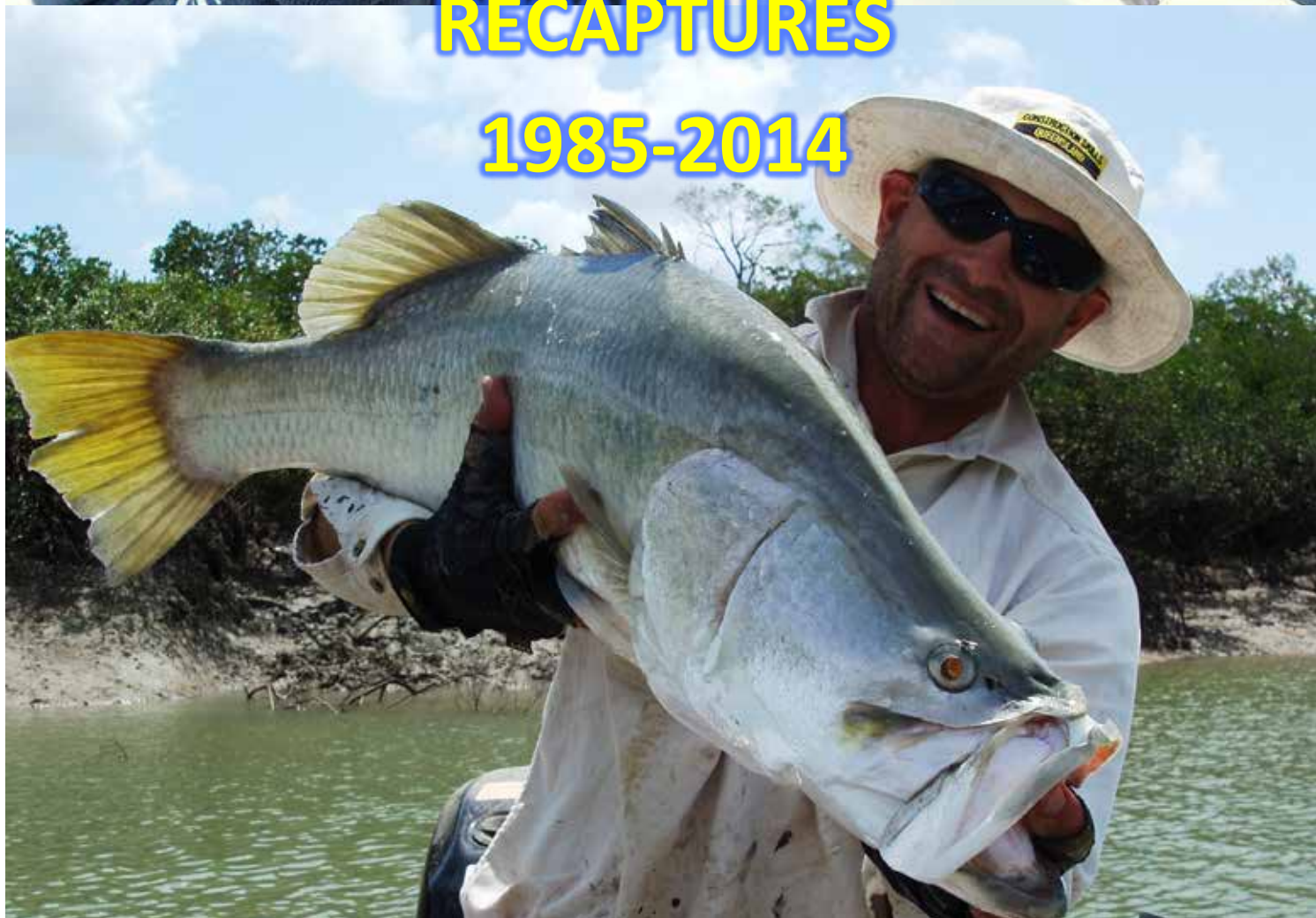




**THE BIG PICTURE  
TAGGING AND  
RECAPTURES**

**1985-2014**



## THE BIG PICTURE TAGGING AND RECAPTURES 1985-2014

### REPORT

This report has been prepared by Infofish Australia for the Australian National Sportfishing Association Qld Inc – Oct 2014

### SCOPE

This report provides a summary of tagging and recapture data for 22 species from 1985-2014:

- ✦ Fish tagged and recaptured
- ✦ Longest time from tagging to recapture
- ✦ Fish recapture same day as tagged
- ✦ Fish recaptured within 1 week
- ✦ Furthest distance moved
- ✦ Fish moved over 5km

### DATA SOURCE

Tagging and recapture records from 1985-2014 maintained in the Suntag database at <http://qld.info-fish.net>. Access to the database is limited to authorised users.

Google Earth maps showing tag details are available at [www.info-fish.net/suntag](http://www.info-fish.net/suntag).

