WEIPA ESTUARIES REVIEW JUNE 2025

INFORMATION RATING

Key species: Barramundi, Golden Snapper, King Threadfin
Fish timeframe: 2016-2025 Jan-Jun
Fisher timeframe: 2021-2025 Jan-Jun

Data from this area is an important contribution to the understanding of fisheries as it provides a comparison with the more heavily fished east coast.

Tagging in the Weipa area has been continuous since 1990 with taggers mostly targeting Barramundi and Golden Snapper using lures, and even though taggers have changed the fishing methodology and target species have remained constant.

Weipa is mostly a localised fishery with 75% of recaptures being by local fishers while the remaining fishers came from widespread areas from Cairns to NSW and Victoria, and travelled long distances to fish, mostly in the dry season from May-Oct. It is both a harvest and experiential fishery for Barramundi with 45% of recaptured legal Barramundi being kept (ex-taggers).

Key species tagged have been Barramundi (75%) and Golden Snapper (7%). King Threadfin have been added to the species included in the dashboard. While this is not a key species at 3% of fish tagged it has been added due to concerns raised by local fishers over stocks in the Gulf of Carpentaria and in the Weipa area in particular.

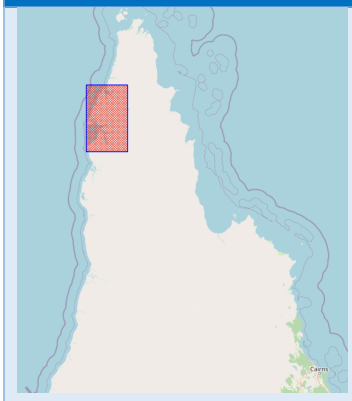
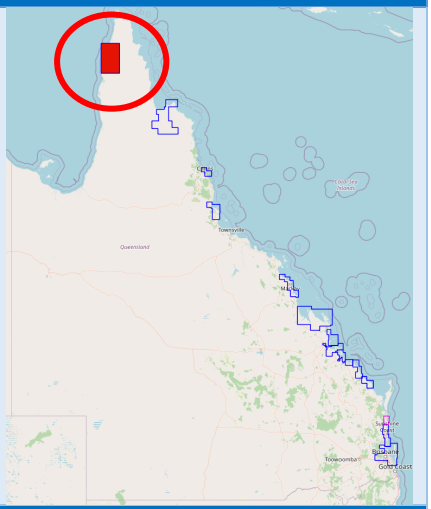
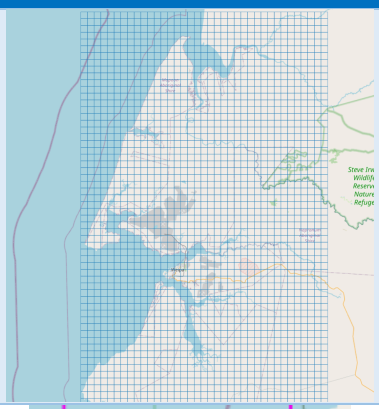
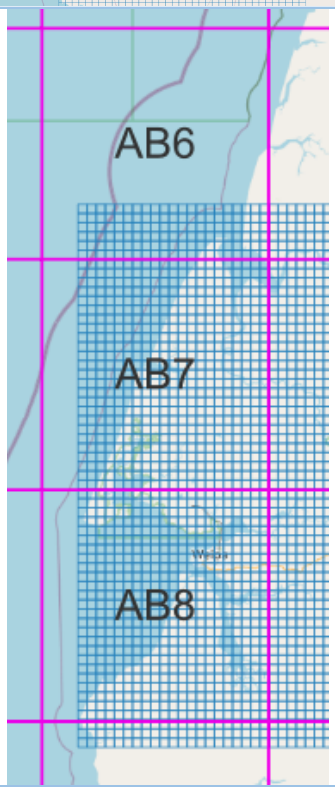
Barramundi tagged in the Weipa area were mostly below the legal limit with just 12% being over the legal limit over the decade. This is likely due to the population structure as most taggers do not keep many, if any, fish so the size structure is a reasonable reflection of the population.

There has been a significant decadal shift in tagging effort from 2006-2015 to 2016-2025 to the Wenlock and northern rivers whereas most effort in the previous decade was in the rivers running into Albatross Bay.

Most Barramundi were recaptured in the same area as tagged or moved down river while for Golden Snapper all were recaptured in the same area as tagged (but the number of recaptures was low).

Product of Infofish Australia

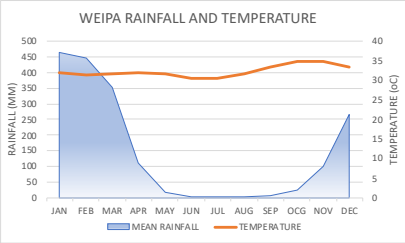
Supported by Suntag and Department of Agriculture and Fisheries

WEIPA ESTUARIES		LOCATION
	Weipa 12.643°S 141.862°E	
WATERWAYS	**ACTUAL**	**GRAPH or MAP**
Weipa grid map **Weipa WAB**	Albatross Bay Hey River Embley River Mission River Pine River Nomenade Creek Pennyfather River Wenlock River Ducie River Dulhunty River Namaleta Creek	
Commercial QFISH Grids	Grids AB6 AB7 AB8	

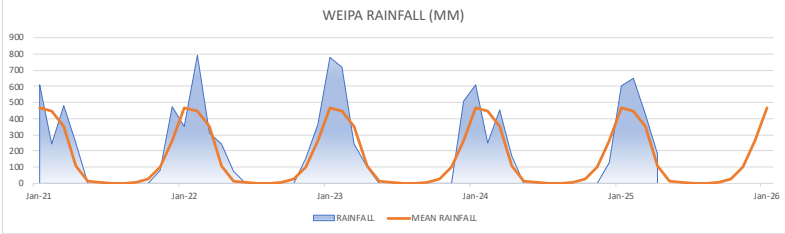
ENVIRONMENTAL

Weipa mean monthly rainfall (mm) and temperature (oC)
Wet season Dec-Apr

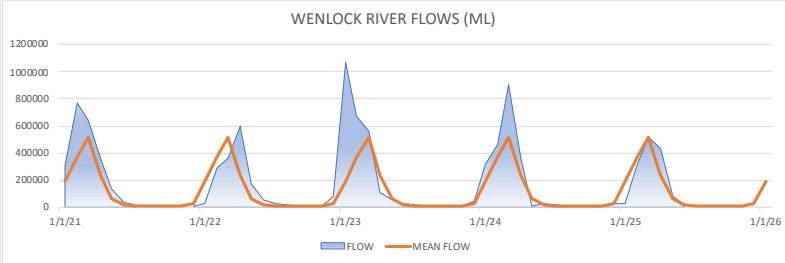
Rainfall	month	mm
	Jan	465
	Feb	447
Temp	month	oC
	Oct-Nov	35



Weipa rainfall and mean monthly rainfall (mm) 2021-2025

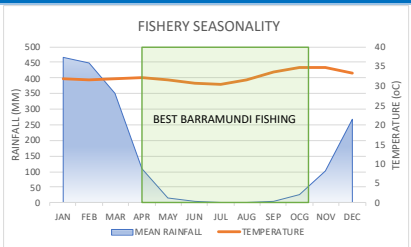
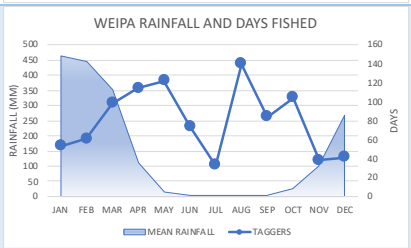
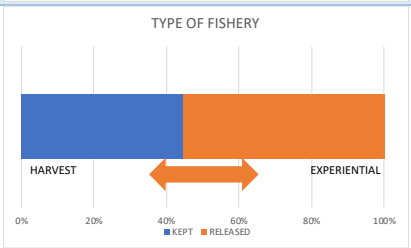
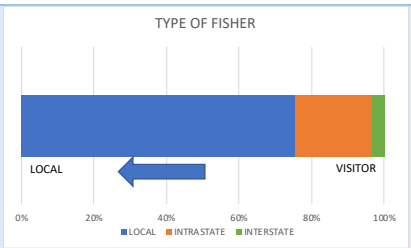
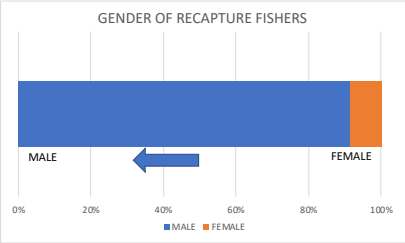


