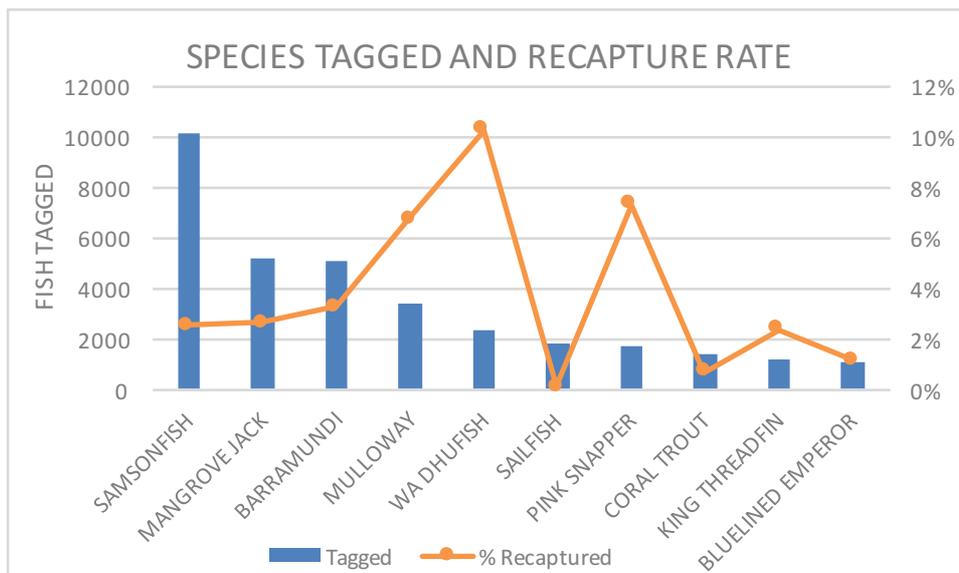


Figure 51: Westag key species tagged and recapture rates

While many fish are recaptures several times the recapture rates here are based only on a single recapture of each fish. Species with a recapture rate of over 10% were Mulloway and West Australian Dhufish. Other species where the recapture rate was above the overall average of 3.8% were Pink Snapper (7.3%) and Black Bream (4.8%).

Species with a low recapture rate of less than 1% were Black Marlin (0%), Sailfish (0.1%), Spangled Emperor (0.4%), Coral Trout (0.8%) and Spanish Mackerel (0.5%).

West Australian Dhufish

From 1996-98 to 2016-17 there were 2,350 West Australian Dhufish tagged. *Figure 52* shows the numbers tagged each year, average length and the size range of fish tagged over the past 10 years. The largest Dhufish tagged was a fish of 1,260mm in 2002/03.

