



MACKAY REGION REVIEW 2025

INFORMATION RATING



Key species: Barramundi, Dusky Flathead, Goldspotted and Blackspotted Rockcod, Barred Javelin

Fish timeframe: 2016-2025

Fisher timeframe: 2021-2025

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KEY SPECIES

COMMERCIAL CATCH

BARRAMUNDI

FLATHEAD

JAVELIN (GRUNTER)



Product of Infofish Australia



Supported by Suntag and
Department of Agriculture and Fisheries



MACKAY REGION OVERVIEW

Summary of 2025

- Tagging continued in the Mackay region in 2025 with an additional 862 fish tagged and 81 recaptures.
- The area is mainly fished by locals and is predominantly a harvest fishery.

The Mackay fishing region goes from St Helens Bay in the north to Cape Palmerston in the south cover around 120km of the coast. Fishing activity in the region is mostly by local fishers (93% of recaptures) throughout the year with a peak in Feb and Mar at the start of the Barramundi open season and a smaller peak in Oct before the end of the season.

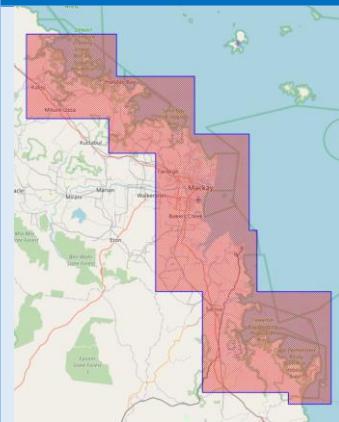
There were just 6% of fishers from intrastate and none from interstate. This could be a reflection of the local stocked lakes of Kinchant, Teemburra and Eungella being more attractive to visiting fishers than the local estuaries.

The fishery tends to be a harvest fishery with a harvest rate of 65% of legal recaptured fish (ex-taggers) and a harvest rate of 58% for Barramundi. This compares with a harvest rate of 0% in Lakes Kinchant and Teemburra which are almost completely experiential.

Tagging in the Mackay area has been continuous since the 1990s with taggers mostly targeting Barramundi, Flathead, and Javelin to a lesser extent. Goldspotted Rockcod and Blackspotted Rockcod are mostly tagged as an incidental catch.

Tagging effort and numbers of fish tagged were low from 100-200 prior to the NFZ but have mostly ranged from 500-1000 since then. The overall recapture rate of 8.8% is a little above the state average of 7-8%. Taggers appear to have been more active in the NFZ area in the past 5 years than in other parts of the region.

MACKAY ESTUARIES LOCATION



St Helens Beach
20.83°S
148.84°E

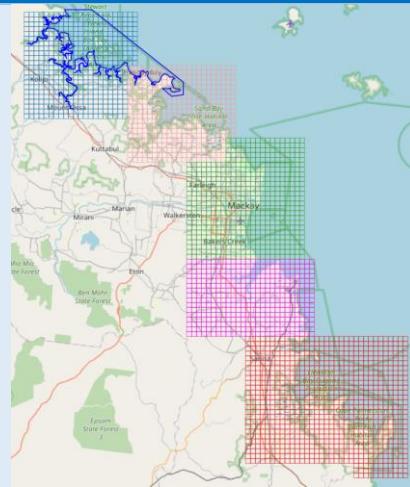
Sarina
21.42°S
149.22°E



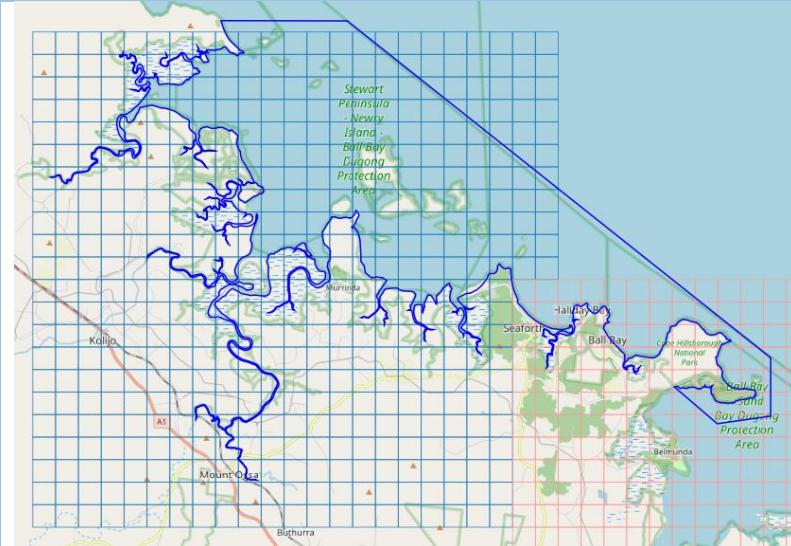
WATERWAYS

Mackay estuaries grid maps
St Helens Bay (SHB)
Cape Hillsborough (CHM)
Mackay (MKY)
Hay Point (HPM)
Sarina (SRN)
Net Free Zone (blue outline)