### SPECIES

Tag and recapture data were examined for the following species:

- |                        |                      |
|------------------------|----------------------|
| ✦ Australian Bass      | ✦ Mangrove jack      |
| ✦ Barramundi           | ✦ Golden Snapper     |
| ✦ Yellowfin Bream      | ✦ Snapper            |
| ✦ Pikey Bream          | ✦ Red Emperor        |
| ✦ Dusky Flathead       | ✦ Saddletail Snapper |
| ✦ King Threadfin       | ✦ Crimson Snapper    |
| ✦ Blue Threadfin       | ✦ Grass Emperor      |
| ✦ Barred Javelin       | ✦ Southern Saratoga  |
| ✦ Speckled Javelin     | ✦ Golden perch       |
| ✦ Goldspotted Rockcod  | ✦ Giant Trevally     |
| ✦ Blackspotted Rockcod | ✦ Mulloway           |

## SOME OBSERVATIONS

Some of the big picture observations for the 22 species examined from 1985-2014:

- ✦ There were 623,958 fish tagged and 41,239 (6.6%) recaptured (recaptured once).
- ✦ Barramundi was the most tagged species with 241,254 fish and a recapture rate of 7.0%.
- ✦ The highest recapture rate was 13.2% for Saddletail Snapper and the lowest was 2.0% for Speckled Javelin.
- ✦ Golden Perch, Australian Bass, Barramundi and Southern Saratoga (all in freshwater) were recaptured over 12 years after being tagged.
- ✦ The longest time out was for a Golden Perch at 18.8 years, Australian Bass at 18.2 years, Barramundi at 17.4 years and Southern Saratoga at 12.1 years.
- ✦ For Blue Threadfin, a shorter-lived species, the longest time out was 2.4 years.
- ✦ There were 19 of the 22 species that were recaptured on the same day as tagged with 2.7% of Saddletail Snapper, 2.5% of Goldspotted Rockcod and 2.3% of Blue Threadfin recaptured the same day as tagged.
- ✦ From 1.0-18.0% of species were recaptured within a week with 18.0% of Barred Javelin and 13.9% of Saddletail Snapper recaptured within a week while only 1.0% of Australian Bass were recaptured within a week.
- ✦ Given the percentages of fish recaptured on the same day and within a week this suggests that tagging has minimal impact on the behaviour and feeding of these species.
- ✦ The most times an individual fish was recaptured was 13 for a Mangrove Jack followed by 11 times for a Barramundi and 10 times for a Golden Snapper.
- ✦ Individual fish of all species were recaptured at least twice.
- ✦ The furthest distance moved was a Barramundi tagged in the Hey River at Weipa and near Cairns on the east coast having moved 1,100km and is the only verified movement of a Barramundi from the Gulf of Carpentaria to the east coast.
- ✦ The next furthest distance moved was for a Speckled Javelin tagged in Pumicestone Passage and recaptured at North Shore near Sydney and is the only fish of this species recorded as having moved over 50km.
- ✦ The least distance moved was for a Southern Saratoga that move 62km in the Dawson River.
- ✦ The species recaptured most over 5km from where tagged was Blue Threadfin with 54.3% of recaptures indicating this was a very mobile species.
- ✦ The species next most caught over 5km from where tagged was Mulloway at 50% and then King Threadfin at 34.9%. - for Barramundi 22.2% were recaptured over 5km from where tagged.
- ✦ Saddletail Snapper at 3.4%, Crimson Snapper at 3.5% and Southern Saratoga at 4.4% were the least caught over 5km from where tagged.
- ✦ Saddletail and Crimson Snapper were mostly tagged as juveniles where they are found on inshore reef habitat. These fish (and Red Emperor) stay in the same habitat and then move to deeper offshore habitats as they mature.
- ✦ Southern Saratoga generally stay within a small home range and have been recaptured in the same area even after severe flooding.

## FISH TAGGED AND RECAPTURED

From 1985-2014 (Sep) there were 623,958 fish of the 22 species tagged with 41,239 (6.6%) recaptures (recaptured once). *Figure 1* shows the number of fish tagged and the percentage recaptured. The highest recapture rate was 13.2% for Saddletail Snapper and the lowest was 2.0% for Speckled Javelin. Barramundi were the most tagged with 241,254 and a recapture rate of 7.0%.