Wenlock River flows and mean monthly flows (ML) 2021-2025



FISHERS	ACTUAL	GRAPH or MAP
DATA RELIABILTY		
Sample size (days fished) **Tag days (blue arrow)** **Recaptures (orange arrow)** **Confidence %** **Error %** **2021-2025**		

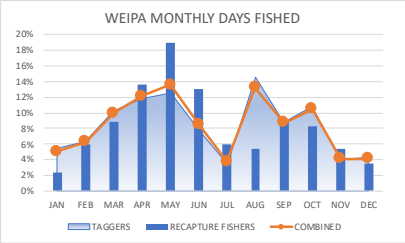
Reliability level	LOW		MODERATE	MODERATE		HIGH
Samples	10	41	68	271	384	664
Confidence	80%	80%	90%	90%	95%	99%
Error	20%	10%	10%	5%	5%	5%

TYPE OF FISHERY		
Seasonality **Average rainfall (mm)** **Mean maximum day temperature (oC)**	Best Barramundi fishing Apr-Oct	
Seasonality **Average rainfall (mm)** **Taggers (days fished)** **2021-2025** **2025 Jan-Jun**	Months most days fished Aug May Months least days fished Jul Nov	
Harvest or experiential fishery **Release rate of recaptured legal Barramundi (ex-taggers)** **2021-2025** **2025 Jan-Jun**	Barramundi legal fish kept Legal fish 65 Kept 29 (45%) Released 36 (55%)	
Local or visitor fishery **Where recapture fishers live** **2021-2025** **2025 Jan-Jun**	Recapture fishers 179 Local 135 (75%) Visitors 44 (25%)	
Recapture fishers by gender (ex-taggers) **Male** **Female** **2021-2025** **2025 Jan-Jun**	Recapture fishers 117 Male 107 (91%) Female 10 (9%)	

ACTIVITY

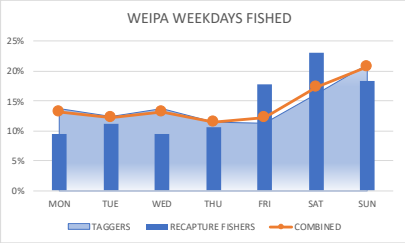
Monthly activity
Days fished
Taggers (961)
Recapture fishers (169)
2021-2025
2025 Jan-Jun

	Month	%
Taggers	Aug	18%
	May	13%
Recaps	May	19%
	Apr	14%

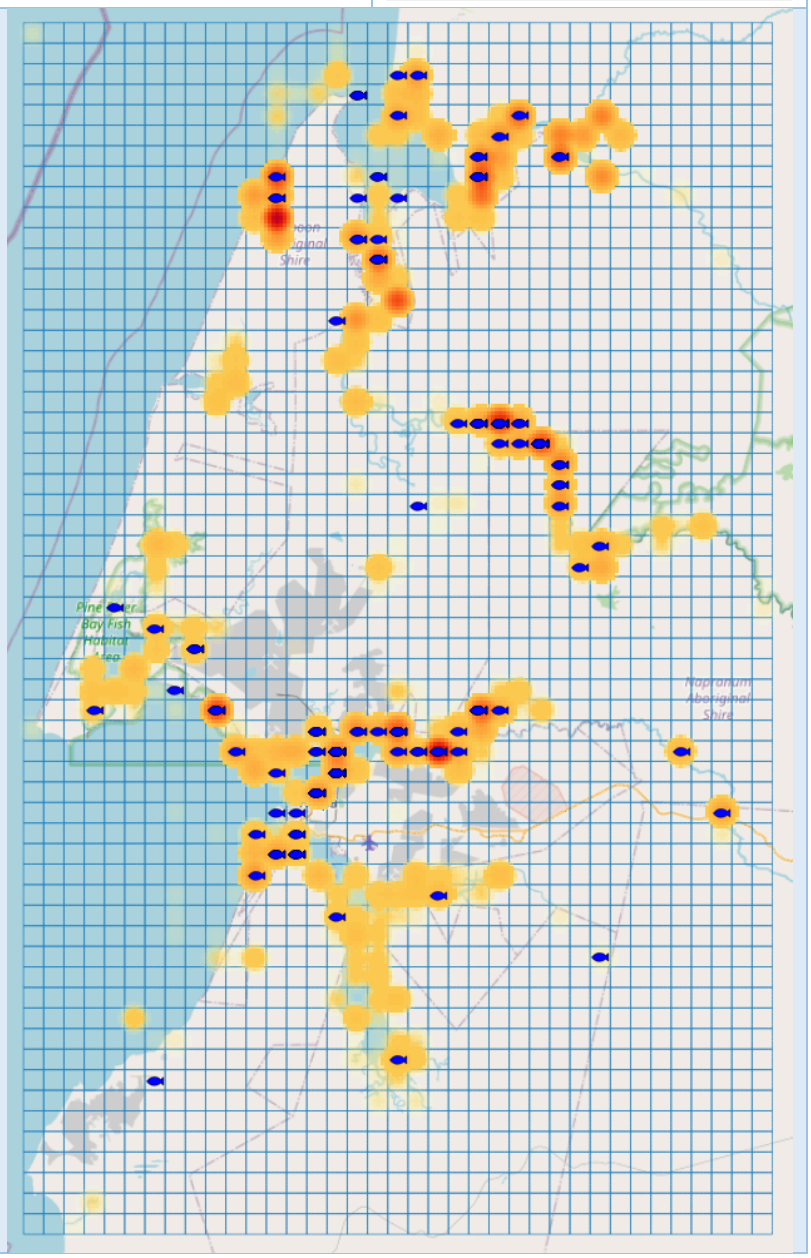


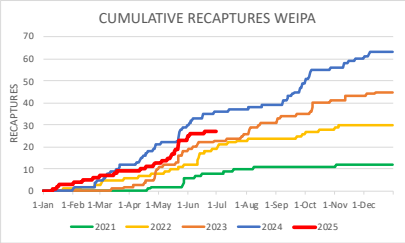
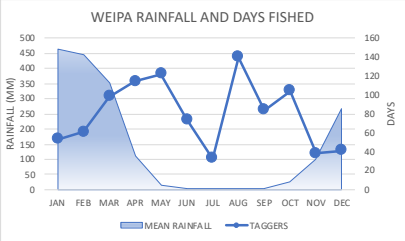
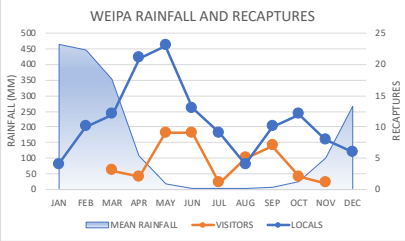
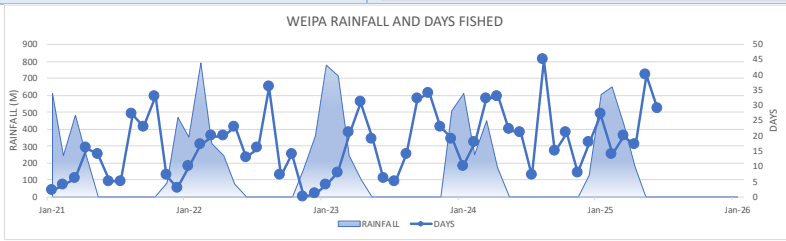
Weekday activity
Days fished
Taggers (961)
Recapture fishers (169)
2021-2025
2025 Jan-Jun