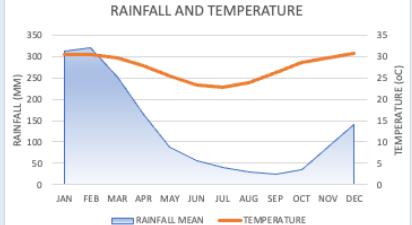
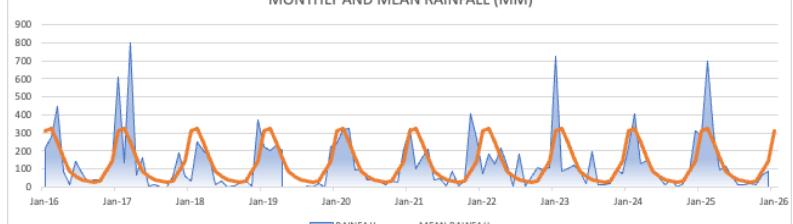
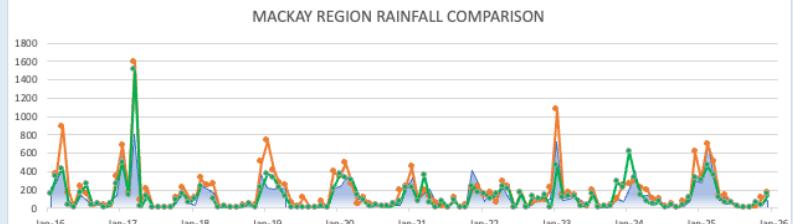
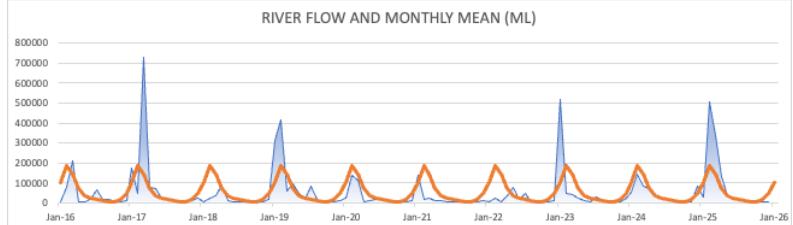
Murray Creek
 Seaforth Creek
 Constant Creek
 Pioneer River
 Bakers Creek
 Sandy Creek
 Alligator Creek
 Plane Creek
 Boundary Creek
 Rocky Dam Creek
 Cape Creek



Mackay Net Free Zone



ENVIRONMENTAL CONDITIONS

Mackay monthly mean rainfall (mm) and temperature	<table border="1"> <thead> <tr> <th></th><th>Rainfall</th><th>Month</th><th>mm</th></tr> </thead> <tbody> <tr> <td>High</td><td>Feb</td><td>320</td></tr> <tr> <td></td><td>Jan</td><td>312</td></tr> <tr> <td>Temp</td><td>Month</td><td>oC</td></tr> <tr> <td>High</td><td>Nov-Mar</td><td>30</td></tr> </tbody> </table>		Rainfall	Month	mm	High	Feb	320		Jan	312	Temp	Month	oC	High	Nov-Mar	30	 <p>RAINFALL AND TEMPERATURE</p> <p>RAINFALL [MM] TEMPERATURE [oC]</p> <p>JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC</p> <p>RAINFALL MEAN TEMPERATURE</p>
	Rainfall	Month	mm															
High	Feb	320																
	Jan	312																
Temp	Month	oC																
High	Nov-Mar	30																
Mackay monthly rainfall Mean monthly rainfall Wet season Dec-Mar 2016-2025	 <p>MONTHLY AND MEAN RAINFALL (MM)</p> <p>RAINFALL MEAN</p> <p>Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21 Jan-22 Jan-23 Jan-24 Jan-25 Jan-26</p>																	
Regional rainfall Mackay (blue) Jukes north (orange) Koumala south (green) 2016-2025	 <p>MACKAY REGION RAINFALL COMPARISON</p> <p>MACKAY JUKES KOUMALA</p> <p>Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21 Jan-22 Jan-23 Jan-24 Jan-25 Jan-26</p>																	
Pioneer River flow (ML) 2016-2025	 <p>RIVER FLOW AND MONTHLY MEAN (ML)</p> <p>FLOW MEAN FLOW</p> <p>Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21 Jan-22 Jan-23 Jan-24 Jan-25 Jan-26</p>																	

TYPE OF FISHERY

DATA RELIABILITY

Sample size (days fished)

Tag days (blue arrow)

Recaptures (orange arrow)

Confidence %

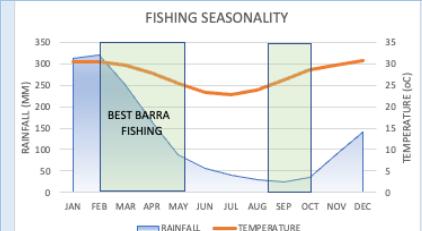
Error %

2021-2025

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

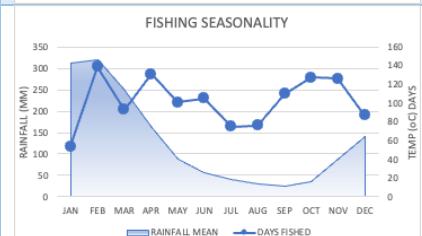


Seasonality
Best Barramundi fishing
Feb-May
Sep-Oct



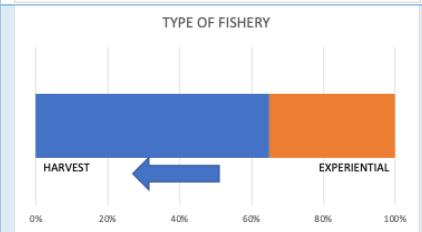
Mean monthly rainfall
Days fished combined
Taggers
Recapture fishers
2021-2025