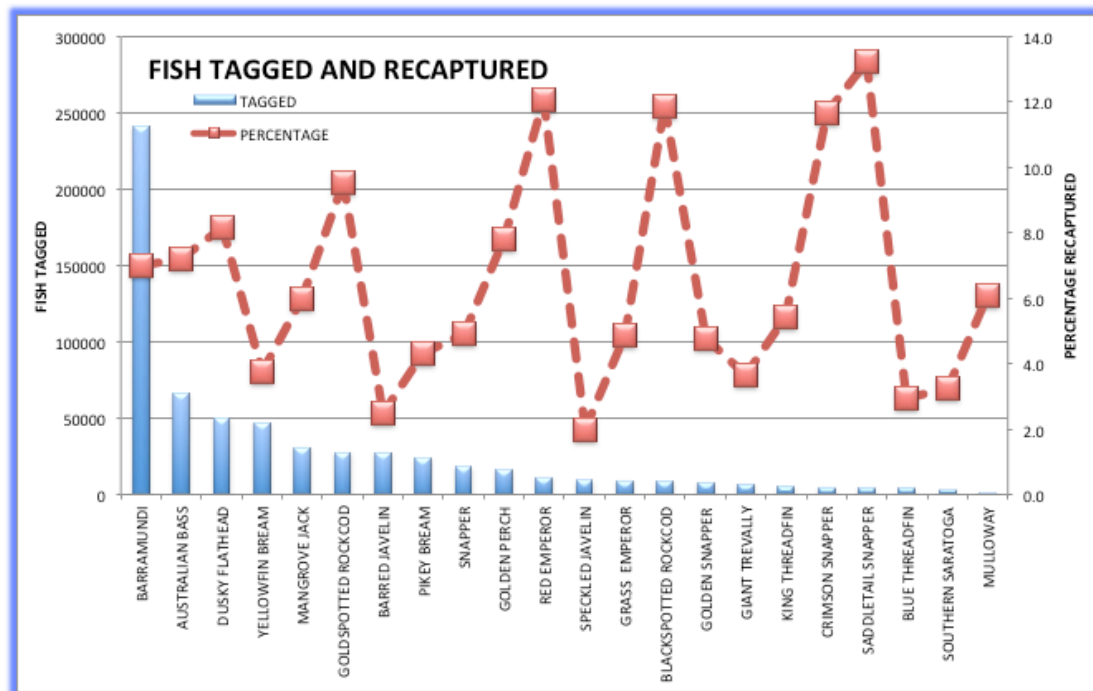


Figure 1: Number of fish tagged and percentage recaptured 1985-2014

## TIME AT LIBERTY (DAYS OUT)

There were 4 species where the longest time between tagging and recapture was over 12 years and all were fish in freshwater. These were Golden Perch, Australian Bass, Barramundi and Southern Saratoga. *Figure 2* shows the longest time out from tagging to recapture for each species from 1985-2014.

The longest time between tagging and recapture was 18.8 years (6,865 days) for a Golden Perch tagged and recaptured in Lake Somerset. It was tagged in Feb 1995 and recaptured in Nov 2013. The next longest time out was for an Australian Bass that was out for 18.2 years (6,656 days) in the Noosa River. It was tagged in Oct 1995 and recaptured in Jan 2014. A Barramundi was out for 17.4 years (6,368 days) being a fish that was stocked in Lake Tinaroo in Mar 1987 and recaptured in Aug 2004. A Southern Saratoga was out for 12.1 years (4,424 days). It was tagged and recaptured in the Connors River.

The longest time out for an estuary fish was for a Barramundi that was out for 16.6 years (6,054 days). It was tagged in Mar 1994 and recaptured in Oct 2010 and was tagged and recaptured in the Mary River.

For a Blue Threadfin the longest time out was 2.4 years (862 days). It was tagged in Feb 2003 and recaptured in Jun 2005. It was tagged and recaptured in the Albert River in the Gulf of

Carpentaria. This is a shorter-lived species so the longest time out will be less than for other species.

