



Title: **Cardwell Inshore Monitoring Program** (Cardwell Sportfishing Club)

Q1: What do you intend to monitor?

Within the listed target species below, monitoring will primarily include, but not be limited to;

- aggregation patterns
- movement patterns
- population patterns
- growth patterns
- post-capture survival rates

Target species

Barramundi, <i>Lates calcarifer</i>	http://fishesofaustralia.net.au/home/species/4643
Barred Javelin, <i>Pomadasys kaakan</i>	http://fishesofaustralia.net.au/home/species/465
Silver Javelin, <i>Pomadasys argenteus</i>	http://fishesofaustralia.net.au/home/species/463
Golden Snapper, <i>Lutjanus johnii</i>	http://fishesofaustralia.net.au/home/species/558
King Threadfin, <i>Polydactylus macrochir</i> ,	http://fishesofaustralia.net.au/home/species/1867
Mangrove Jack, <i>Lutjanus argentimaculatus</i>	http://fishesofaustralia.net.au/home/species/548
Goldspotted Rockcod, <i>Epinephelus coioides</i>	http://fishesofaustralia.net.au/home/species/4512
Blackspotted Rockcod, <i>Epinephelus malabaricus</i>	http://fishesofaustralia.net.au/home/species/4675
Crimson Snapper, <i>Lutjanus erythropterus</i>	http://fishesofaustralia.net.au/home/species/1790

Q2: Where will you monitor?

Cardwell Region, North Queensland

Grid reference:
I19

Boundaries

Northern: Tully River

Southern: Within 500m of Sugar Pier (Lucinda)

Q3: Why is this species and area a priority for monitoring?

The Cardwell region has for many decades been a popular destination for local and visiting recreational fishers. It also boasts the world heritage listed Hinchinbrook Island and the Hinchinbrook channel which runs for approximately 50km South to Lucinda. The regions ecological and recreational values were recognised in 1999 when 12,268ha within the Hinchinbrook channel were declared a fish habitat area.

Complementing this has been the recent launch of a new tourism initiative called the "Hinchinbrook Way". A major component of this initiative is to actively promote the Hinchinbrook region as a sportfishing mecca for recreational fishers both on a national and global scale. Included in this initiative is a series of televised international fishing events aimed at attracting visitors from around the world.

Recreational Fishery Monitoring Plan



While strategic initiatives and events such as these will bring economic benefits to the local economy, as well as a platform for the promotion of sustainable fishing practises, it also increases the pressure on the local fishery.

To monitor potential impacts from this increased pressure, the Cardwell Sportfishing Club, proposes to monitor 9 key recreationally targeted species. These species, and the reasons for their inclusion onto the target species list, are listed below,

Barramundi

- An iconic recreational sportfish and popular table fish for the Hinchinbrook region
- Targeted by several recreational fishing events annually (Cardwell Barra Bonanza, Hinchinbrook Catch & Release etc)
- Protected from commercial netting in the majority of the Hinchinbrook channel but targeted by local and visiting commercial netters in surrounding creeks and systems

Barred and Silver Javelin

- One of Hinchinbrook's most popular "bread & butter" table species for local and visiting recreational fishers
- Targeted by commercial netters on the northern and southern boundaries of the Hinchinbrook region
- Javelin have a history of poor release survivability and limited recapture data.

Golden Snapper

- A popular recreational fish much sort after for its fighting and eating quality by local and visiting recreational fishers
- Susceptible as bycatch for commercial netters targeting other coastal species
- A slow growth and a legal minimum size limit that is below the average breeding size makes it vulnerable to over-fishing

King Threadfin

- King Salmon are targeted by professional fishers in the rivers just north of Cardwell. Reports of catches in excess of 10 Ton are greatly reducing these numbers, this has been shown by the drop in numbers caught by recreational fishers.
- While most recreational fishers practise catch & release the fighting characteristics of this species often result in high levels of stress and a less than favourable release condition

Mangrove Jack

- A highly sort after recreational species for both its fighting and table qualities
- A slow growth rate and complex breeding cycle make it potentially vulnerable to increased recreational fishing pressure

Goldspotted and Blackspotted Rockcod

- Although both species reportedly possess a relatively high fecundity and growth rate, rockcod are known to be vulnerable to recreational fishing due to their feeding habits and propensity to be caught as bycatch
- Juveniles and smaller fish are vulnerable to becoming bycatch in recreational and commercial crab pots

Recreational Fishery Monitoring Plan



Crimson Snapper

- Juveniles snapper are often caught within the channel area by recreational fishers. As these are released, monitoring survival, growth and migration of this much sort after table fish would be beneficial to all fisherman.