Months most effort
Days fished
Feb
Apr
Oct
Nov



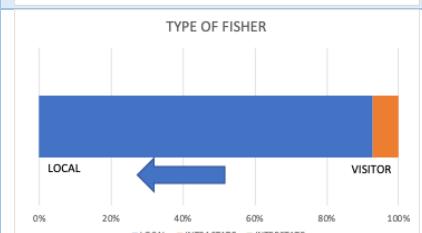
Harvest or experiential
fishery
Release rate of recaptured
key species legal fish
2021-2025

Legal fish kept rate
Legal fish 126
Kept 82 (65%)
Released 44 (35%)



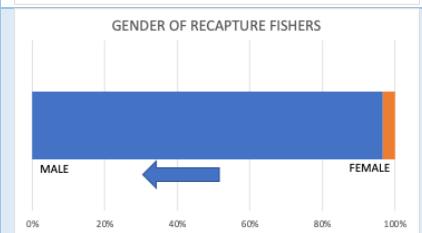
Local or visitor fishery
Where recapture fishers
live
2021-2025

Recapture fishers 290
Local 269 (93%)
Visitor 21 (7%)



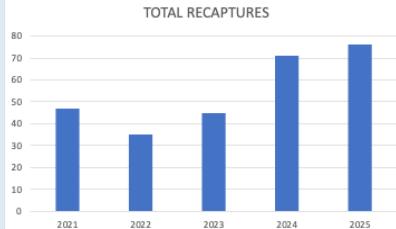
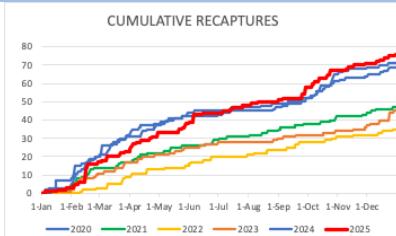
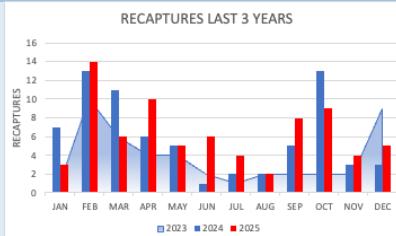
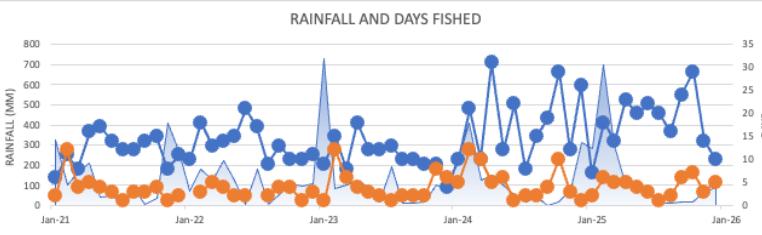
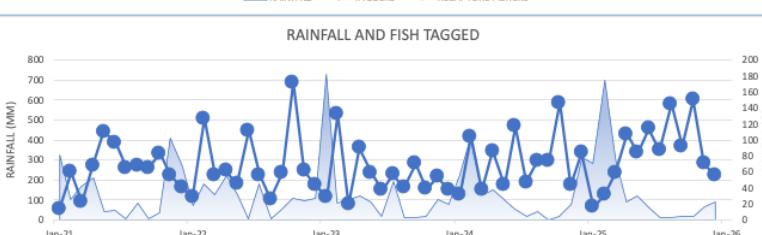
Gender of recapture
fishers (ex-taggers)
2021-2025

Recaptures 236
Female 8 (3%)
Male 228 (97%)