	Day	%
Taggers	Weekend	37%
	Weekdays	63%
Recaps	Weekend	41%
	Weekdays	59%

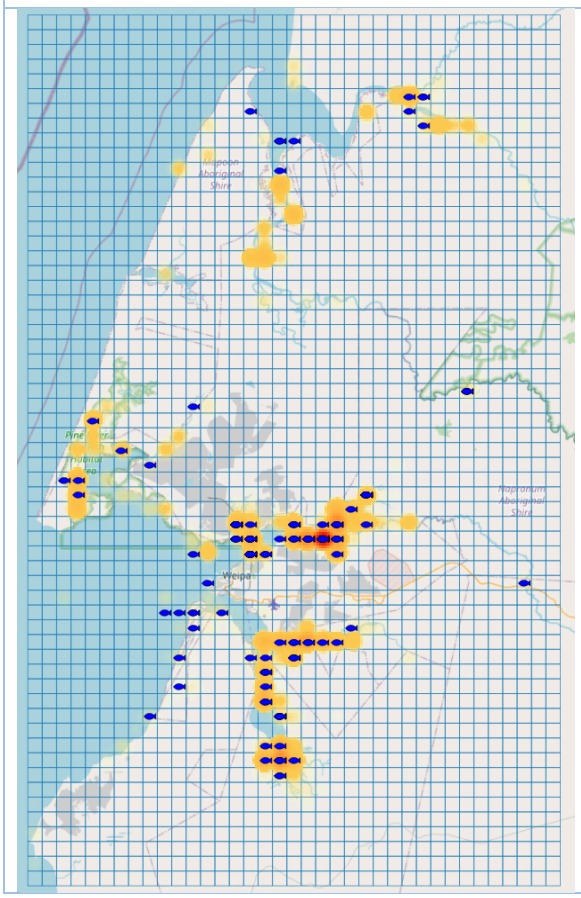
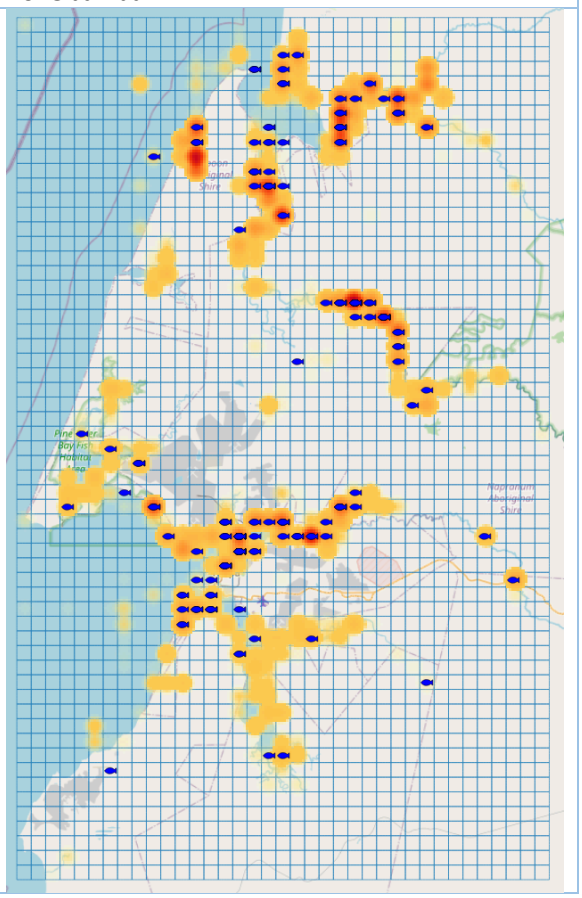


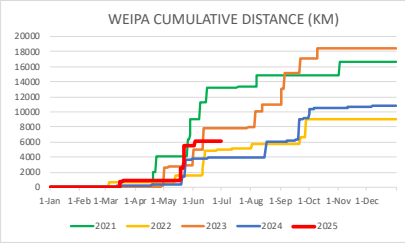
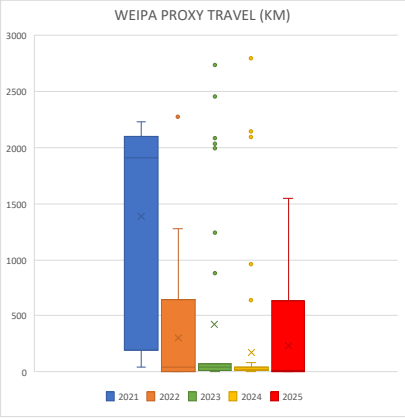
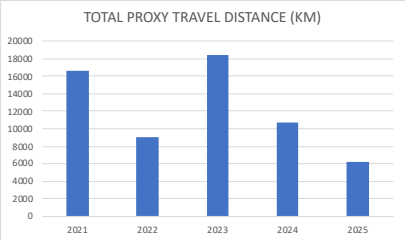
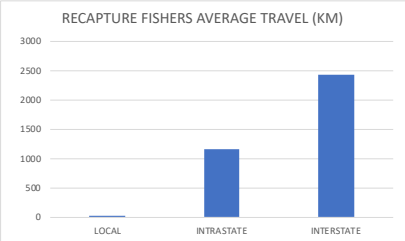
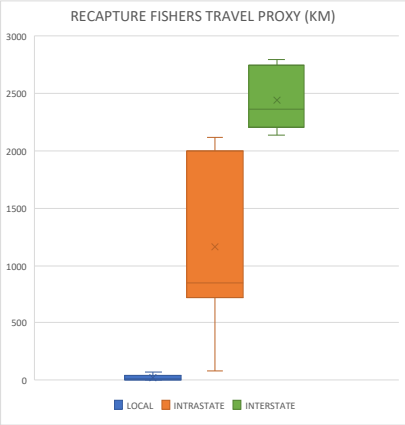
Location activity
Fish tagged (9,240)
(red-orange heat map)
Recapture fishers (180)
(blue fish)
2021-2025
2025 Jan-Jun



EFFORT	ACTUAL	GRAPH or MAP
Cumulative recaptures **2021-2025** **2025 Jan-Jun**	Year Recaps 2021 12 2022 30 2023 45 2024 63 2025 Jan-Jun 27	
Mean monthly rainfall (mm) **Taggers** **Days fished** **2021-2025** **2025 Jan-Jun**	Days fished 962 High High Aug 140 (15%) May 122 (13%) Low Jul 33 (3%)	
Mean monthly rainfall (mm) and recaptures by locals and visitors **2021-2025** **2025 Jan-Jun**	Recaptures Locals 132 Visitors 39 Most Locals May 23 Visitors May 9	
Rainfall and days fished by taggers **2021-2025** **2025 Jan-Jun**		

DECADAL EFFORT SHIFT

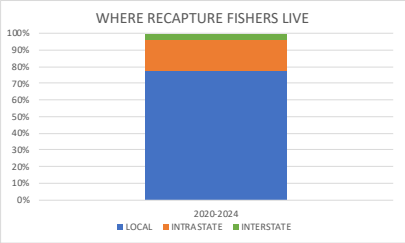
Tagging effort shift **Tagged fish (16,301)** **(red-orange heat map)** **Recaptured (146)** **Recapture rate (0.9%)** **(blue fish)** **2006-2015**	Tagging effort shift Tagged fish (12,936) (red-orange heat map) Recaptured (231) Recapture rate (1.8%) (blue fish) 2016-2025 2025 Jan-Jun
	