To the North of Hinchinbrook Island is Rockingham Bay. Many of the creeks in this area of Rockingham Bay are very popular with locals and recreational fishers. These waters include;

- Wreck Creek
- Dallachy Creek
- Murray Creek
- Tully River
- Hull River

Unlike the Hinchinbrook channel, the waters of Rockingham Bay are subject to commercial fishing, in particular netting of creeks and inshore beaches.

Rockingham Bay has been included in the Cardwell Region Monitoring Program in order to look at potential impacts of commercial fishing. It is envisaged that by monitoring these waters and comparing target species populations in the Rockingham Bay area to that of the Hinchinbrook channel (an area free from commercial fishing) the monitoring plan will be able to shed light on the effects of commercial fishing in the Rockingham Bay area.

If monitoring between these two areas does in fact show significant differences between recreational only and commercially fished areas, within the same region, it is hoped that this data could in future be used to justify the establishment of Net Free Zones (NFZ) within Rockingham Bay.

Q4: Who will use your data?

1. Cardwell Sportfishing Club
2. Hinchinbrook Sportfishing Club
3. ANSA Qld
4. Wider community
5. Approved Third Party Researchers

Q5: How will the data be used?

Data will be quality checked, collated and archived to be available for Cardwell SFC, ANSA Qld and approved third parties upon request.

The Cardwell SFC, and ANSA Qld, will use the monitoring program and the data collected to,

- monitor populations, movement patterns and growth rates of the target species to gain an understanding of the impacts of potential increased recreational fishing effort in the Cardwell region
- monitor survival rates of each of the listed target species through tagging & recapture
- promote sustainable fishing on a local, regional and state level

Recreational Fishery Monitoring Plan



- assess the level of “spill-over” of target species into surrounding commercially netted areas
- assess the impact of commercial fishing (netting) on popular recreational species

Q6: What data quality do you require?

The primary objective of this project is to allow anglers opportunity to collect fishery data as a means of citizen science participation. The idea is to value add to the fishing experience and in doing so, create greater awareness of the study species (population, growth, movement and post-capture survival patterns)

Although the primary focus of the program is citizen science based, data collection methods will be as robust as possible to ensure data quality is as high as possible to allow for as many potential end uses as possible. Data Quality will be set at a level where the complexity of collection and data entry methods does not greatly inhibit participation.

Cardwell SFC members who choose to partake in tagging of fish from the target species list will be required to be approved taggers under the ANSA Qld guidelines.

The quality of data is likely to be of indicative quality (better than demonstrative but not analytical)

Q7: What is the proposed period of monitoring? When and how often will you monitor?

Monitoring is scheduled to commence in May 2018. This will coincide with the planned fishing event to be held in the Hinchinbrook region under the new Hinchinbrook Way initiative, as well as the NQ's and ANSA annual species challenge. It will also allow for tagging of barramundi before the seasonal closure starts on 1st November 2018.

No end date has been set.

Regular monitoring by Cardwell SFC club members will take place during both official and unofficial club outings on an “opportunistic” basis.

This monitoring plan will be reviewed by the Cardwell SFC, typically on an annual basis, to ensure resources are being allocated to achieve the best possible outcome/s.

Q8: What methods will you use?