FISHER ACTIVITY

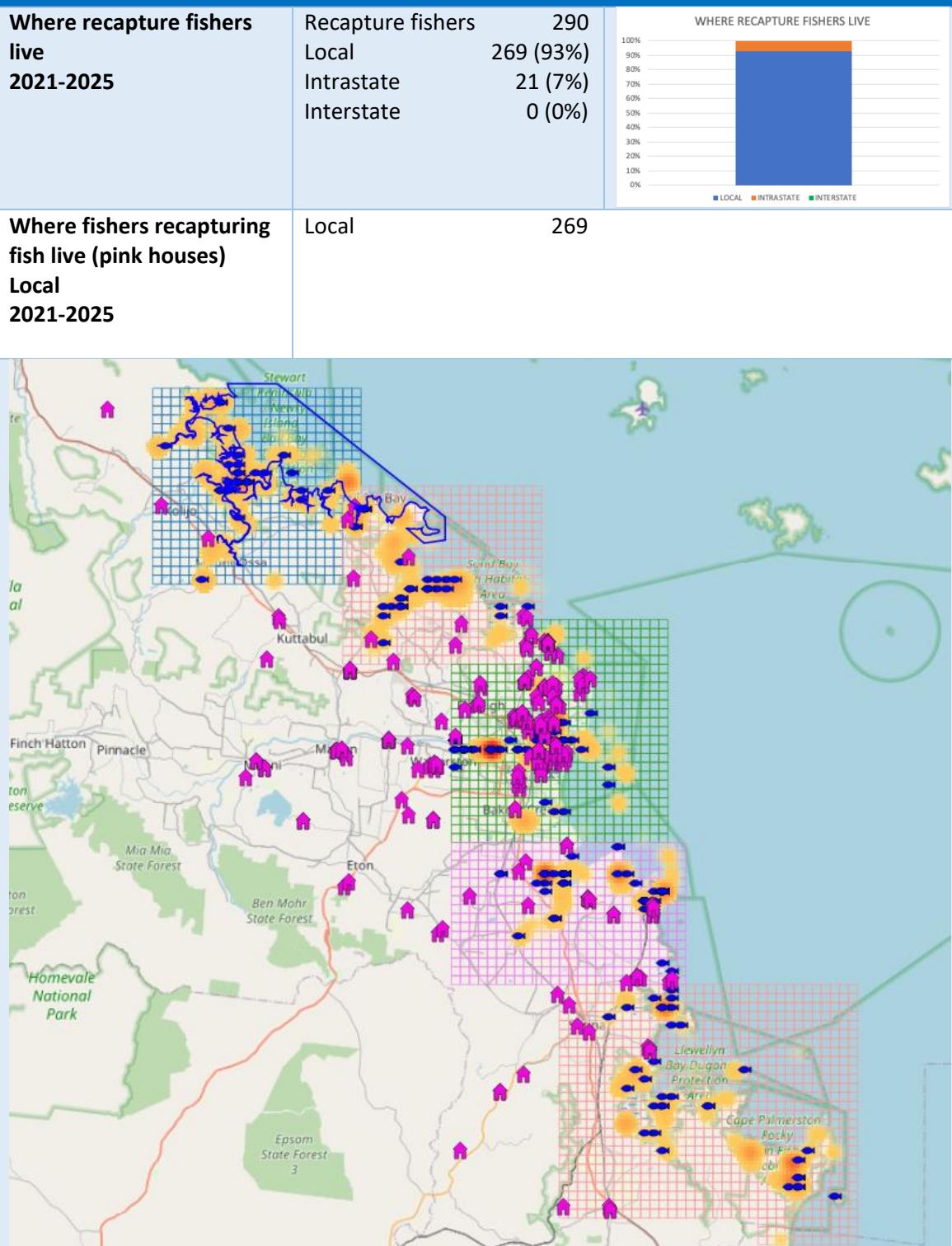
FISHER EFFORT

Total recaptures 2021-2025	Year 2021 2022 2023 2024 2025	Recaps 47 35 45 71 76	
Cumulative recaptures 2021-2025			
Recaptures by month 2023-2025	Recaptures peak Feb start of Barra season Oct end of Barra season		
Fisher effort Mackay rainfall (mm) Days fished Taggers 2021-2025			
Mackay rainfall and fish tagged 2016-2025			

FISHER TRAVEL

Total proxy travel distance (km) where fishers live to recapture location 2021-2025	Year	Km	
	2021	1891	
	2022	2292	
	2023	1248	
	2024	2281	
Cumulative distance (km) where fishers live to recapture location 2021-2025			
Cumulative distance (km) where fishers live to recapture location	Distance <400km		
	LOCAL	17	
	INTRASTATE	314	
	INTERSTATE	-	
Average travel proxy distance (km) home to recapture location 2021-2025	Av distance (km)		
	Local	17	
	Intrastate	314	
	Interstate	-	
Distance (km) home to recapture location Local Intrastate Interstate 2021-2025	Range (km)		
	1-69		
	80-850		
	-		