TRAVEL	ACTUAL	GRAPH or MAP
Cumulative distance (km) home to recapture location 2021-2025 2025 Jan-Jun	Year Dist 2021 16665 2022 9020 2023 18434 2024 10750 2025 Jan-Jun 6186	
Distance (km) from home to recapture location 2021-2025 2025 Jan-Jun		
Total travel distance (km) home to recapture location 2021-2025 2025 Jan-Jun	Year Dist 2021 16665 2022 9020 2023 18434 2024 10750 2025 Jan-Jun 6186	
Average distance (km) from home to recapture location 2021-2025 2025 Jan-Jun	Av distance (km) Local 24 Intrastate 1164 Interstate 2440	
Distance (km) home to recapture location Bars show distance range Dots show outliers 2021-2025 2025 Jan-Jun	Range (km) Local 1-69 Intrastate 80-2120 Interstate 2142-2797	

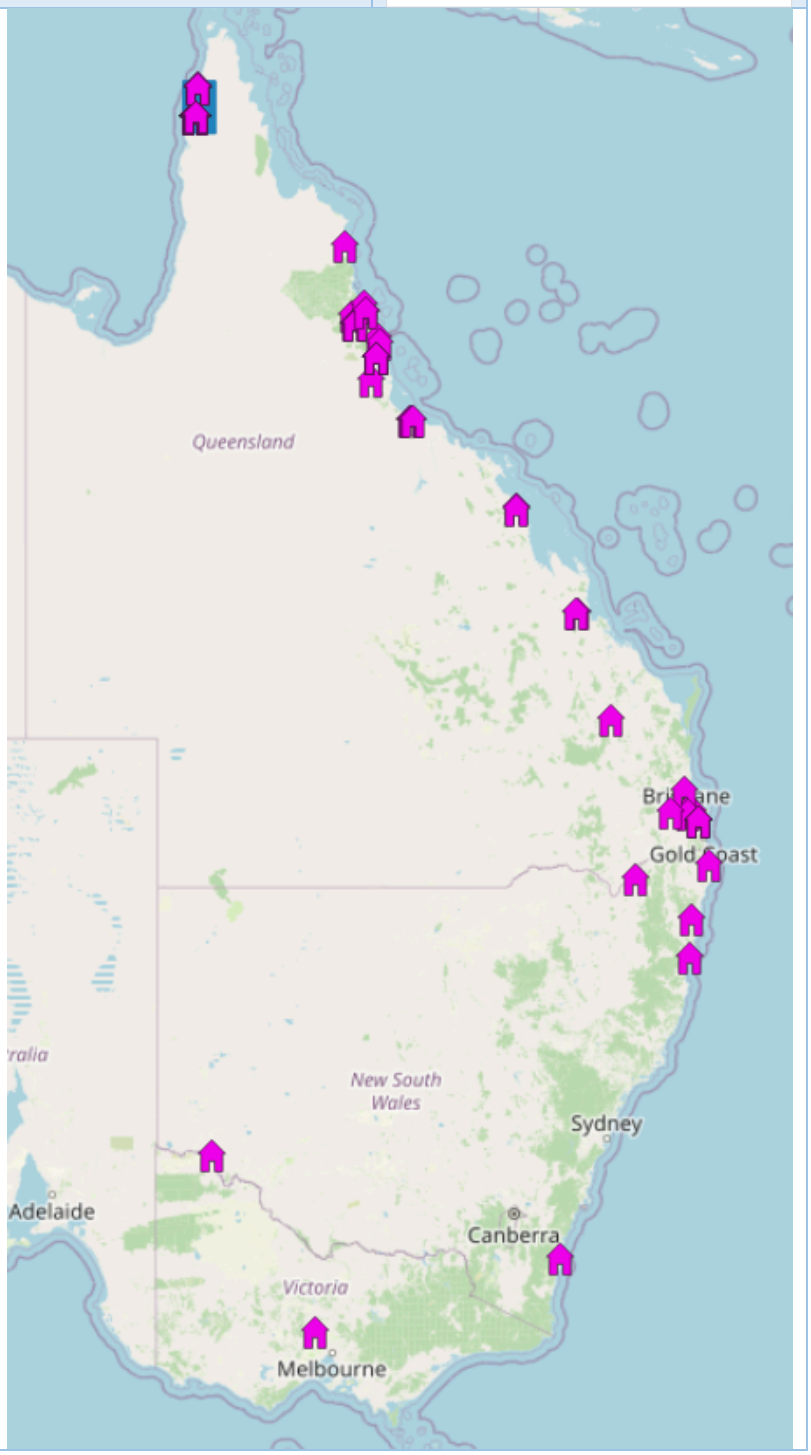
WHERE RECAPTURE FISHERS LIVE

Where recapture fishers live
2021-2025
2025 Jan-Jun

Recapture fishers	179
Local	135 (75%)
Intrastate	38 (21%)
Interstate	6 (3%)

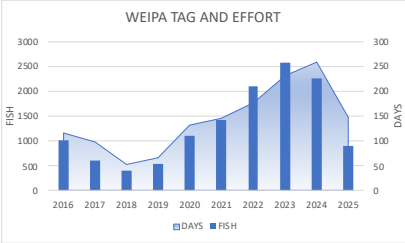
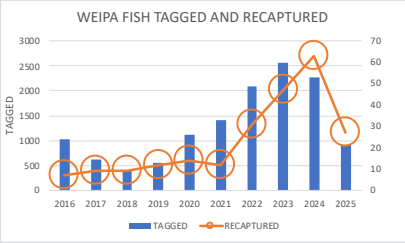
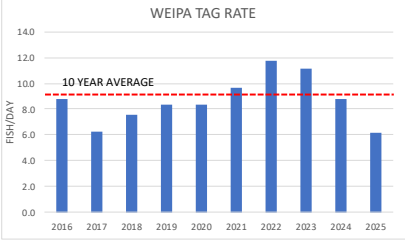


Weipa
Where fishers recapturing fish live (pink houses)
Local
Intrastate
Interstate
2021-2025
2025 Jan-Jun

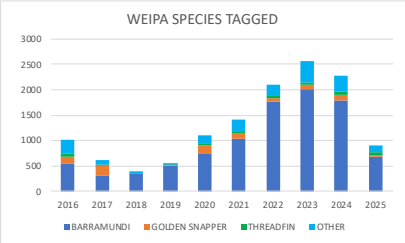
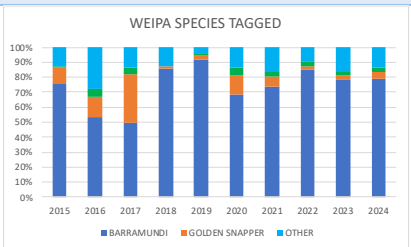


