



# WEIPA TAGGING 1985-2014



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### REPORT

This report has been prepared by Infofish Australia for Australian National Sportfishing Association Qld August 2014.

### SCOPE

This report examines tag and recapture data available for the Weipa area:

- ✦ Tagging and recaptures in Albatross Bay and Port Musgrave catchments 1985-2014

### DATA SOURCE

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

### AREA MONITORED

Locations in the Albatross Bay and Port Musgrave area where fish were tagged and recaptured are shown using grids on Suntag grid map Weipa WAB (*figure 1*). Grids on this map are 2km<sup>2</sup>. There is a commercial netting closure and a catch and release only zone as shown.

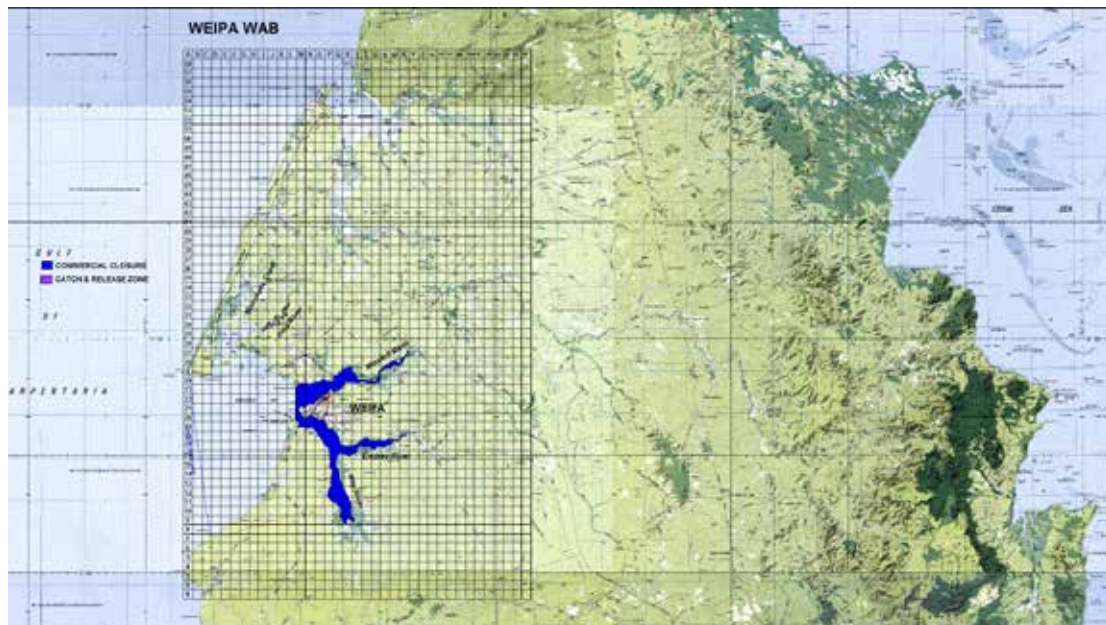


Figure 1: Suntag grid map Weipa WAB

## SOME OBSERVATIONS

Based on the data collected in the Weipa map WAB area the following observations are made:

- ✦ There were 43,858 fish tagged and 812 recaptures (1.9%) in from 1985-2014.
- ✦ There were 373 grids where fish were tagged including 9 grids where over 1,000 fish were tagged.
- ✦ Most species tagged were Barramundi (35,934 or 81.9%), Mangrove Jack (3,105 or 7.1%) and Golden Snapper (2,481 or 5.7%).
- ✦ Recaptures of species were Barramundi (625 or 1.7%), Mangrove Jack (49 or 1.6%) and Golden Snapper (78 or 3.1%).
- ✦ Most tagged Barramundi (81.8%) were in the size range 350:549mm, Mangrove Jack (90.8%) were 250:449mm and Golden Snapper (91.0%) were 250:449mm.
- ✦ Average annual growth for Barramundi was 65.7mm/year, Mangrove Jack was 57.4mm/year and Golden Snapper was 86.6mm/year.
- ✦ Barramundi (36.7%), Mangrove Jack (76.2%) and Golden Snapper (87.1%) were recaptured in the same area as tagged (within 2km).
- ✦ There were 12 Barramundi (2.0%) recaptured outside the WAB map area with one fish being recaptured 1,100km away on the east coast near Cairns.
- ✦ There were 5 Mangrove Jack (11.9%) recaptured outside the WAB map area offshore in the Gulf of Carpentaria.
- ✦ There were 8 (36.4%) of 22 King Threadfin recaptured that were recaptured outside the WAB map area ranging from 100km (Nassau River) to 600km (Flinders River) south along the coast.

## FISH TAGGED AND RECAPTURED

From 1985-2014 there were 43,858 fish tagged with 812 recaptures (1.9%) of individual fish (excluding multiple recaptures). *Table 1* shows the number of key species tagged and recaptured.

Species	Tagged	Recap 1	% Recap
BARRAMUNDI	35934	625	1.7
MANGROVE JACK	3105	49	1.6
GOLDEN SNAPPER	2481	78	3.1
QUEENFISH	749	7	0.9
KING THREADFIN	382	24	6.3
BARRED JAVELIN	353	4	1.1
BLACKSPOTTED ROCKCOD	133	5	3.8
GIANT TREVALLY	100	1	1.0
OTHER SPECIES	621	19	3.1
TOTAL	43858	812	1.9

Table 1: Number of fish tagged and recaptured 1985-2014

Of the fish tagged there were 42,874 where the tagging grid was recorded. There were fish tagged in 373 grids with 9 grids where over 1,000 fish were tagged. *Figure 2* shows where fish were tagged with most fish (4,258) tagged in the Mission River at grid U24.