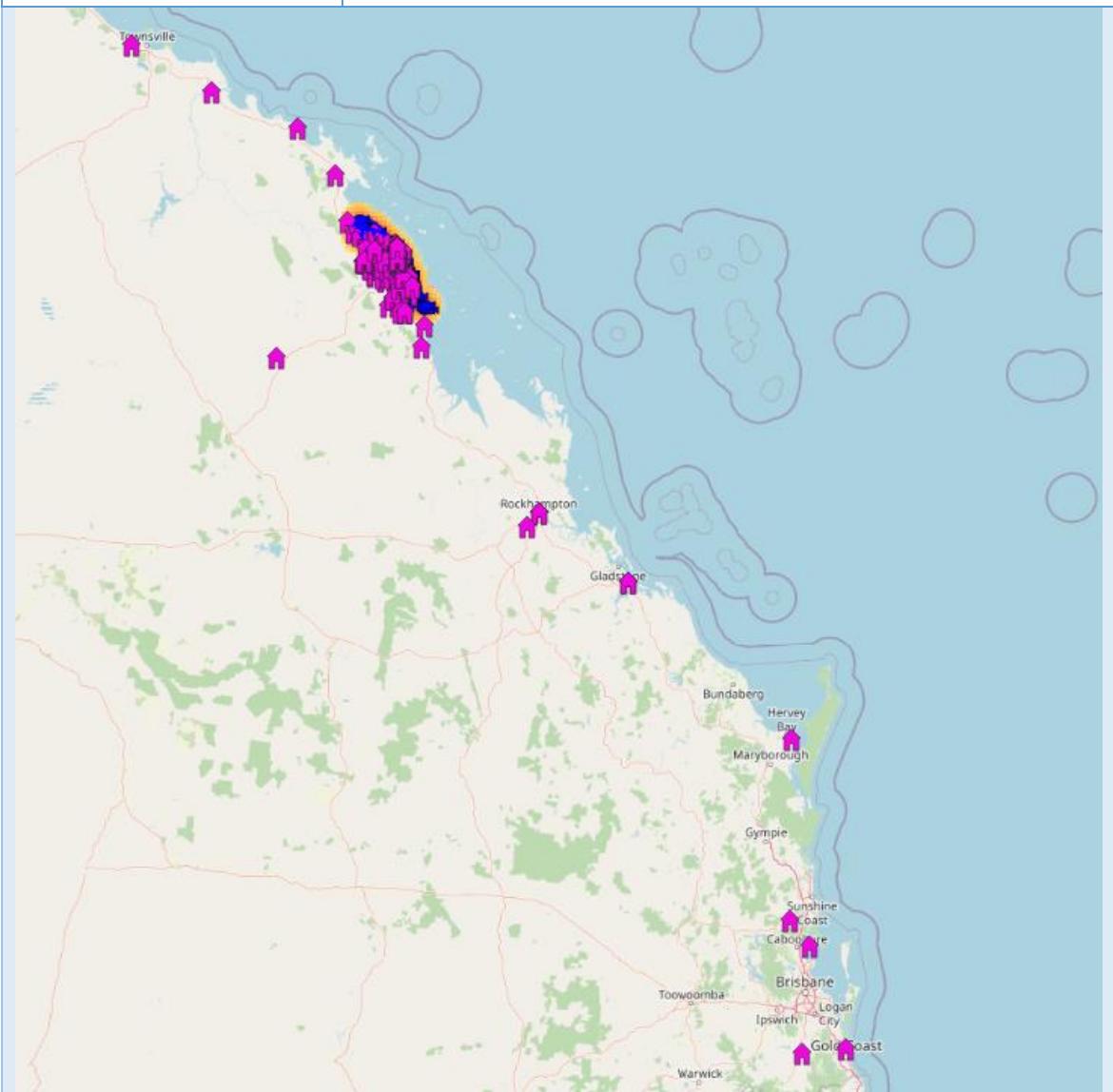
WHERE RECAPTURE FISHERS LIVE



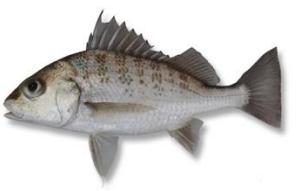
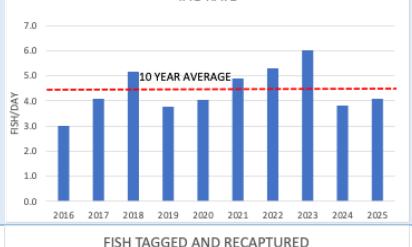
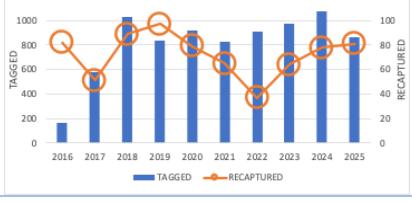
**Where fishers recapturing
fish live (pink houses)**
Intrastate
Interstate
2021-2025

Intrastate
Interstate

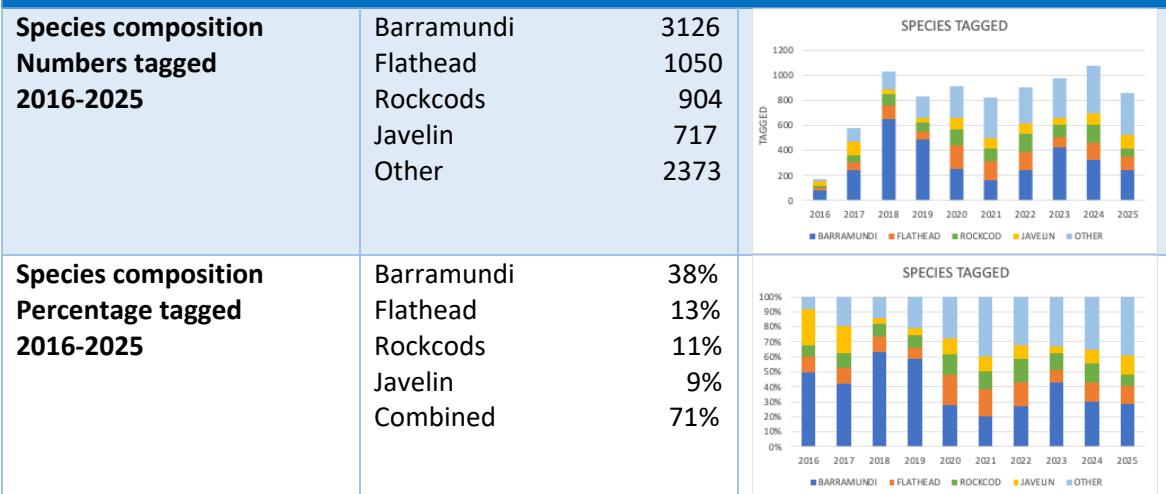
21
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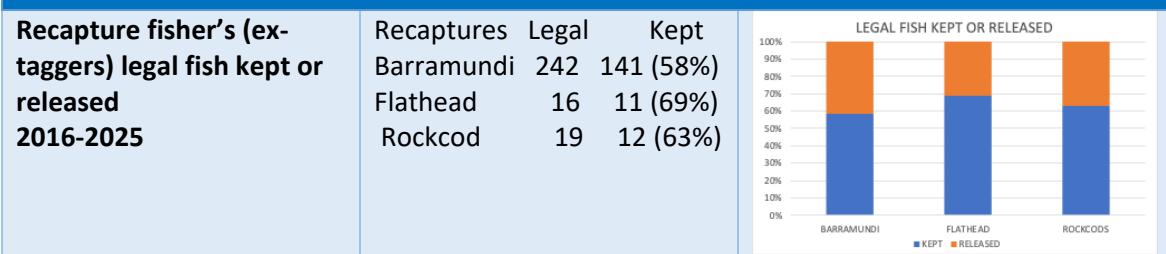
KEY SPECIES