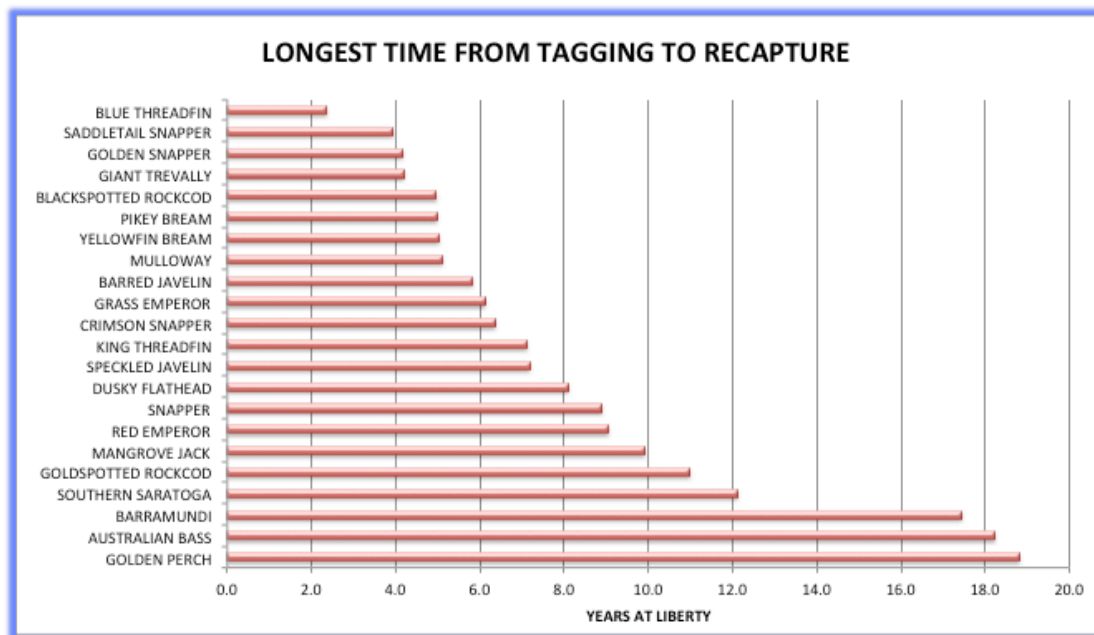


Figure 2: Longest time between tagging and recapture 1985-2014

At the other end of the scale many fish are recaptured shortly after tagging. Of the 22 species there are 19 where fish were recaptured on the same day as when tagged, with for species like Goldspotted Rockcod a fish was tagged and recaptured twice (caught 3 times) on the same day. *Figure 3* shows the percentage of fish of each species that were recaptured on the same day as when tagged.

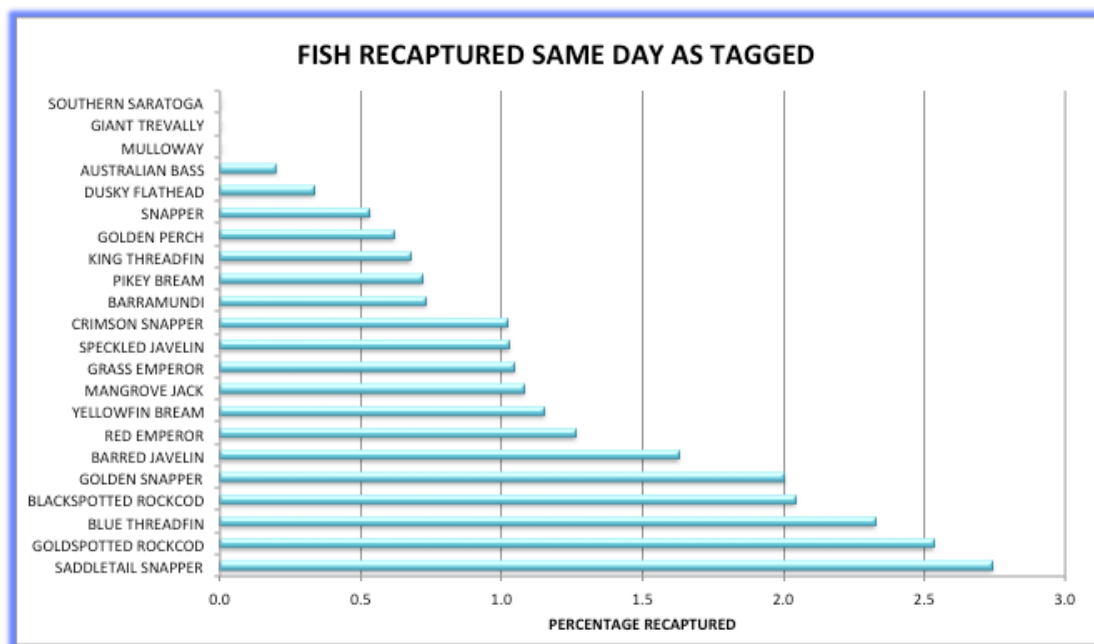


Figure 3: Percentage of fish tagged and recaptured on the same day

The highest percentage of fish recaptured on the same day was 2.7% (20 fish from 729 recaptured) for Saddletail Snapper followed by Goldspotted Rockcod at 2.5% (82 fish from 3,238 recaptured) and Blue Threadfin at 2.3% (3 fish from 129 recaptured). This is a little surprising as the species is more difficult to handle and tag than other species.

The percentage of Barramundi recaptured on the same day was 0.7% but was the highest number of individual fish (148 fish from 20,249 recaptured). Barramundi holds the record for the shortest time between tagging and recapture at around 10 seconds. As the fish was released another fisher retrieving a lure hooked up almost immediately after the release and it turned out to be the fish that was just released.

The 3 species that have not been recaptured on the same day were Southern Saratoga, Giant Trevally and Mulloway. The lowest percentage of fish recaptured on the same day was for Australian Bass at 0.2% (10 fish from 5,033 recaptured).

Many fish were also recaptured within a week (7 days) of being tagged. *Figure 4* shows the percentage of each of the 22 species recaptured within a week.

Barred Javelin at 18.0% (133 fish of 737 recaptured) were the most recaptured within 7 days followed by Saddletail Snapper at 13.9% (101 fish of 729 recaptured). The least fish recaptured within 7 days was Australian Bass at 1.0% (52 fish of 5,033 recaptured). For Barramundi 3.5% (710 fish of 20,249) were recaptured within 7 days.

Given the percentages of fish recaptured on the same day and within a week this suggests that tagging has minimal impact on the behaviour and feeding of these species.