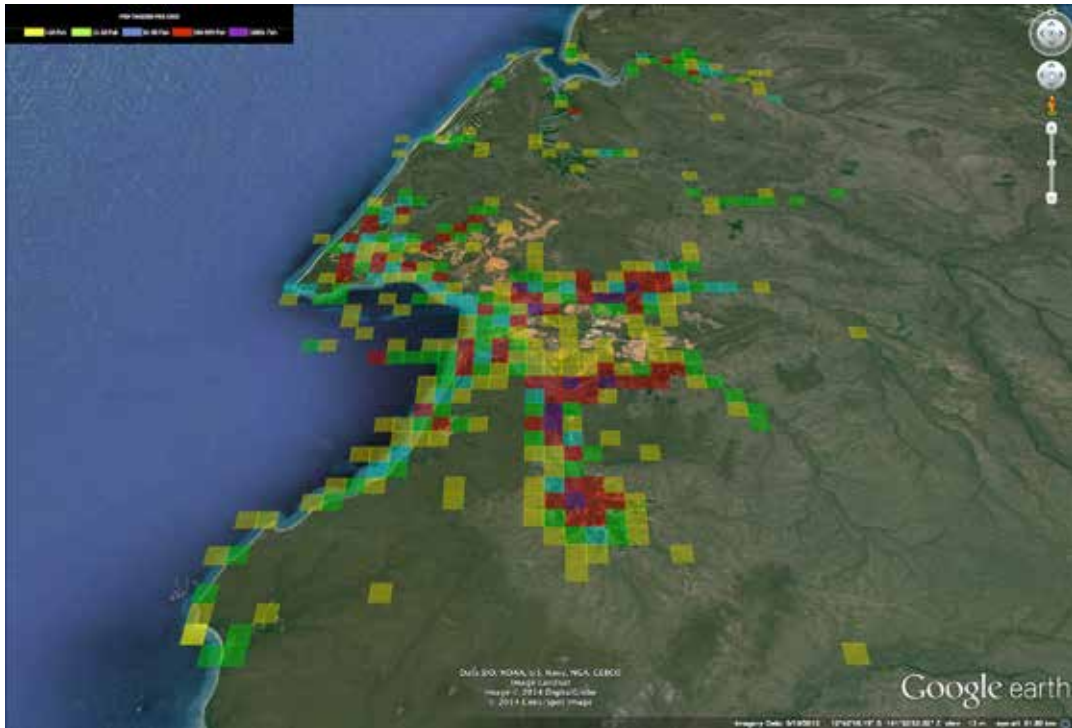


Figure 2: Grids where fish were tagged from 1985-2014

### BARRAMUNDI

There were 35,934 Barramundi tagged and that is 81.9% of the fish tagged. There were 35,305 Barramundi tagged in 331 grids with 7 grids where over 1,000 fish were tagged. *Figure 3* shows where Barramundi were tagged with most fish (4,131) tagged in the Mission River at grid U24.

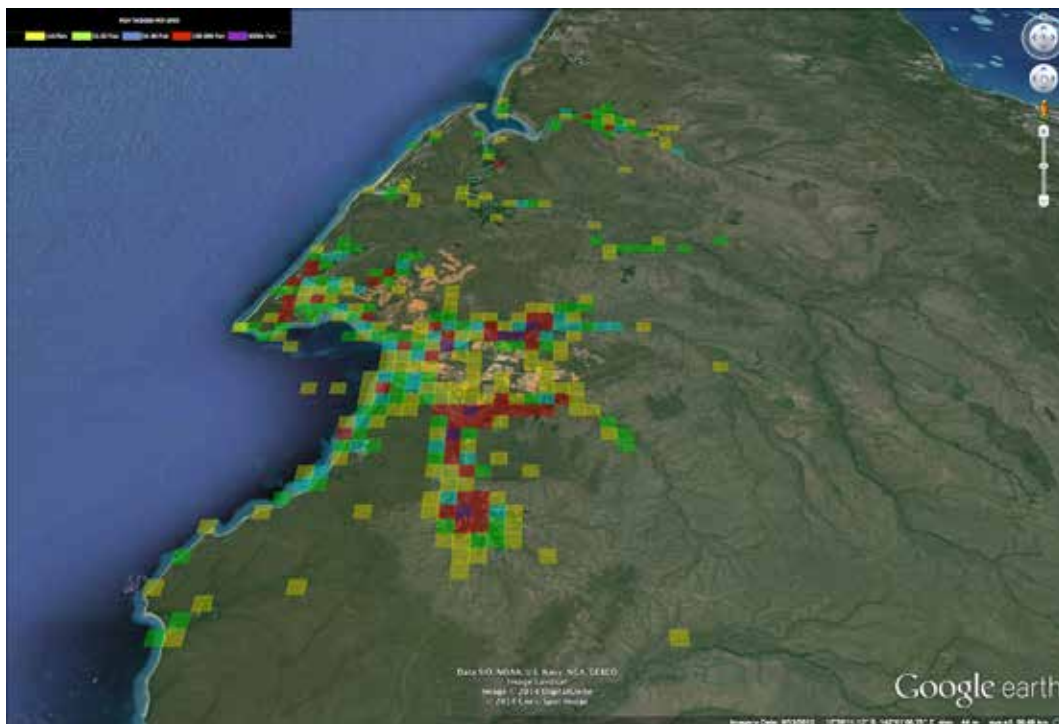


Figure 3: Grids where Barramundi were tagged from 1985-2014

Of the fish tagged there were 35,771 (99.5%) measured. Of those 11,012 (30.8%) were in the size range 400:449mm and 81.8% were in the size range 350:549mm. *Figure 3* shows the number of Barramundi tagged in each size range.