BARRAMUNDI	DUSKY FLATHEAD	BARRED JAVELIN		
				
GOLDSPOTTED ROCKCOD and BLACKSPOTTED ROCKCOD				
				
TAGGED AND TAG RATE				
Tag and effort taggers Number of tagged fish Tag days 2016-2025	High Tagged 2020 835 Days fished 2020 210	Low 2016 120	Now 2025 320	
Tag rate Fish/day 2016-2025	High Tag rate 2021 5.1	Low 2016 2.1	Now 2025 3.5	
Fish tagged Recaptured 2016-2025	Tagged Recaptured Recapture rate Tagged 2025 Recaptured 2025	8170 723 8.8% 862 81		

SPECIES



FATE

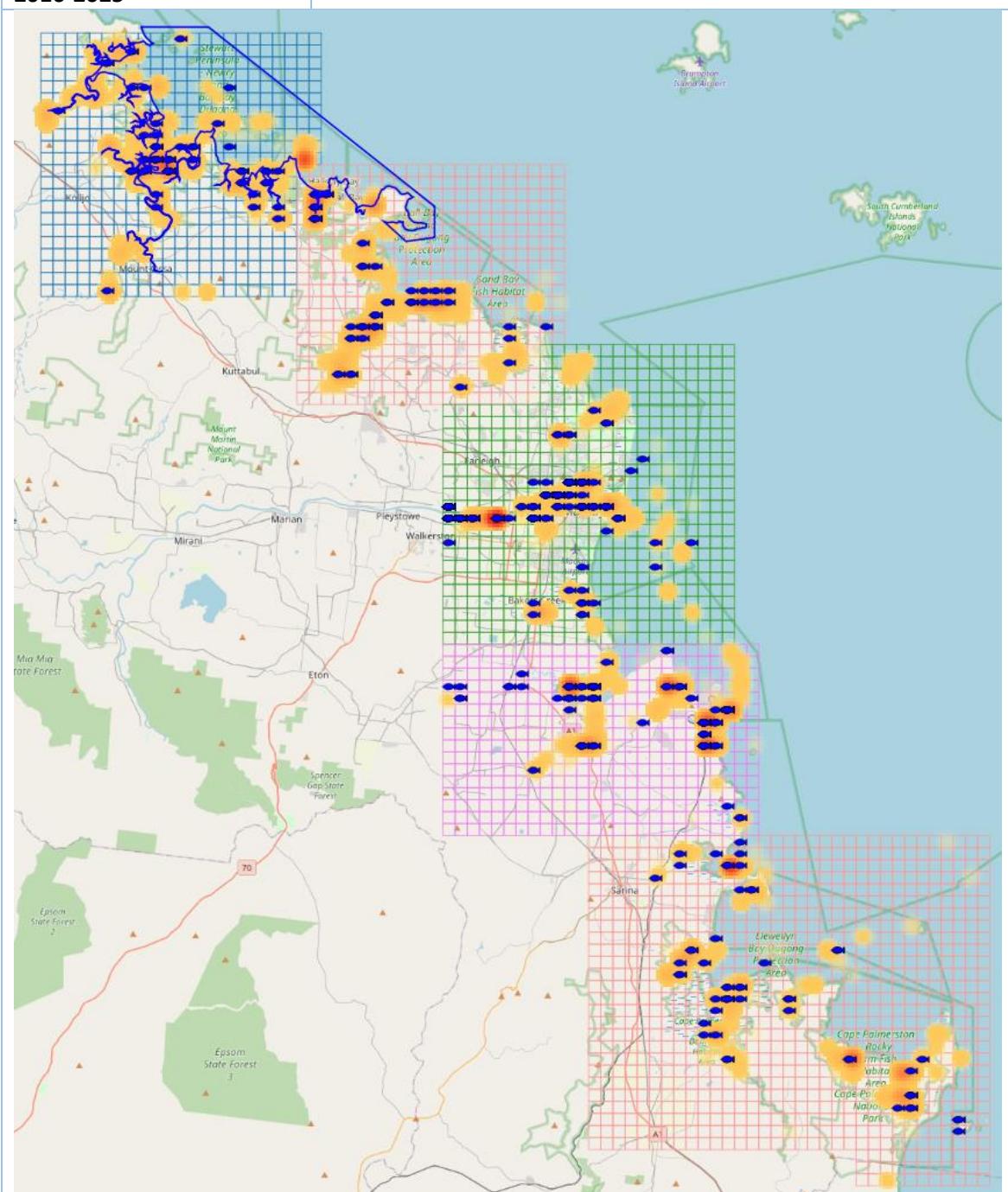


LOCATIONS

Fisher location activity
Taggers (red-orange heat map)
Recapture fishers (blue fish)
2016-2025