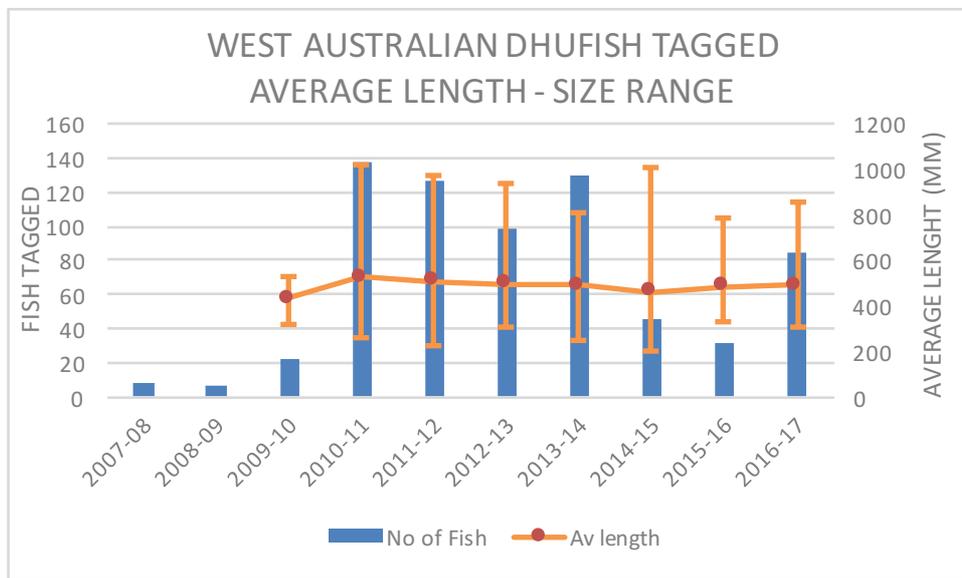


Figure 52: West Australian Dhufish tagged, average length and size range

Depth of capture was recorded for 2,161 Dhufish and *figure 53* shows the recapture rate for fish tagged at different depths. The recapture rate for fish tagged in over 100m depth needs to be treated with caution due to the low number (14) of fish tagged. The highest recapture rate was for fish caught from 0-19m at 10.4% and from 20-49m at 10.1%. There appear to be little difference in the recapture rate for fish tagged in depths up to 50m.

Release method was recorded for 1,117 Dhufish and *figure 54* shows the recapture rate for fish released using different release methods. The highest recapture rate of 11.4% was for fish released using shotline (release weight used to return fish to the bottom) while venting has the lowest recapture rate of 7.4%.

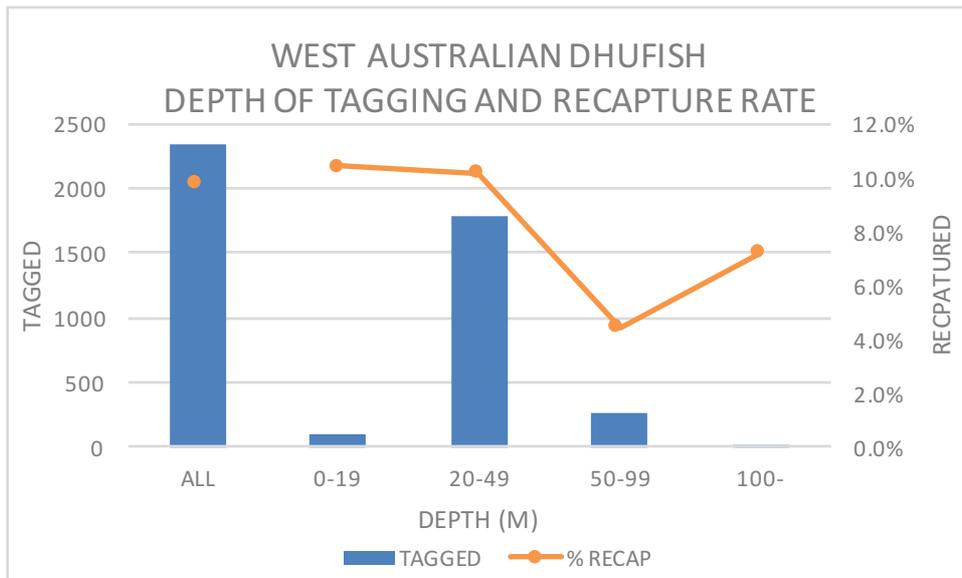


Figure 53: West Australian Dhufish tagged at different depths and recapture rates