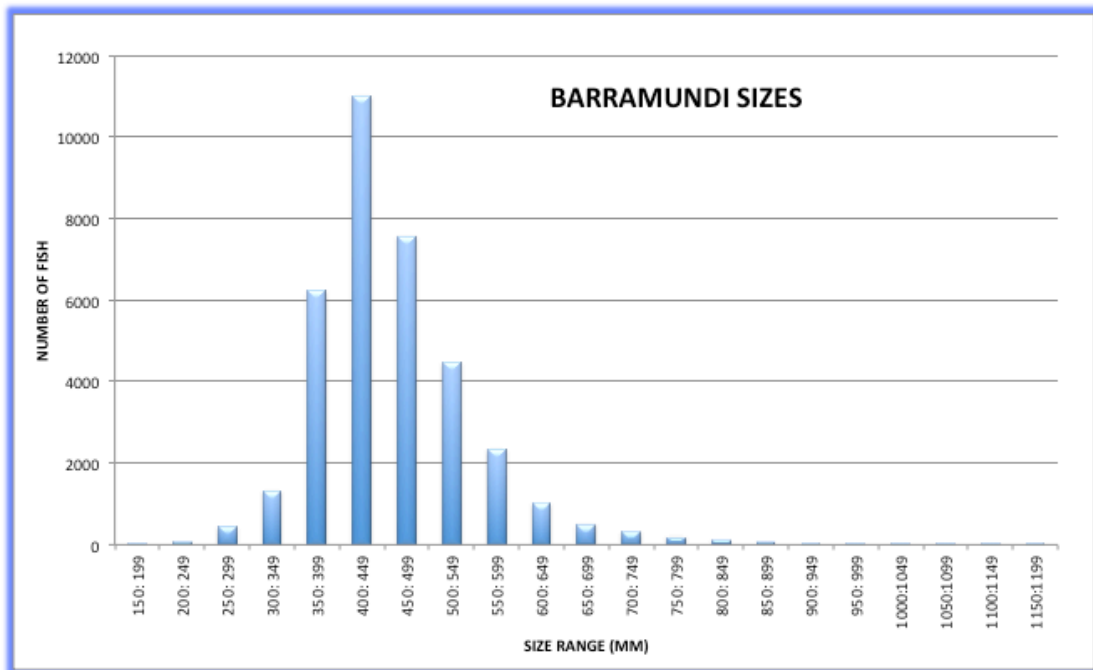


Figure 3: Number of Barramundi tagged in each size range

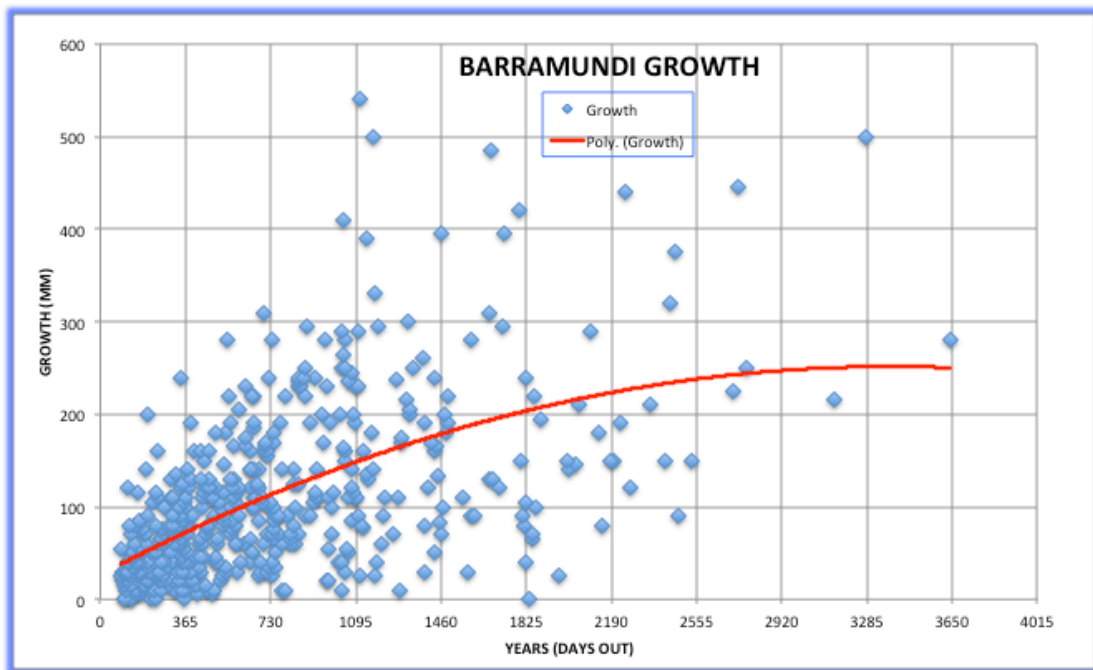


Figure 4: Growth of Barramundi compared with years between tagging and recapture

Of the fish tagged there were 625 recaptures (1.7% recapture rate). The Weipa area is not as heavily fished when compared with the east coast and some rivers are closed to commercial netting of Barramundi (*figure 1*). By comparison the recapture rate for Barramundi in the

Fitzroy River is 17.4%<sup>1</sup> where Barramundi are heavily targeted by commercial and recreational fishers.