Tagged
Recaptured

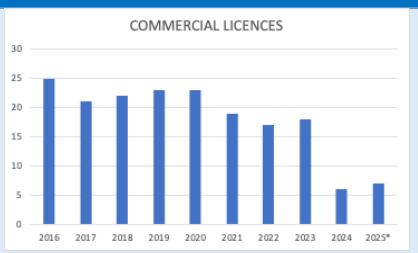
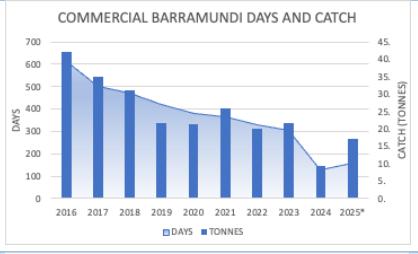
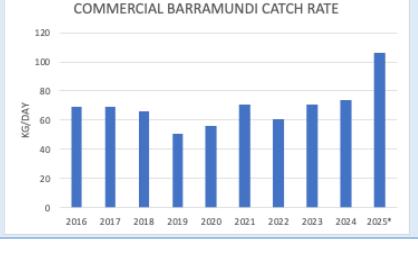
8170
723



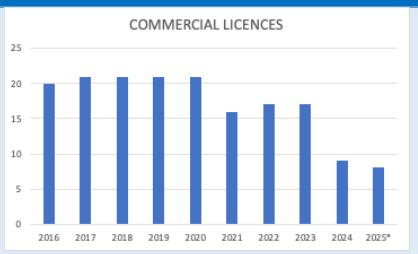
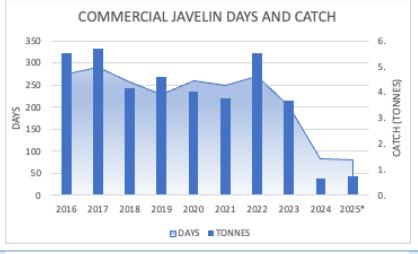
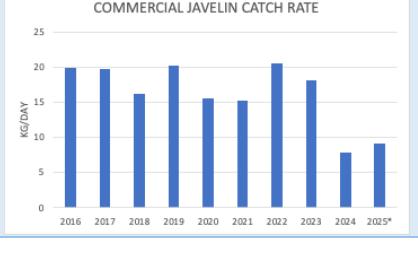
COMMERCIAL CATCH

Commercial QFISH grids	Grids N24 (Net Free Zone) O24 O25 O26	
NET CATCH ALL		
Commercial licences Grids combined Grids N24, O24, O25, O26 2016-2025	Year 2016 2020 2024 2025* <i>*incomplete</i>	Licences 31 28 11 10
Commercial effort and catch Net fishery (all) Grids N24, O24, O25, O26 Days Catch (tonnes) 2016-2025	Year 2016 2020 2024 2025* <i>*incomplete</i>	Days 1123 750 194 186 Catch 120.6 128.6 28.8 32.9
Commercial catch rate Net fishery (all) Grids N24, O24, O25, O26 Kg/day 2016-2025	Year 2016 2020 2024 2025* <i>*incomplete</i>	Kg/day 107.4 171.4 148.5 177.0

BARRAMUNDI

Commercial licences Grids combined Grids N24, O24, O25, O26 2016-2025	Year	Licences	
	2016	25	
	2020	23	
	2024	6	
	2025*	7	
*incomplete			
Commercial effort and catch Net fishery (all) Grids N24, O24, O25, O26 Days Catch (tonnes) 2016-2025	Year	Days	
	2016	612	42.2
	2020	379	21.4
	2024	127	9.3
	2025*	161	17.1
*incomplete			
Commercial catch rate Net fishery (all) Grids N24, O24, O25, O26 Kg/day 2016-2025	Year	Kg/day	
	2016	69.0	
	2020	56.3	
	2024	73.5	
	2025*	106.3	
*incomplete			

JAVELIN (GRUNTER)

Commercial licences Grids combined 2016-2025	Year	Licences	
	2016	20	
	2020	21	
	2024	9	
	2025*	8	
*incomplete			
Commercial effort and catch Net fishery Grids N24, O24, O25, O26 Days Catch (tonnes) 2016-2025	Year	Days	
	2016	276	5.5
	2020	260	4.0
	2024	84	0.7
	2025*	81	0.7
*incomplete			
Commercial catch rate Net fishery (all) Grids N24, O24, O25, O26 Kg/day 2016-2025	Year	Kg/day	
	2016	20.0	
	2020	15.5	
	2024	7.9	
	2025*	9.1	
*incomplete			

BARRAMUNDI



DATA RELIABILITY

Sample size (fish/year)

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

Tagged (blue arrow)

Recaptures (orange arrow)