FISH	ACTUAL	GRAPH or MAP
BARRAMUNDI	GOLDEN SNAPPER	KING THREADFIN

TAGGED AND TAG RATE

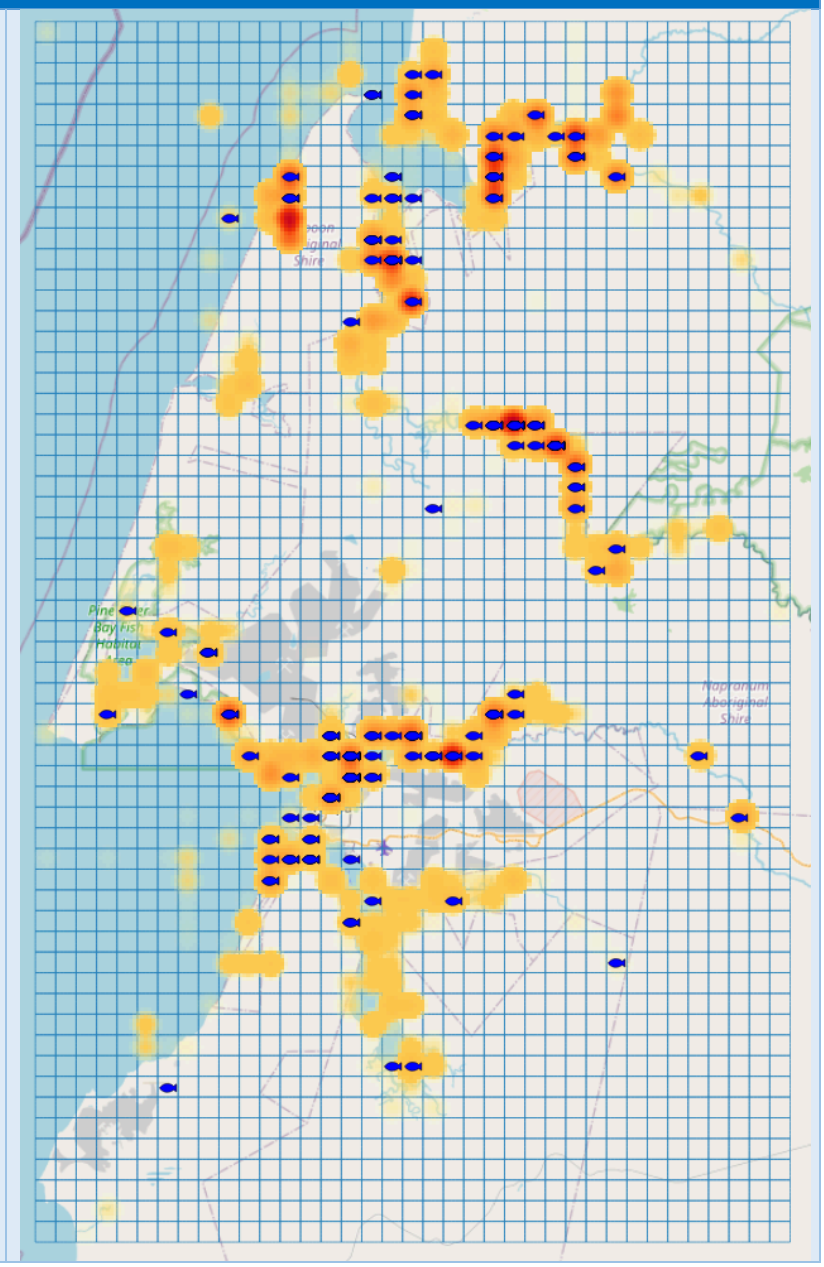
Tagging effort (days fished) and fish tagged **2016-2025** **2025 Jan-Jun**	High Low Now Fish tagged 2023 2018 2025 2564 401 902 Days fished 2024 2018 2025 259 53 147	
Fish tagged and recaptured **2016-2025** **2025 Jan-Jun**	Tagged Recaptured 12934 231 Recapture rate 1.8%	
Tag rate **Fish tagged/day** **2016-2025** **2025 Jan-Jun**	High Low Now Tag rate 2022 2017 2025 11.8 6.2 6.1 10 year average 9.1	

SPECIES

Species tagged **2016-2025** **2025 Jan-Jun**	Fish Tagged All fish 12934 Barramundi 9740 Golden Snapper 881 King Threadfin 413 Other species 1900	
Percentage species tagged **2016-2025** **2025 Jan-Jun**	Fish Percent Barramundi 75% Golden Snapper 7% King Threadfin 3% Combined 85%	

LOCATIONS

All fish
Tagged (12,934)
(red-orange heat map)
Recaptured (231)
(blue fish)
2021-2025
2025 Jan-Jun

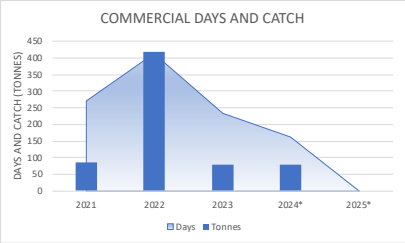


COMMERCIAL

Commercial effort and catch
Net fishery (all)
Days
Catch (tonnes)
2021-2025

Year	Days	Catch
2021	272	87.37
2022	413	416.63
2023	234	79.29
2024*	162	79.25
2025*	NA	NA

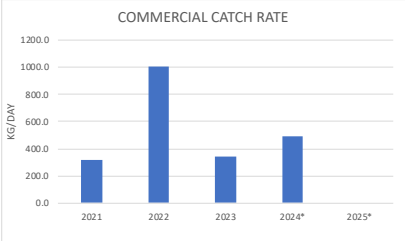
*incomplete



Commercial catch rate Kg/day
2021-2025

Year	Kg/day
2021	321.2
2022	1008.8
2023	338.8
2024*	492.3
2025*	NA

*Incomplete



BARRAMUNDI	ACTUAL	GRAPH or MAP

DATA RELIABILITY

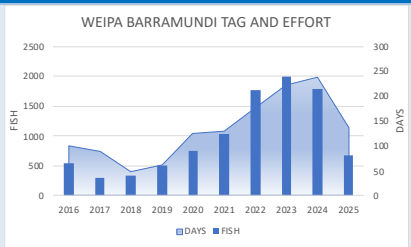
Sample size (fish/year)
Tagged (blue arrow)
Recaptures (orange arrow)
Confidence %
Error %
2021-2025

Reliability level	LOW		MODERATE	MODERATE		HIGH
Samples	10	41	68	271	384	664
Confidence	80%	80%	90%	90%	95%	99%
Error	20%	10%	10%	5%	5%	5%

TAGGED AND TAG RATE

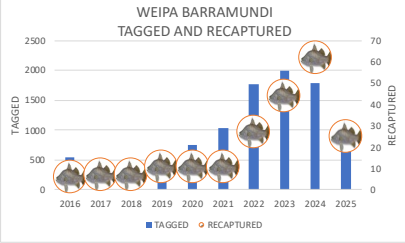
Tagging effort (days fished) and fish tagged
2016-2025
2025 Jan-Jun

High	Low	Now
Fish tagged		
2023	2017	2025
2002	306	680
Days fished		
2024	2018	2025
239	48	136



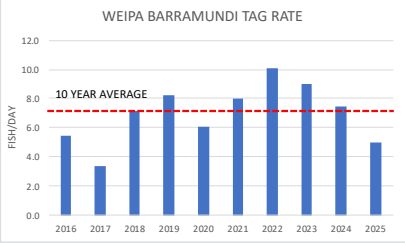
Barramundi tagged and recaptured
2016-2025
2025 Jan-Jun

Tagged	Recaptured
9740	211
Recapture rate	
2.2%	
Tagged 2025 Jan-Jun	
680	

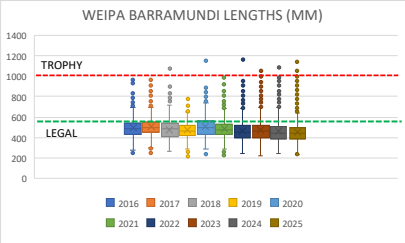
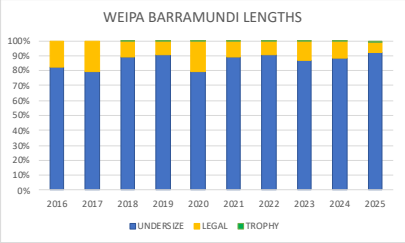