Of the total of 635 recaptures there were 505 recaptures where the fish were out for 90 days or more and had positive growth. The average annual growth was  $65.7 \pm 4.2\text{mm}$  (95% confidence) and 81.6% had an annual growth rate of 100mm or less. It takes about 5 years for fish to achieve an average growth of 200mm. This was significantly less than the growth rate of Barramundi in other areas eg Fitzroy River where the average annual growth was  $151.8\text{mm}^2$ . *Figure 2* shows the growth of the fish compared with the numbers of years (days out) between tagging and recapture.

Of the recaptures there were 591 (including multiple recaptures) where the distance between tagging and recapture could be calculated. Distance was calculated as the shortest distance between tagging and recapture following the waterway. Of the recaptures there were 217 (36.7%) that were recaptured in the same area as tagged (within 2km). There were 12 (2.0%) that were recaptured over 50km from where tagged with 9 of those being recaptured outside the WAB map area.

One fish tagged at 505mm in the Hey River in Aug 1996 was recaptured on the east coast at Taylor Point (1,100km) near Cairns in Feb 2004 (7.5 years later) at 950mm. This is the only verified recapture of a fish recaptured on the east coast that was tagged in the Gulf. Another fish tagged in the Embley River was recaptured 5.8 years later 390km south in the Nassau River. *Figure 5* shows where Barramundi tagged in map WAB were recaptured.

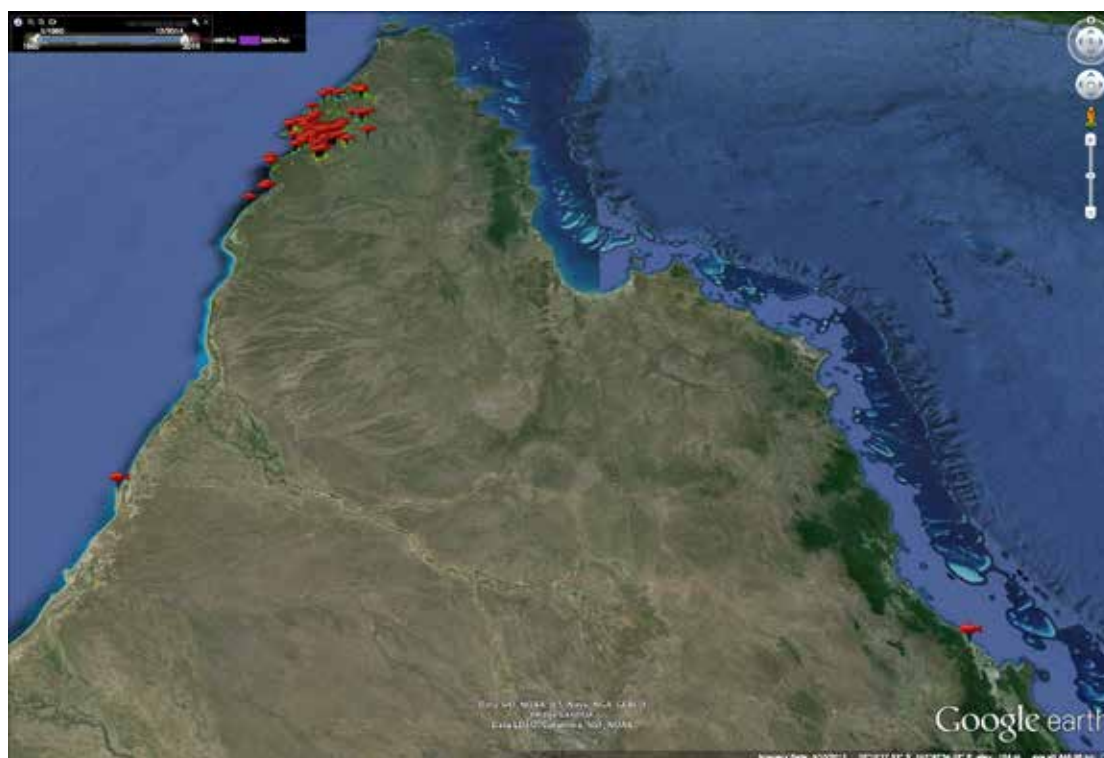


Figure 5: Recaptures of Barramundi tagged in the Weipa map area WAB

<sup>1</sup> “Infofish Citizen Science and Suntag Report 2013/14” available from [www.suntag.org.au](http://www.suntag.org.au)

<sup>2</sup> Growth, Movement and survival of Stocked Fish in impoundments and waterways of Queensland 1987-2008 available from [www.suntag.org.au](http://www.suntag.org.au)

## MANGROVE JACK

There were 3,105 Mangrove Jack tagged (7.1% of total fish tagged). There were 2,934 Mangrove Jack tagged in 200 grids with 594 fish tagged in Crawford Creek (grid D27) and Young Creek (grid D28). *Figure 6* shows the grids where Mangrove Jack were tagged.