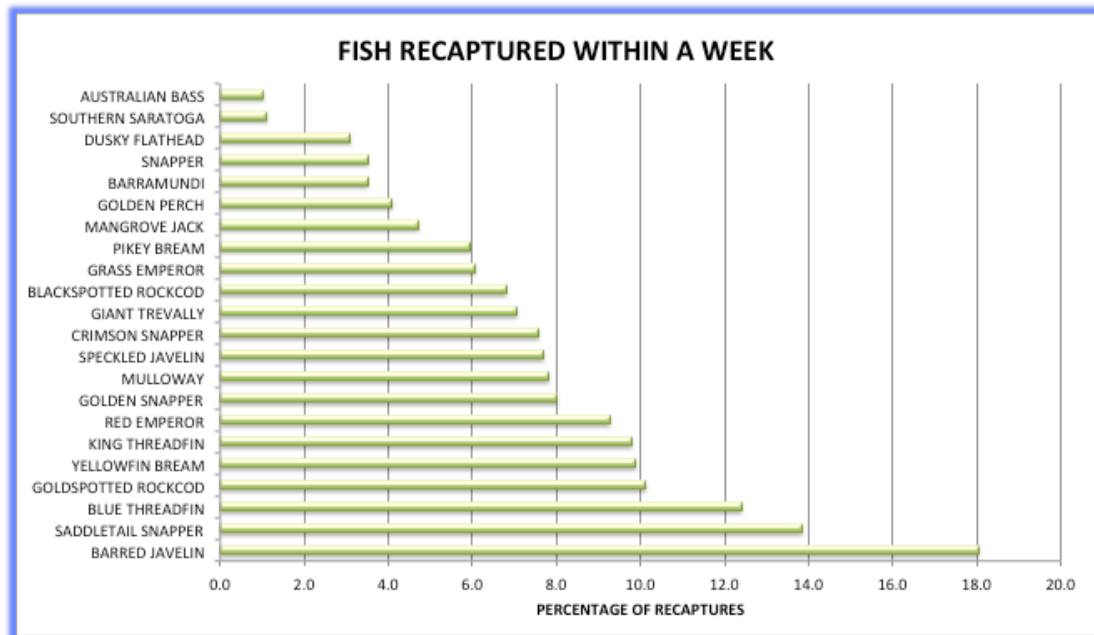


Figure 4: Percentage of fish recaptured within a week of being tagged

## NUMBER OF TIMES RECAPTURED

Many fish were recaptured multiple times with all 22 species having at least 1 fish recaptured twice. *Figure 5* shows the number of times individual fish were recaptured multiple times. The most times an individual fish was recaptured was 13 for a Mangrove Jack followed by 11 times for a Barramundi and 10 times for a Golden Snapper.