Tag rate
Barramundi
Fish/day
2016-2025
2025 Jan-Jun

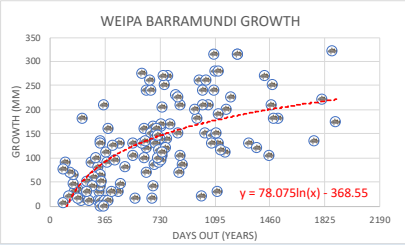
High	Low	Now
Tag rate		
2022	2017	2025
10.1	3.4	5.0
	10 year average	7.3



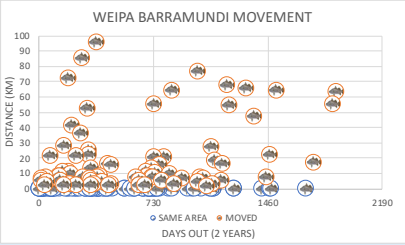
LENGTHS

Average length (mm) **Bars show length range** **Dots show outliers** **2016-2025** **2025 Jan-Jun**	High Average length 2017 510 Largest 2022 1160	Low 2022 462 2019 810	Now 2025 456 2024 1140	
Fish lengths percentage **Undersize <580mm** **Legal 580-1000mm** **Trophy 1000+mm** **2016-2025** **2025 Jan-Jun**	High Legal-trophy 2020 21% Trophy 2019 0.4%	Low 2019 9% 2018 0%	Now 2025 7% 2025 0.9%	

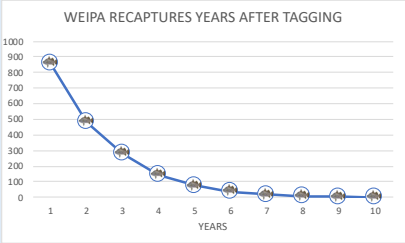
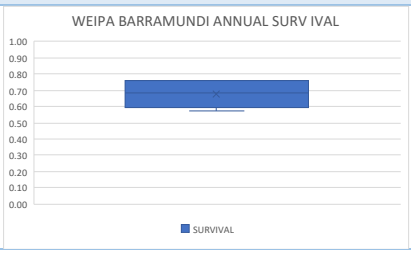
GROWTH

Barramundi growth at the end of each year based on recaptures of tagged fish **2016-2025** **2025 Jan-Jun**	Recaptures Growth end of year (mm) Year 1 Year 2 Year 3 Year 4 Year 5	129 92 146 178 200 218	

MOVEMENT

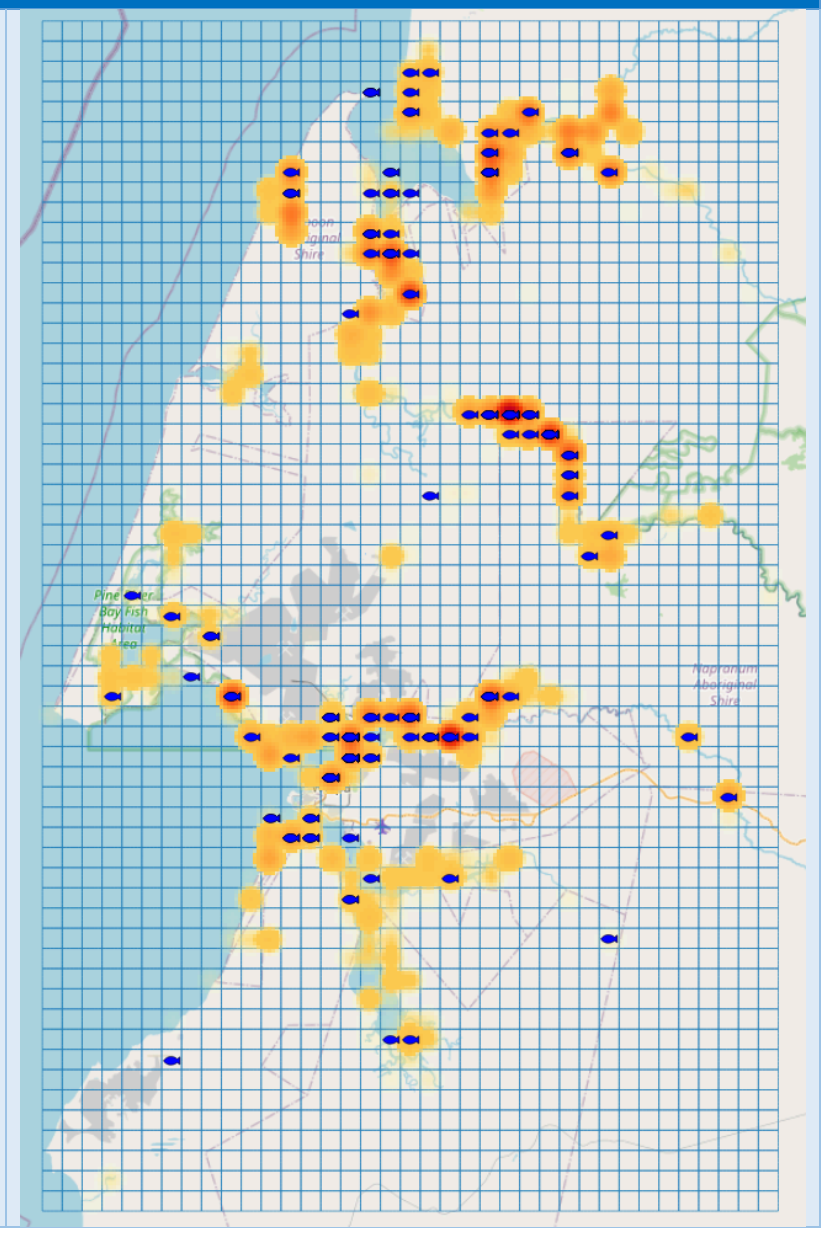
Barramundi movements within rivers and creeks distance moved (km) recaptures **2016-2025** **2025 Jan-Jun**	Recaptures Same area Moved Furthest moved	194 116 (60%) 78 (40%) 95km	

SURVIVAL

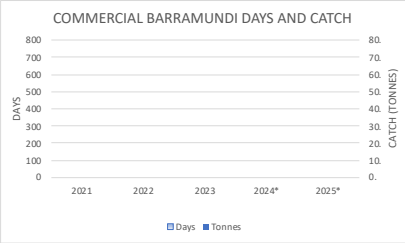
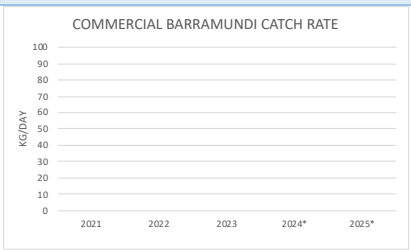
Years survival after tagging **All years**	Year 1 2 5 10 Longest time out 10.0 years	Recaps 859 484 76 1	
Survival rates each year after tagging **All years**	Average survival each year 0.66 (66%) Range 0.76-0.57		

LOCATIONS

Barramundi
Tagged (9,740)
(red-orange heat map)
Recaptured (211)
(blue fish)
2016-2025
2025 Jan-Jun



COMMERCIAL

Commercial Barramundi catch Net fishery Days Catch (tonnes) 2021-2025	Year	Days	Catch	
	2021	NA	NA	
	2022	NA	NA	
	2023	NA	NA	
	2024*	NA	NA	
	2025*	NA	NA	
	*incomplete			
Commercial Barramundi catch rate Kg/day 2021-2025	Year		Kg/day	
	2021		NA	
	2022		NA	
	2023		NA	
	2024*		NA	
	2025*		NA	
	*incomplete			