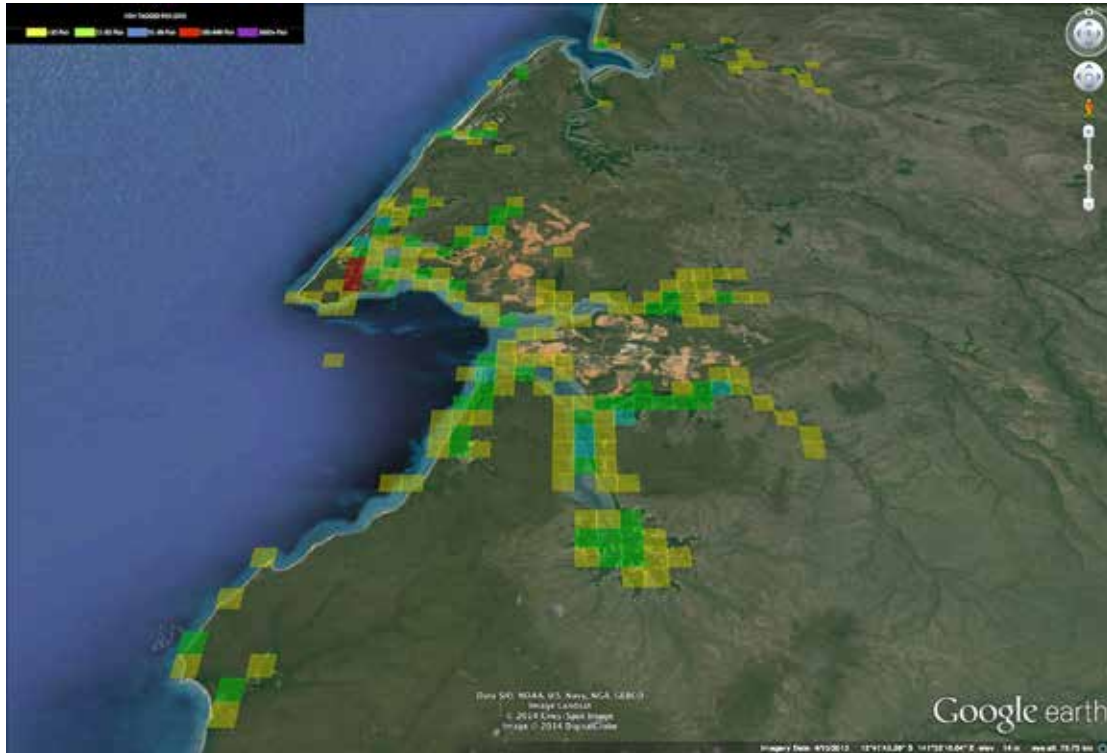


Figure 6: Grids where Mangrove Jack were tagged from 1985-2014

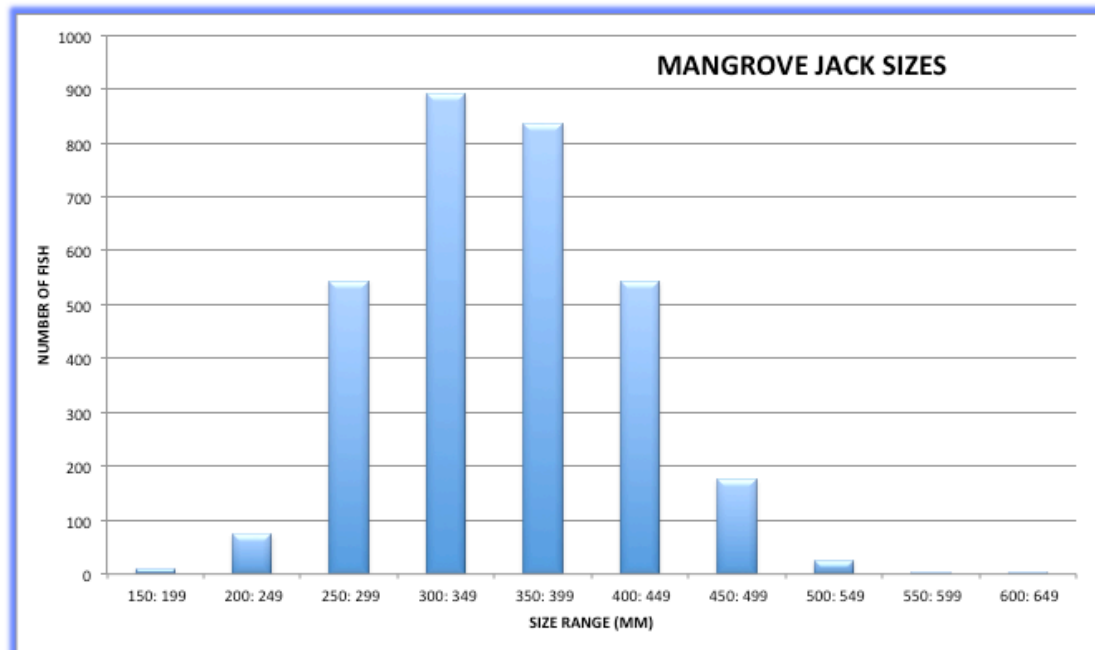


Figure 7: Number of Mangrove jack tagged in each size range

Of the fish tagged there were 3,096 (99.7%) measured. Of those 2,811 (90.8%) were in the size range 250:449mm. *Figure 7* shows the number of Mangrove Jack tagged in each size range.