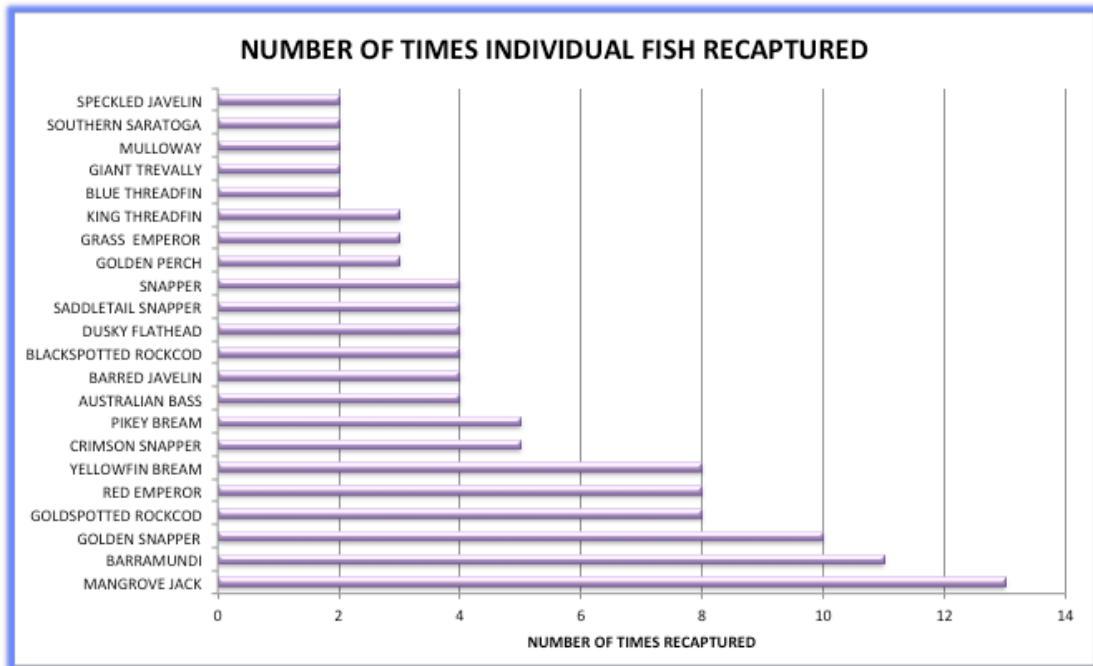


Figure 5: Number of times individual fish were recaptured

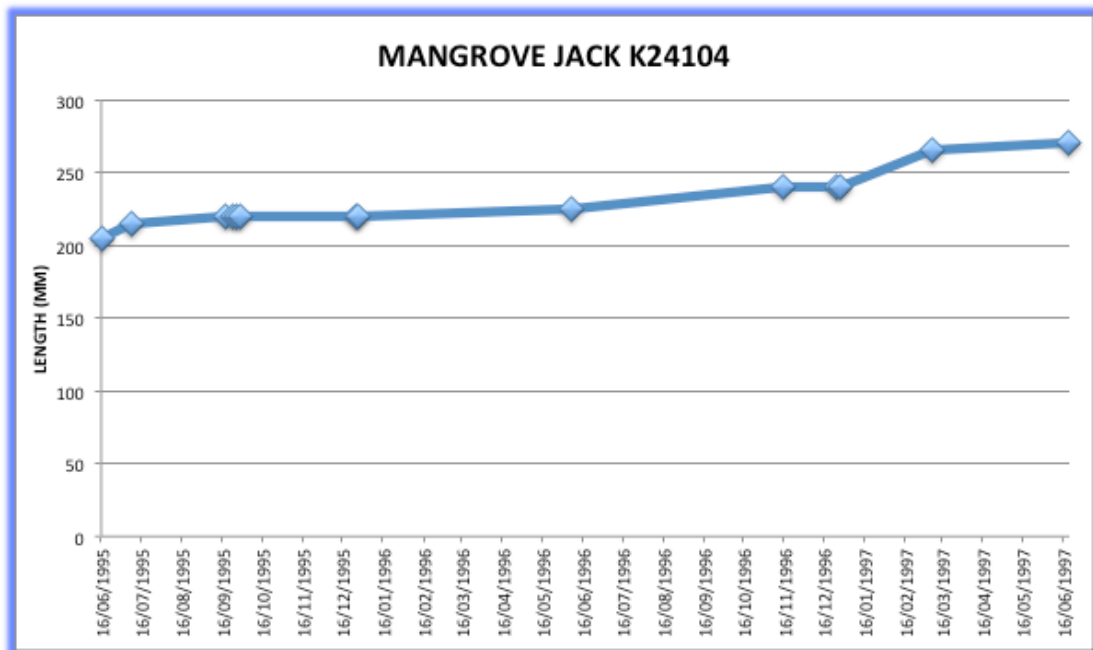


Figure 6: Mangrove Jack K24104 recaptured 13 times

The Mangrove Jack was tagged in a small coastal creek near Mourilyan in Jun 1995 and recaptured continually for 2 years through to Jun 1997. *Figure 6* shows the number of times K24104 was recaptured and its growth over 2 years.

The Barramundi was tagged in Jun 2006 in the Johnstone River by Fisheries Queensland as part of a project monitoring fish in the river. It was then recaptured 11 times through to Sep 2010 with *figure 7* showing the growth over the 4.25 years.