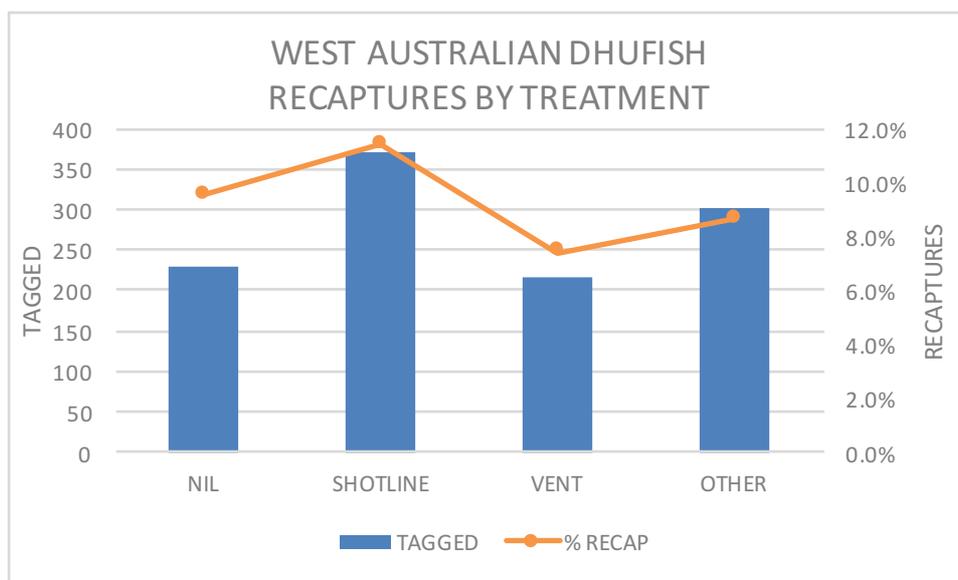


Figure 54: West Australian Dhufish tagged and recapture rate from different release methods

Mulloway

From 1996-98 to 2015-16 there were 3,412 Mulloway tagged. In 2013-14 the West Australian Fishing Foundation (WAFF) released 2,100 tagged Mulloway ranging from 290-320mm in the Greater Perth area.

This year WAFF handed over the tag and recapture data to Westtag to continue to manage the data into the future. Of the tagged Mulloway released there were 34 recaptures through to Jan 2015. *Figure 55* shows the distance that the fish were recaptured from their release point.

Daly River Crystal Bowl

In 2016 Infotish worked with NT Fisheries and Amateur Fisherman's Association of the Northern Territory (AFANT) on the development of a Crystal Bowl assessment of Barramundi in the Daly River. This involved using tagging and catch data from the 2 major competitions on the Daly River, the Barra Classic and Barra Nationals, along with data from NT Fisheries electrofishing surveys. This allowed trends in catch rates and fish sizes to be assessed. *Figure 57* shows part of the assessment undertaken for Barramundi in the Daly River.

MEASURE	ACTUAL		GRAPH
DALY RIVER	BARRAMUNDI		
Classic catch and effort number of fish fisher days	HIGHEST CATCH 2011 1711	LOWEST 2013 214	
Nationals catch and effort number of fish fisher days	Data only available for 2015-2016		
Classic catch rates fish 400mm+ legal fish 550mm+ fish/fisher/day	HIGHEST ALL 2001 2.72	LOWEST 2013 0.29	
Nationals catch rates fish 400mm+ legal fish 550mm+ fish/fisher/day	Data only available for 2015-2016		
Classic average length mm and size range	HIGHEST AVERAGE LENGTH 2006 628	LOWEST 2012 541	
Classic percentage sizes undersize <550mm legal-trophy 550-999mm trophy 1000mm+	HIGHEST LEGAL-TROPHY 2006 87.4	LOWEST 2005 25.3	
Nationals average length mm and size range	Data only available for 2015-2016		

Figure 57: Part of the Crystal Bowl assessment of Barramundi in the Daly River

Where to in 2017-18?

The release of the Qld Government's Sustainable Fisheries Strategy in May 2017 included an increased emphasis on monitoring. Following a meeting with Qld Fisheries and GBRMPA in June 2017 Infofish is developing a proposal titled "Fisheries Citizen Science Monitoring in Queensland 2017-2020".

At this stage the proposal is under development, but the aim is to use a citizen science approach to provide information in real time to influence fisher's decision making and inform management agencies on key elements of Queensland's recreational fisheries.