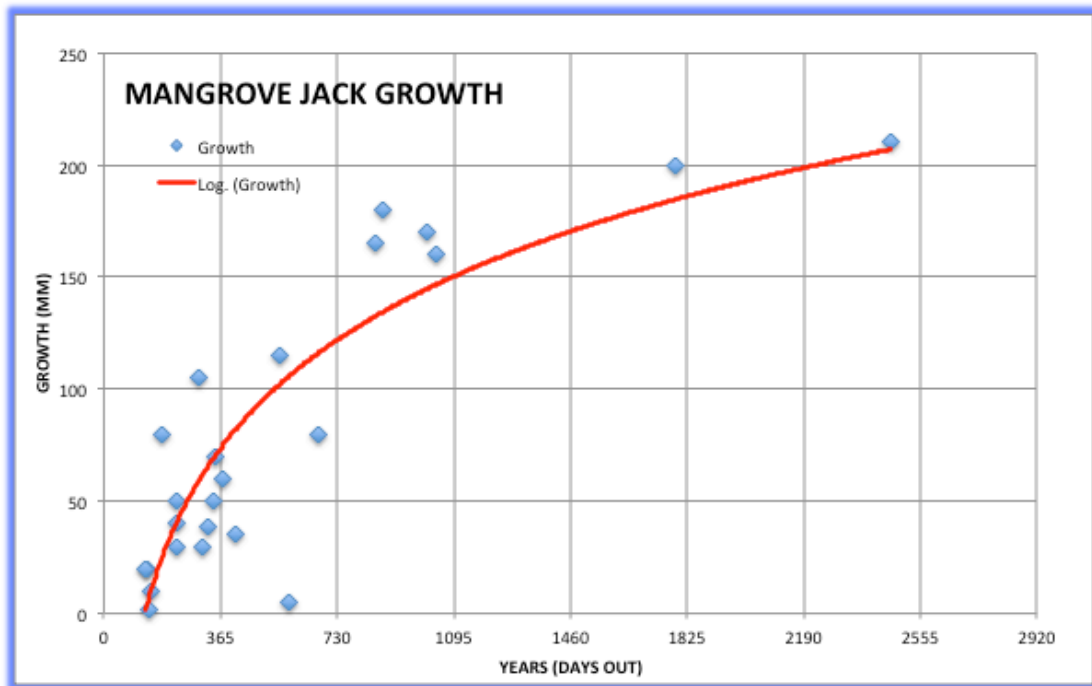


Figure 8: Growth of Mangrove Jack compared with years between tagging and recapture

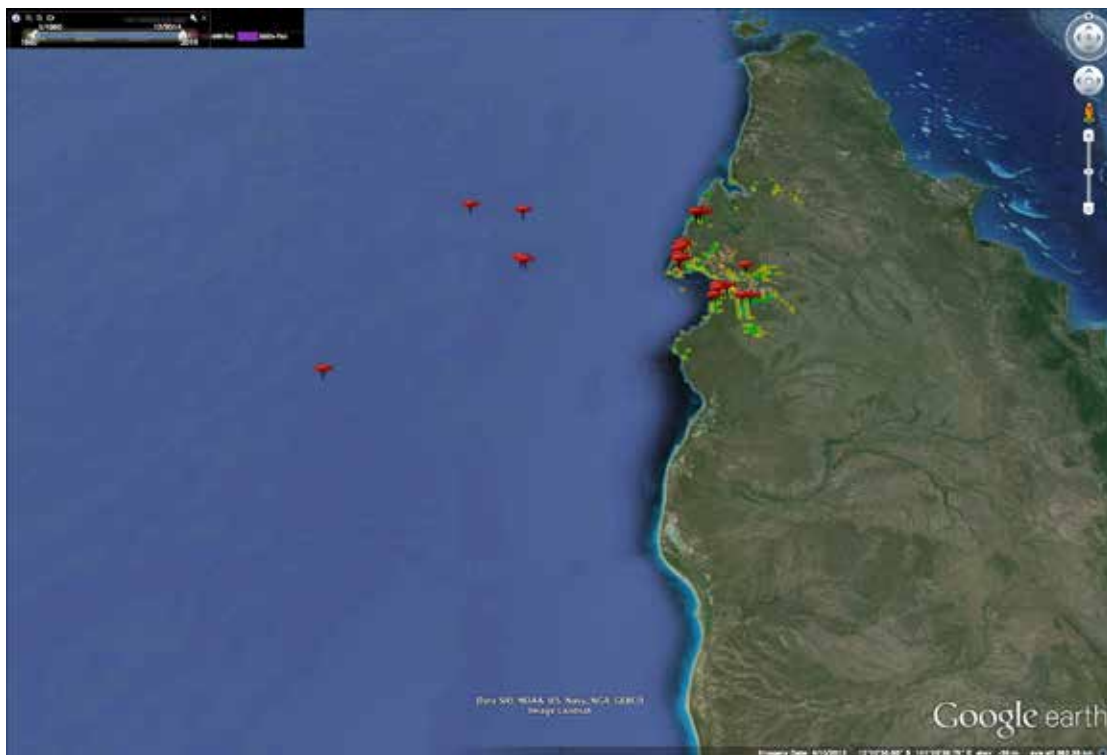


Figure 9: Recaptures of Mangrove Jack tagged in the Weipa map area WAB

Of the Mangrove Jack tagged there were 49 recaptures (1.6% recapture rate). Of those there were 24 recaptures where the fish were out for 90 days or more and had positive growth.