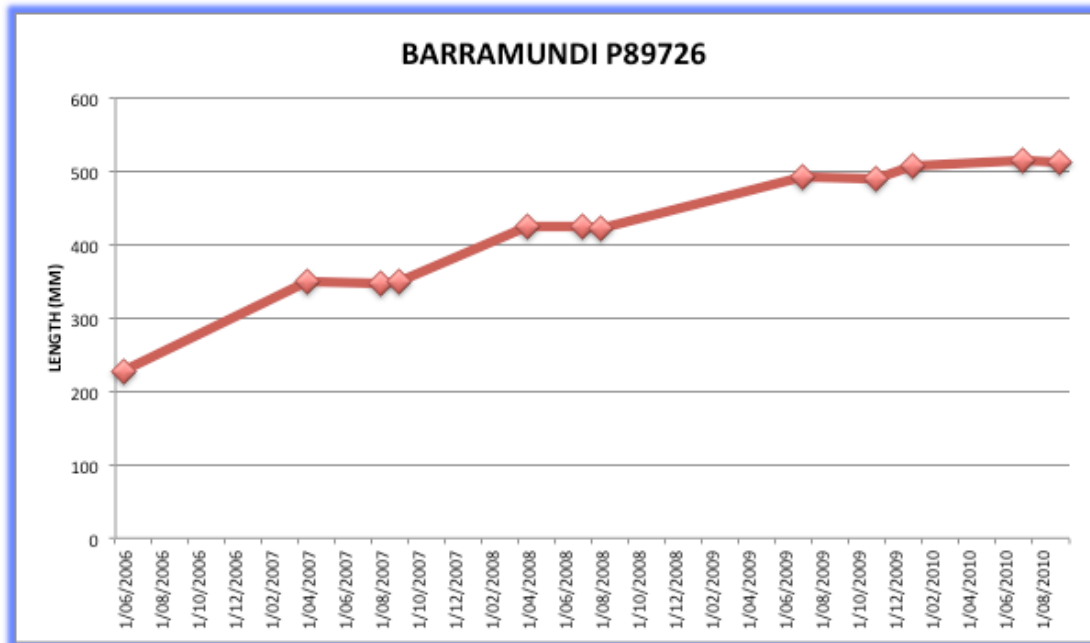


Figure 7: Barramundi P89726 recaptured 11 times

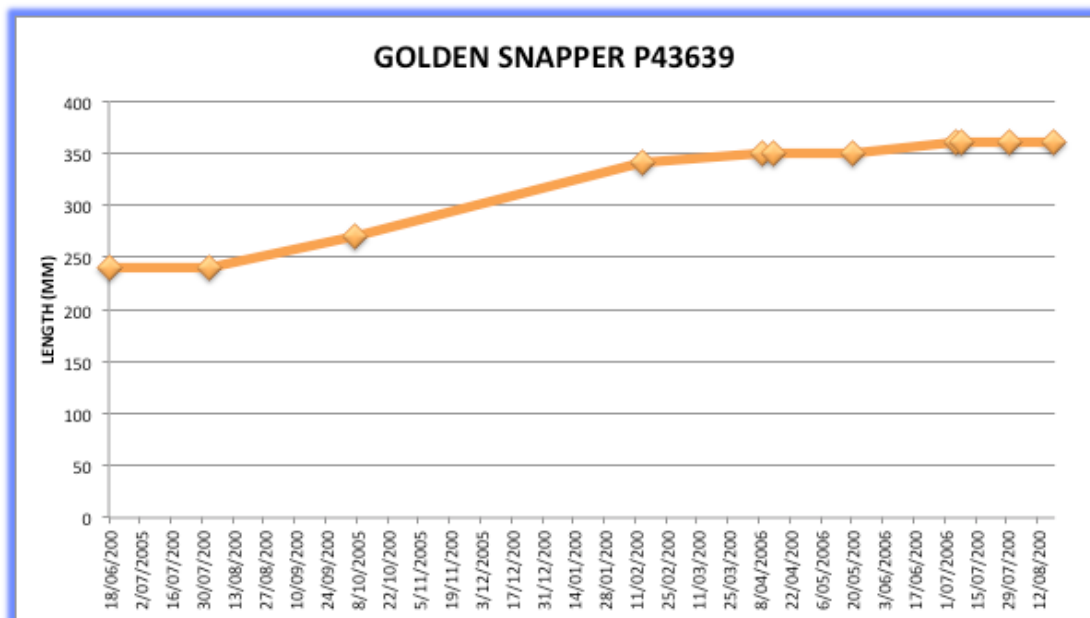


Figure 8: Golden Snapper P43639 recaptured 10 times



The Golden Snapper was tagged in Jun 2005 in Packers Creek at Port Douglas and then recaptured by the tagger 10 times for the next 1.2 years through to Aug 2006. *Figure 8* shows the growth of that fish over that time.

## FISH MOVEMENT

All species recorded movements away for the area tagged. *Figure 9* shows the furthest distance each species moved from tagging to recapture.

The furthest distance moved was a Barramundi tagged in the Hey River at Weipa in Aug 1996 and recaptured in Feb 2004 near Cairns on the east coast having moved 1,100km. This was the only verified movement of a fish from the Gulf of Carpentaria to the east coast. As well Barramundi has the longest movement within a catchment. Barramundi stocked in Lake Theresa near Clermont were recaptured in the Fitzroy River estuary from 750-800km down river and 1 fish as recaptured in Gladstone Harbour 850km from where tagged.

The next furthest distance moved was for a Speckled Javelin tagged in Pumicestone Passage in Jan 2001 and recaptured in Jun 2002 at North Shore near Sydney. This is the only fish of that species that moved over 50km from where tagged. A King Threadfin tagged in Oct 1997 in the Hey River at Weipa was recaptured in Apr 1998 in the Flinders River 600km south.

The least distance moved was for a Southern Saratoga that move 62km from where tagged. The fish was tagged in Jun 2000 in the Dawson River and recaptured upstream in Aug 2001.