GOLDEN SNAPPER	ACTUAL	GRAPH or MAP

DATA RELIABILITY

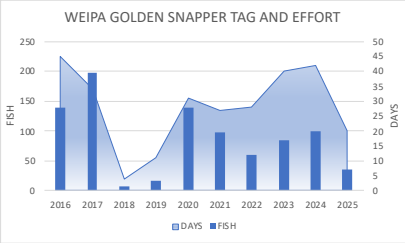
Sample size (fish/year)
Tagged (blue arrow)
Recaptures (orange arrow)
Confidence %
Error %
2021-2025

Reliability level	LOW		MODERATE	MODERATE		HIGH
Samples	10	41	68	271	384	664
Confidence	80%	80%	90%	90%	95%	99%
Error	20%	10%	10%	5%	5%	5%

TAGGED AND TAG RATE

Tagging effort (days fished) and fish tagged
2016-2025
2025 Jan-Jun

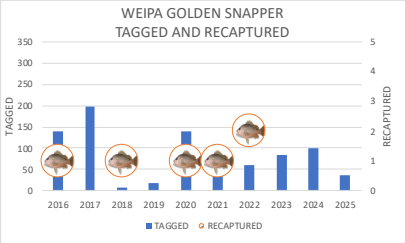
High	Low	Now
Fish tagged		
2017	2018	2025
198	8	36
Days fished		
2016	2018	2025
45	4	20



Golden Snapper tagged and recaptured
2016-2025
2025 Jan-Jun

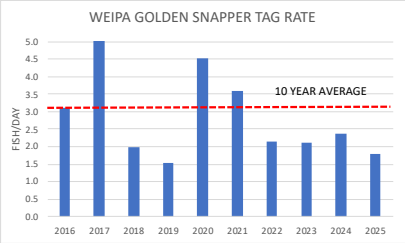
Tagged	Recaptured
881	6

Recapture rate
0.7%
Tagged 2025 Jan-Jun
36

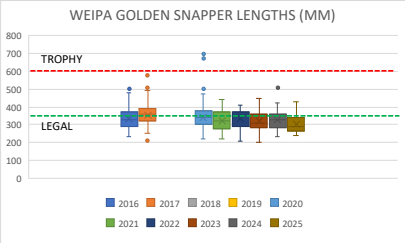
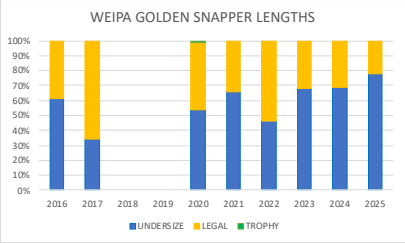


Tag rate
Golden Snapper
Fish/day
2016-2025
2025 Jan-Jun

High	Low	Now
Tag rate		
2017	2019	2025
5.8	1.5	1.8
10 year average		3.1

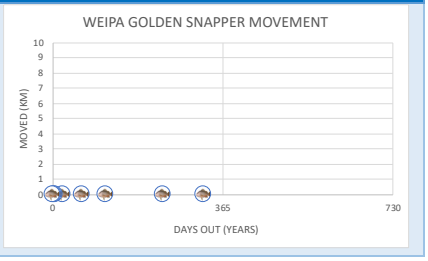


LENGTHS

Average length (mm)	High	Low	Now	
Bars show length range	Average length			
Dots show outliers	2017	2023	2025	
2016-2025	356	319	305	
2025 Jan-Jun	Largest			
	2020	2022	2025	
	700	410	430	
Fish lengths percentage	High	Low	Now	
Undersize <350mm	Legal-trophy			
Legal 350-600mm	2017	2024	2025	
Trophy 600+mm	66%	31%	22%	
2016-2025	Trophy			
2025 Jan-Jun	2020	21-24	2025	
	1%	0%	0%	

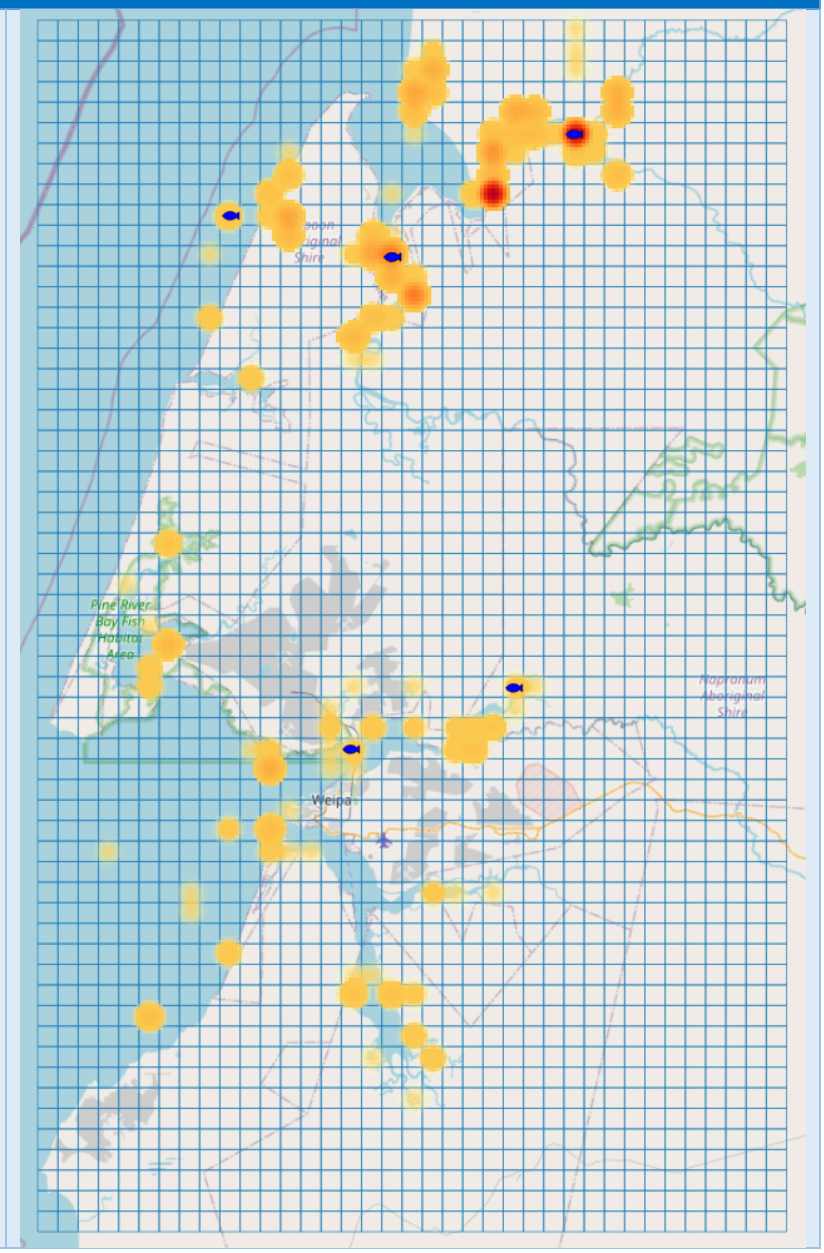
MOVEMENT

Golden Snapper movement	Recaptures	6
Distance moved (km)	Same area	6 (100%)
2016-2025	Longest time out	
2025 Jan-Jun	323 days (0.9 year)	



LOCATIONS

Golden Snapper
Tagged (881) (red-orange heat map)
Recaptured (6) (blue fish)
2016-2025
2025 Jan-Jun



KING THREADFIN	ACTUAL	GRAPH or MAP

DATA RELIABILITY

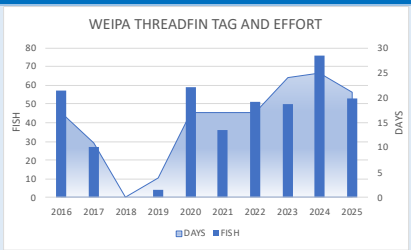
Sample size (fish/year)
Tagged (blue arrow)
Recaptures (orange arrow)
Confidence %
Error %
2021-2025