The average annual growth was 57.4mm however due to the low number of usable recaptures this should be viewed as being indicative. *Figure 8* shows the growth of the fish compared with the numbers of years (days out) between tagging and recapture.

Of the recaptures there were 42 (including multiple recaptures) where the distance between tagging and recapture could be calculated. Of the recaptures there were 32 (76.2%) that were recaptured in the same area as tagged (within 2km). There were 5 (11.9%) that were recaptured over 100km from where tagged with 5 of those being recaptured outside the WAB map area.

Of the recaptures outside map WAB all were offshore in the Gulf of Carpentaria from 100-220km from where tagged and recaptured in 60-70m of water by trawlers. *Figure 9* shows where Mangrove Jack were tagged and recaptured.

### **GOLDEN SNAPPER**

There were 2,481 Golden Snapper tagged (5.7% of total fish tagged). There were 2,446 Golden Snapper Jack tagged in 180 grids with 251 fish tagged in the Hey River (grid P14). *Figure 10* shows the grids where Golden Snapper were tagged.

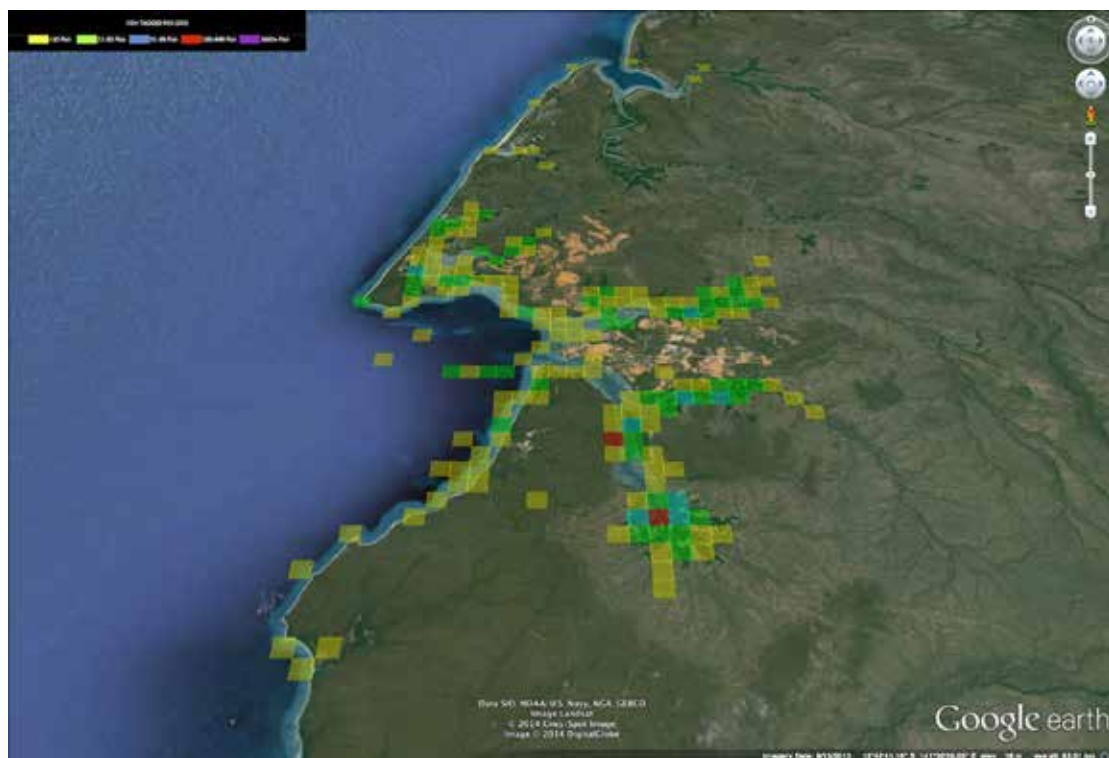


Figure 10: Grids where Golden Snapper were tagged from 1985-2014

Of the fish tagged there were 2,478 (99.9%) measured. Of those 2,256 (91.0%) were in the size range 250:449mm. *Figure 11* shows the number of Golden Snapper tagged in each size range.

Of the Golden Snapper tagged there were 78 recaptures (3.1% recapture rate). Of those there were 53 recaptures where the fish were out for 90 days or more and had positive

growth. The average annual growth was 86.6mm. *Figure 12* shows the growth of the fish compared with the numbers of years (days out) between tagging and recapture.