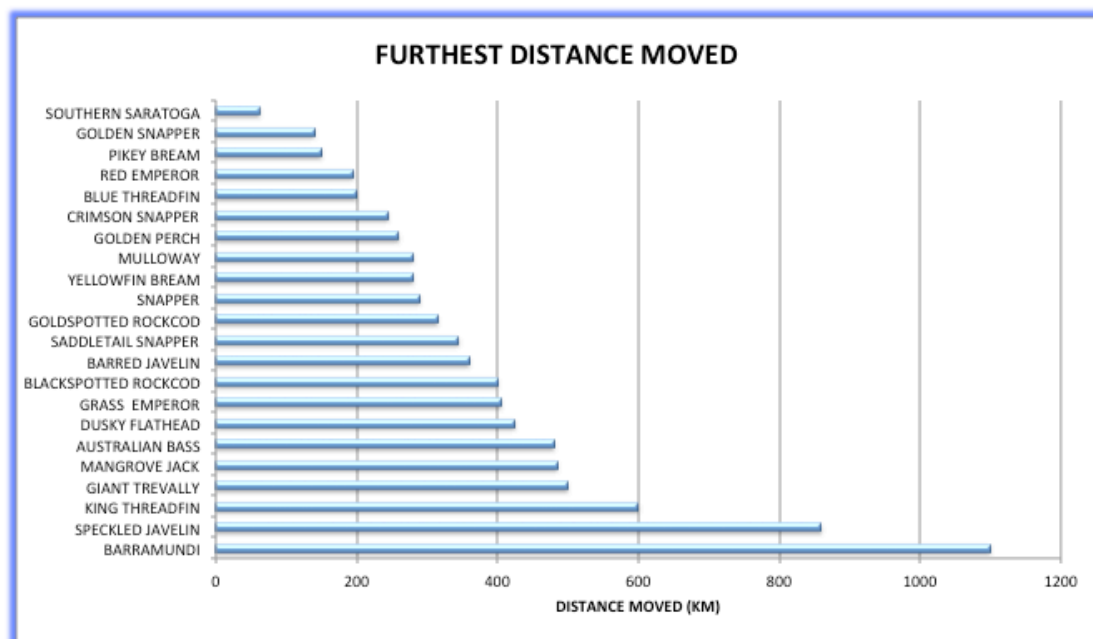


Figure 9: Furthest distance moved for each species

While fish of all species moved a significant distance from where tagged many fish were recaptured in the same area as tagged. *Figure 10* shows the percentage of fish that were recaptured over 5km from where tagged. The species recaptured most over 5km from where tagged was Blue Threadfin with 54.3% of recaptures. This indicates that this is mobile species.

The species next most caught over 5km from where tagged was Mulloway at 50% and then King Threadfin at 34.9%. For Barramundi 22.2% were recaptured over 5% from where tagged.

Saddletail Snapper at 3.4%, Crimson Snapper at 3.5% and Southern Saratoga at 4.4% were the least caught over 5km from where tagged. Saddletail and Crimson Snapper were mostly tagged as juveniles where they are found on inshore reef habitat. These fish (and Red Emperor) stay in the same habitat and then move to deeper offshore habitats as they mature. Southern Saratoga generally stay within a small home range and have been recaptured in the same area even after severe flooding.

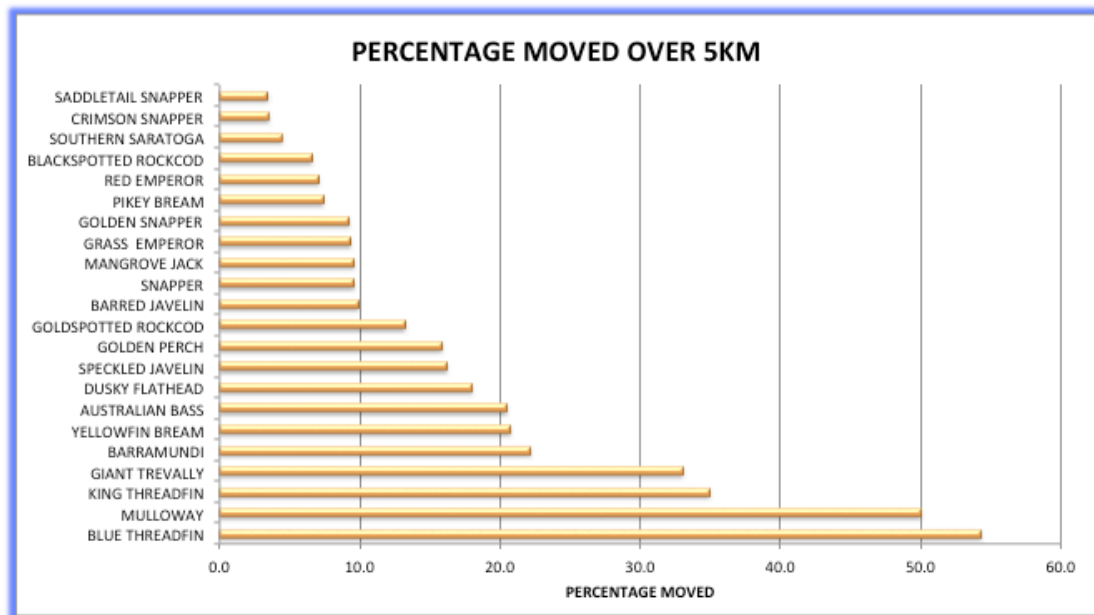


Figure 10: Percentage of fish recaptured over 5km from where tagged