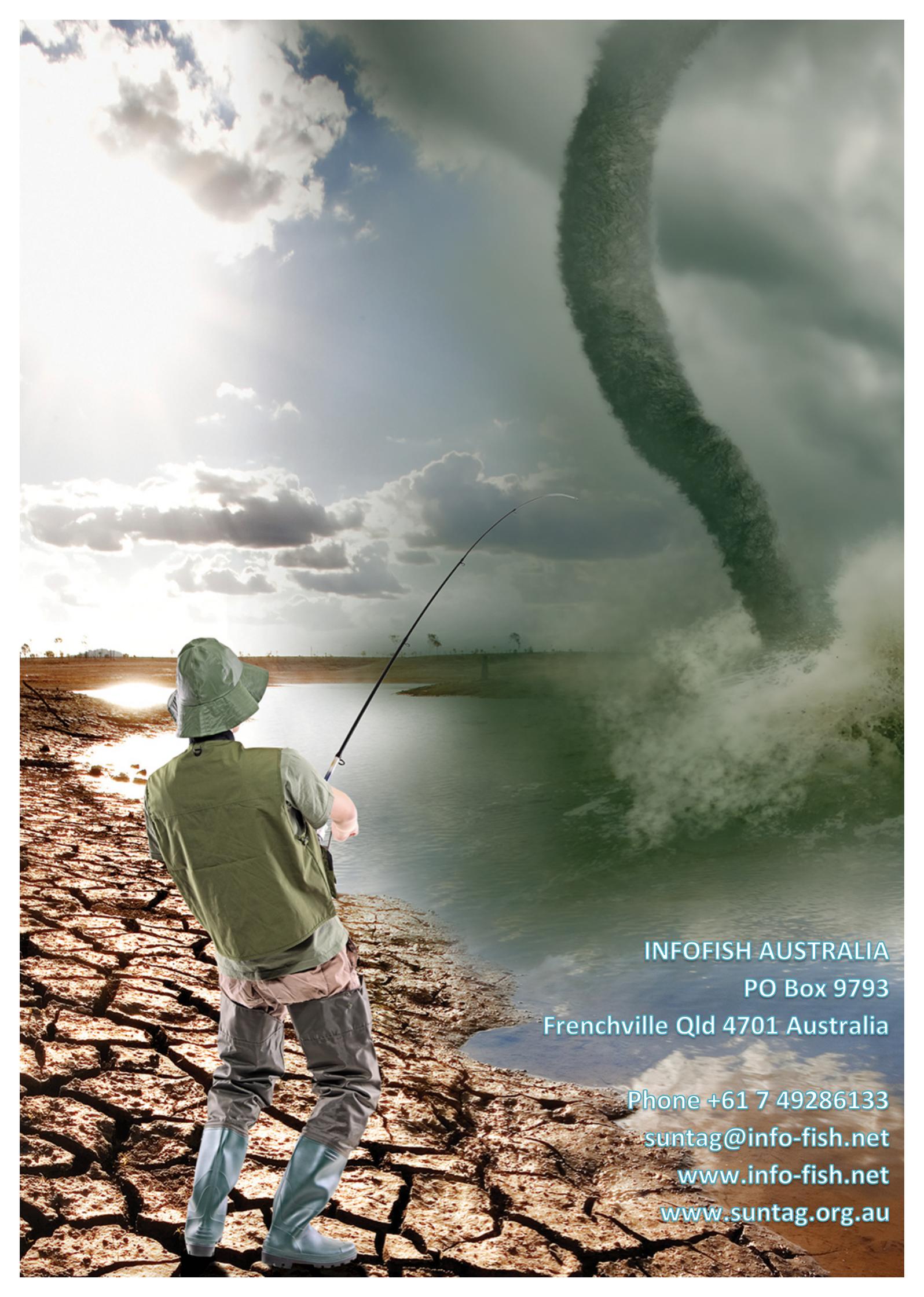
This will require many elements of recreational fishing data collection to be brought together, along with the technology developed by Infofish to provide a range of information in real time.

The challenge will be to gain the support of recreational fishing groups and to attract sufficient funding to implement the range of data collecting proposed. Infofish has undertaken a scientific analysis of what data are required and the focus will be in recruiting T20 fishers that target the species and locations to be monitored. As T20 fisher's catch rates are more sensitive to changes in fish stocks this will show up sooner in their catch rates.

The focus of Trackmyfish will be around collecting tagging and competition data. With ABT tournaments and Rocky Barra Bounty adopting Trackmyfish this will expand its use in competitions. Other competitions are also expected to take up the app.

Infofish is also looking to expand its business internationally. With a business partnership with Hallprint and an initial client in Belize in Central America this work has commenced. The pace of expansion will depend on what happens in Australia and the take up of the technology overseas.

What is certain is that there will be continual change and that the pace of change will accelerate.



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