- All target and non-target species captured will be handled so as to cause as little stress as possible.
- Target species will be measured, tagged and released as quickly as possible so as to maximise the chances of survival.
- Fish capture information as outlined in field of form: <http://www.ansaqld.com.au/awards/entry-form/> will be collected for target species along with any other data that meets the objectives.
- Members will fish according to the ANSA QLD code of Ethics (<http://www.ansaqld.com.au/code-of-ethics/>) and the National Code of Practice (http://www.ansaqld.com.au/wp-content/uploads/2014/06/recfish_australia_ncop_brochure.pdf) adopted by ANSA QLD.
- Fish destined for release will be released according to the ANSA Code of Practice for Releasing Fish (<http://www.ansaqld.com.au/code-of-practice-for-releasing-fish/>)
- Tagging will be conducted according to the AUSTAG Manual (<http://www.ansaqld.com.au/wp-content/uploads/2016/07/Austag-Manual-Complete-with-Work-Instructions.pdf>) noting that the manual will be updated during 2016-17. Tagging data is added directly by members who tag a part of the fish capture form. Any field sheets used reflect fields in this web-form.

Recreational Fishery Monitoring Plan



- Location of fish will be recorded using Queensland Government Logbook Maps (<https://www.business.qld.gov.au/industry/fisheries/commercial-fishing/monitoring-and-reporting/reporting-commercial-fishers/queensland-logbook-maps>)
- Fishes of Australia (<http://fishesofaustralia.net.au/>) is used to identify fish species

Q9: Who will be involved and how?

Monitoring will be conducted primarily by members of the Cardwell SFC. Reporting of recaptures will be open to the general public.

ANSA QLD will provide fish capture database facility, tags and support to the Cardwell SFC.

Third party researchers may be involved providing their involvement is in line with assisting to achieve the objectives of this monitoring program.

Q10: How will the data be managed and reported?

Data will be added directly by approved Cardwell SFC members into the fish capture form; or via a multi-capture upload file. When submitted this is logged in the ANSA QLD MySQL database.

The results will be reported online using a series of codes that query the database and then visualise this data. Data will also be provided to approved third party researchers to report as required.

Records are maintained on ANSA QLD server using MySQL database (regularly backed up).

Cardwell SFC will store manual field capture record forms unless future reviews warranty it unnecessary.

Version

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Background

Why do we need a plan like this?

ANSA Qld and our members have limited resources (money and time) to contribute to monitoring, so we need to make sure we are doing it for good reasons.

The plan is simply to help you think about why and where you want to direct your efforts. We should make sure that we are contributing to highest priority issues, not just tagging as many fish as we can. For this reason, the ANSA Qld executive committee will seek input from Fisheries Queensland and other research institutions into highest priority species and locations to help refine monitoring effort.

It also demonstrates to others that we are professional in our approach to monitoring.

How is the revised ANSA Qld tagging program different to what we have previously done under Sntag?

Tagging will be conducted according to the AUSTAG Manual (<http://www.ansaqld.com.au/wp-content/uploads/2016/07/Austag-Manual-Complete-with-Work-Instructions.pdf>) noting that the manual will be updated during 2016-17. Specific revisions include:

- ANSA QLD Tagging is now the name of our state program for Queensland
- Tagging data is added directly by members who tag as part of the fish capture form. Any field sheets used reflect fields in this web-form.
- Tags use the web address www.ansaqld.org.au instead of a phone number for submission of recaptured fish information.
- Tag and recapture information is generated online at www.ansaqld.org.au and replaces letters and certificates. Recapture certificates will be emailed to anglers in the future when an automated facility for this function is developed
- Records are maintained on ANSA QLD server using MySQL database. Database is regularly backed up.
- Recreational Fishery Monitoring Plans are required for all ANSA QLD Research and Tagging projects. These documents provide detail on target species and other project related matters
- Tag purchase is currently through Floytag. ANSA QLD reserves the right to select any supplier based on access, price and customer service.
- Tag Register and Audit will be maintained on ANSA QLD server using MySQL database. Database is regularly backed up.
- Location of fish will be recorded using Queensland Government Logbook Maps (<https://www.business.qld.gov.au/industry/fisheries/commercial-fishing/monitoring-and-reporting/reporting-commercial-fishers/queensland-logbook-maps>)
- Fishes of Australia (<http://fishesofaustralia.net.au/>) is used to identify fish species