Reliability level	LOW		MODERATE	MODERATE		HIGH
Samples	10	41	68	271	384	664
Confidence	80%	80%	90%	90%	95%	99%
Error	20%	10%	10%	5%	5%	5%

TAGGED AND TAG RATE

Tagging effort (days fished) and fish tagged
2016-2025
2025 Jan-Jun

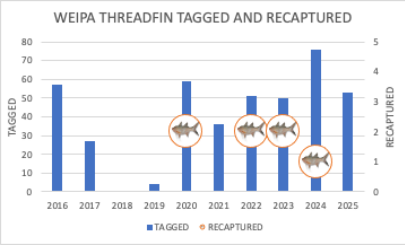
	High	Low	Now
Fish tagged			
	2024	2018	2025
	76	0	53
Days fished			
	2024	2018	2025
	25	0	21



Threadfin tagged and recaptured
2016-2025
2025 Jan-Jun

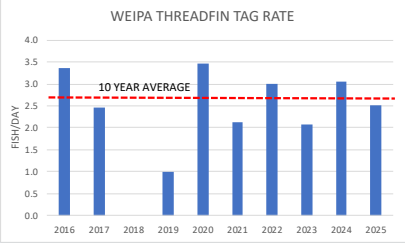
Tagged	Recaptured
413	7

Recapture rate
1.7%
Tagged 2025 Jan-Jun
53

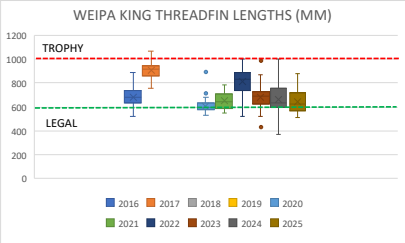
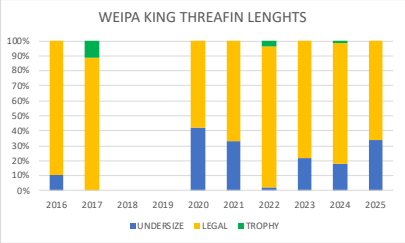


Tag rate
Threadfin
Fish/day
2016-2025
2025 Jan-Jun

	High	Low	Now
Tag rate			
	2020	2018	2025
	3.5	0	2.5
		10 year average	2.7

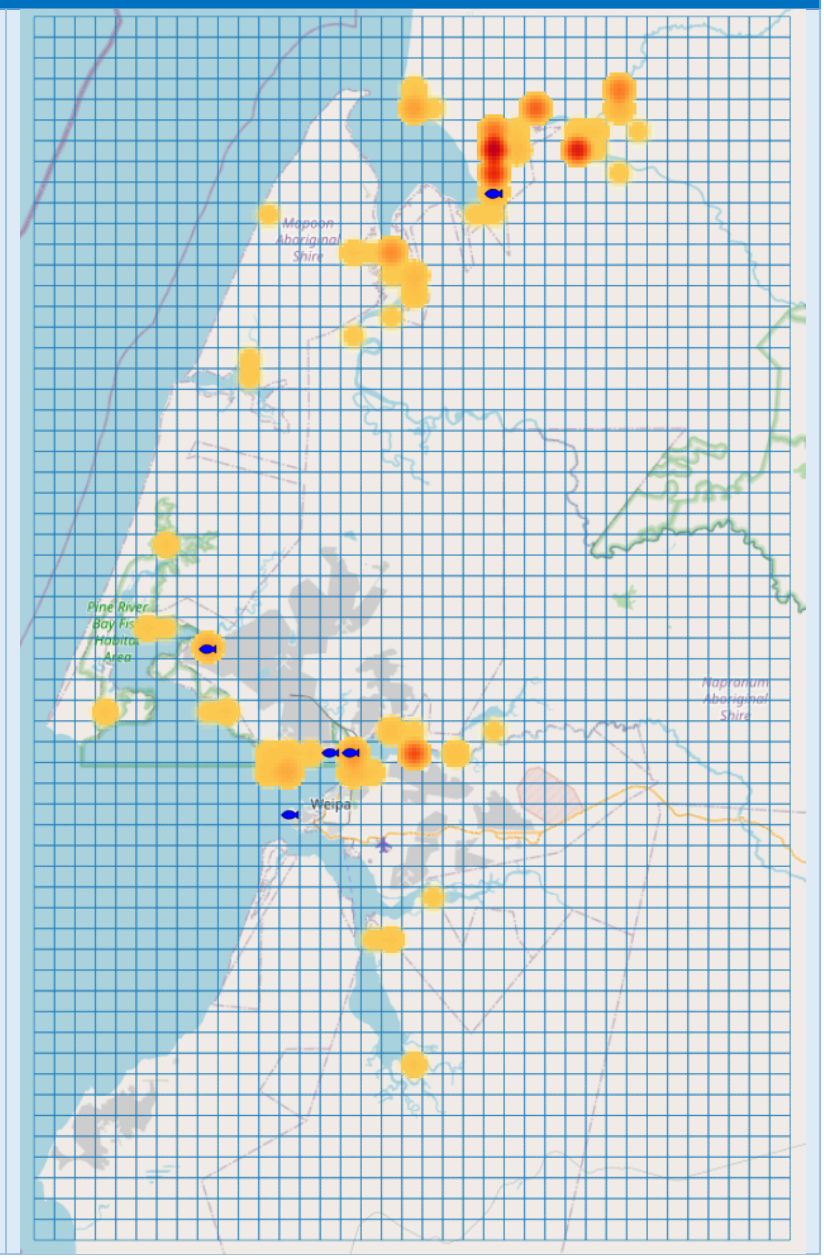


LENGTHS

Average length (mm)	High	Low	Now	
Bars show length range	Average length			
Dots show outliers	2017	2020	2025	
2016-2025	908	610	644	
2025 Jan-Jun	Largest			
	2017	2021	2025	
	1070	790	880	
Fish lengths percentage	High	Low	Now	
Undersize <650mm	Legal-trophy			
Legal 650-1000mm	2017	2020	2025	
Trophy 1000+mm	89%	58%	66%	
2016-2025	Trophy			
2025 Jan-Jun	2017	2023	2025	
	11%	0%	0%	

LOCATIONS

King Threadfin
Tagged (413)
(red-orange heat map)
Recaptured (7)
(blue fish)
2016-2025
2025 Jan-Jun



Data sources

Data used in the Weipa Crystal Bowl are:

- Tag records and recapture records for the area at http://crystalbowl.infofishaustralia.com.au/.
- Commercial catch data from https://qfish.fisheries.qld.gov.au/.
- Weipa rainfall and temperature from Station 27042 Weipa at http://www.bom.gov.au/.

Basis for analysis

- Data reliability for fishers based on the sample size over the past 5 years for days fished by taggers and by fishers recapturing fish.
- Data reliability for fish based on average number of fish tagged and recaptured per year over the past 5 years.
- Tag rates calculated as number of fish tagged/day for taggers with a minimum of 12 fisher days (at least 1 per month) to provide an indicative tag rate.
- For Barramundi undersized fish are <580mm, legal fish are >=580 and <1000mm and trophy fish are >1000mm.
- For Golden Snapper undersized fish are <350mm, legal fish are >=350 and <600mm and trophy fish are >=600mm.
- For King Threadfin undersized fish are <600mm, legal fish are >=600 and <1000mm and trophy fish are >=1000mm.
- Growth calculated using a logarithmic or linear trendline from recaptures where fish were out for 90 days or more and had positive growth.
- Locations based on Infofish grid map WAB and other grid maps where fish were recaptured outside the area.
- Movement distance calculated as the shortest distance by water from the tag to the recapture location.
- Travel proxy Local <80km, >80km Qld elsewhere, Not Qld Interstate