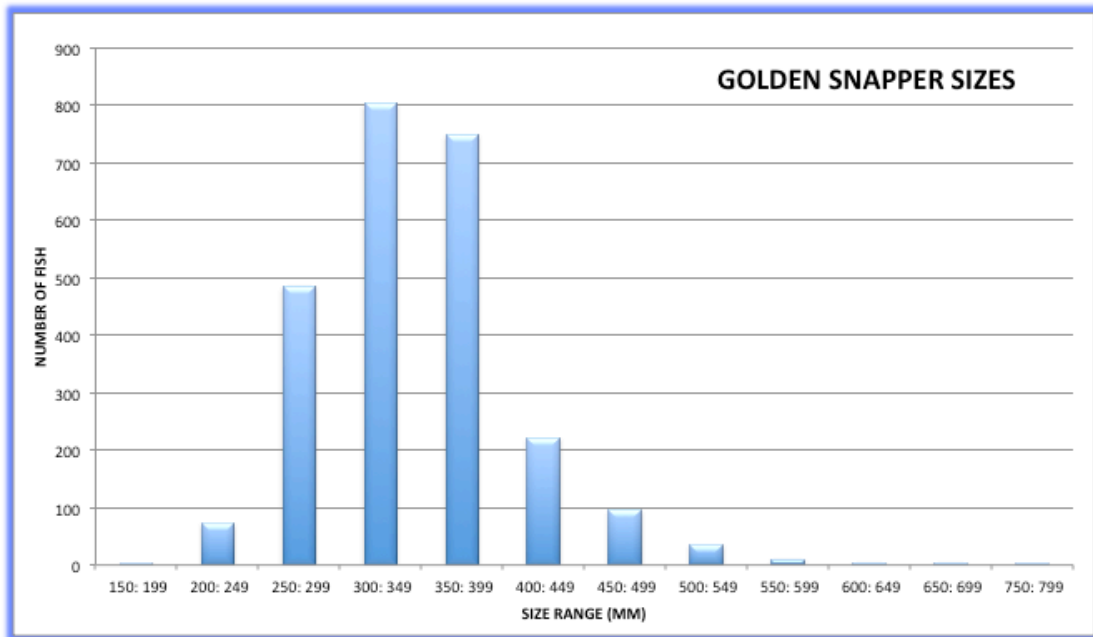


Figure 11: Number of Golden Snapper tagged in each size range

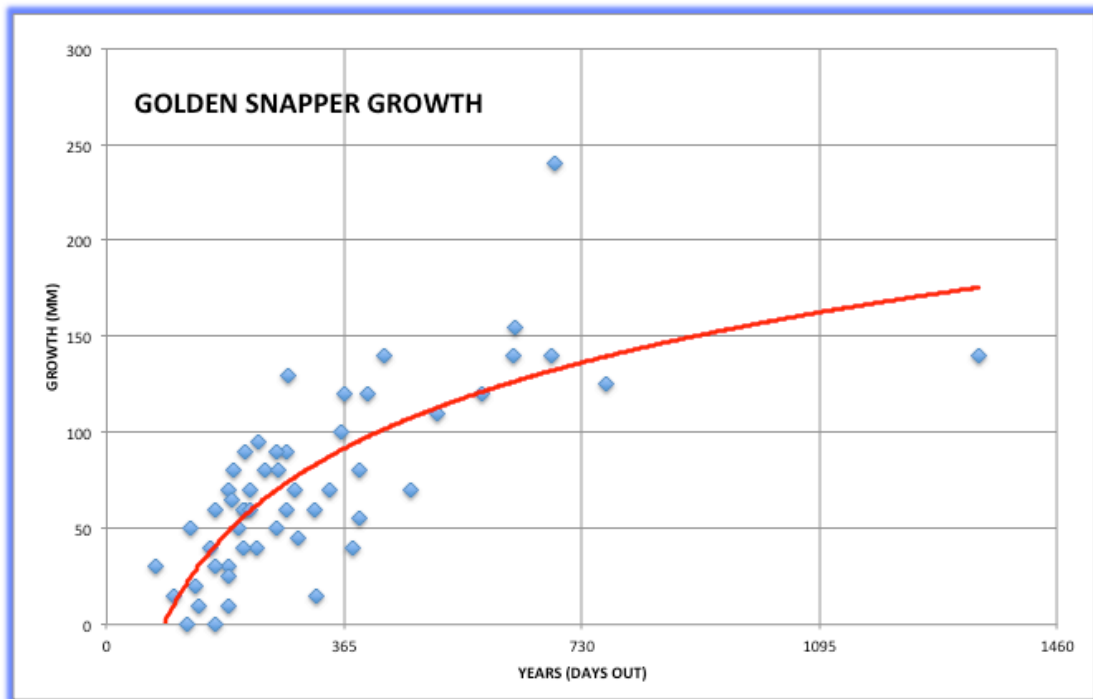


Figure 12: Growth of Golden Snapper compared with years between tagging and recapture

Of the recaptures there were 85 (including multiple recaptures) where the distance between tagging and recapture could be calculated. Of the recaptures there were 74 (87.1%) that were recaptured in the same area as tagged (within 2km). There were no fish recaptured outside the WAB map area with the furthest distance moved being 32km.

## KING THREADFIN

There were 382 King Threadfin tagged (0.9% of total fish tagged). There were 378 King Threadfin tagged in 59 grids with 103 fish tagged in Hey River (grid Q15). King Threadfin had the highest recapture rate of 6.3% and this compares with 6.5% in the Fitzroy River.<sup>3</sup>

Of the recaptures there were 22 (including multiple recaptures) where the distance between tagging and recapture could be calculated. Of the recaptures there were 8 (36.4%) that were recaptured outside the WAB map area as shown in *figure 13*. Those fish moved south along the coast and were recaptured from the Archer River (100km) to the Flinders River (600km).



Figure 13: Recaptures of King Threadfin tagged in the Weipa map area WAB

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<sup>3</sup> “King and Blue Threadfin in the Fitzroy River” report available from [www.crystal-bowl.com.au](http://www.crystal-bowl.com.au)