Confidence %

Error %

2021-2025



TAGGED AND TAG RATE

Catch and effort taggers

High Low Now

number of tagged fish

Tagged

days fished

2018 2016 2025

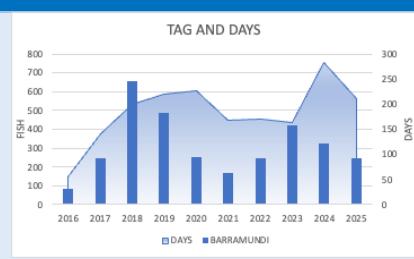
2016-2025

653 84 247

Days fished

2024 2016 2025

283 56 212



Tag rate

High Low Now

Fish/day

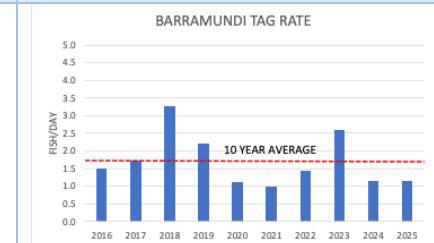
Tag rate

2016-2025

2018 2021 2025

3.3 1.0 1.2

10 year average



Fish tagged (all) and

3126

recaptured

Recaptured

586

2016-2025

Recapture rate

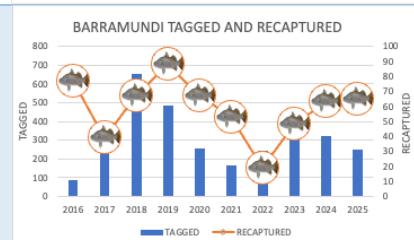
18.7%

Tagged 2025

653

Recaptured 2025

65



LENGTHS

Average length (mm) Bars show length range Dots show outliers 2016-2025	High	Low	Now	
	Average length			
	2016	2022	2025	
	703	494	608	
	Max			
	2019	2022	2025	
	1200	800	970	
Fish lengths percentage Undersize <580mm Legal 580-1000mm Trophy 1000+mm 2016-2025	High	Low	Now	
	Legal-Trophy			
	2016	2022	2025	
	72%	23%	61%	
	Trophy			
	2017	2022	2025	
	4%	0%	0%	

GROWTH

Barramundi growth at the end of each year Fish tagged <580mm 2016-2025	Recaptures	131	
	Growth (mm)		
	Year 1	148	
	Year 2	231	
	Year 3	280	
	Year 4	314	
	Year 5	341	

MOVEMENT

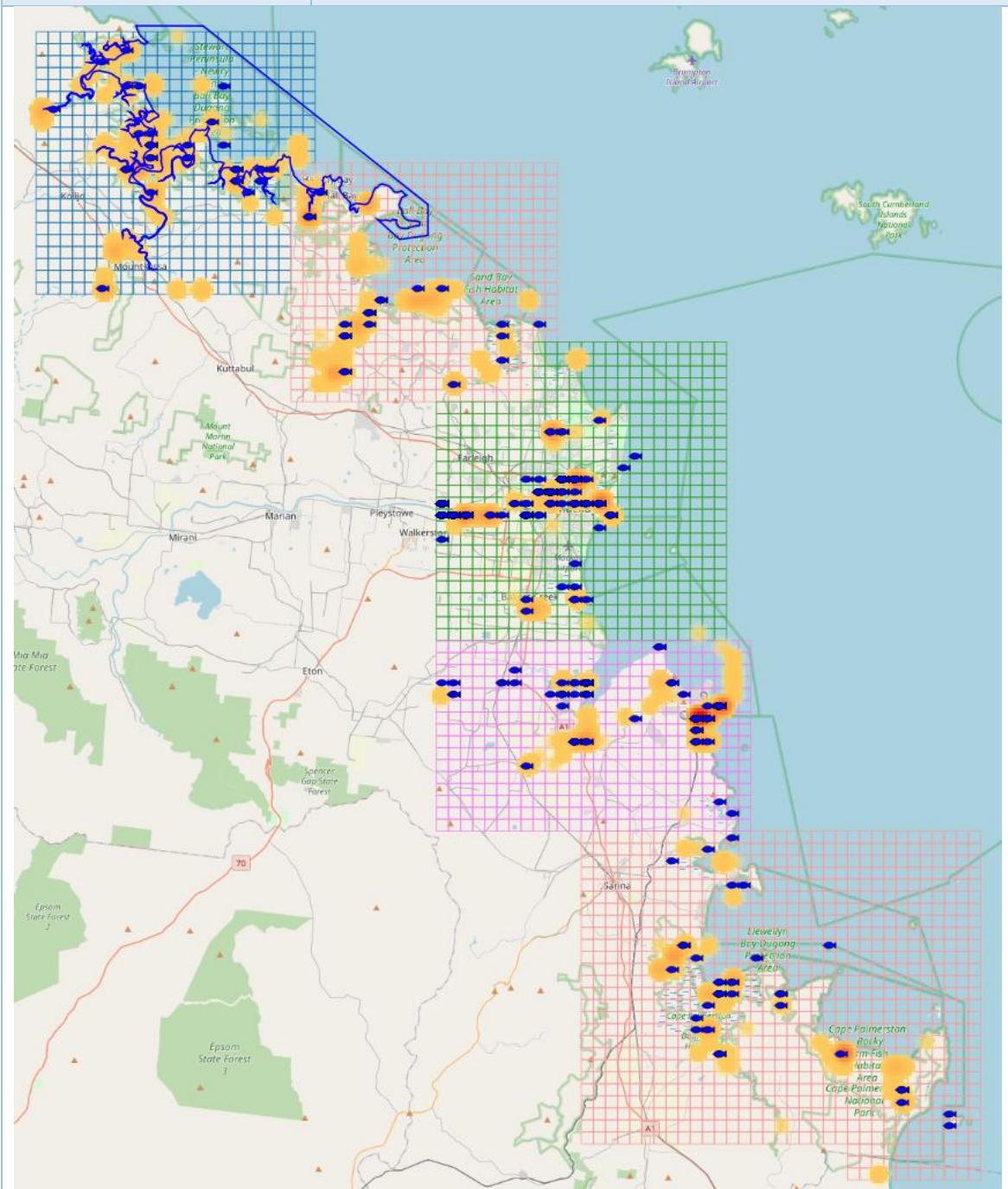
Barramundi movements Mackay area Distance moved (km) 2016-2025	Recaptures	254	
	Moved 1-9km	54 (21%)	
	Moved 10-24km	19 (7%)	
	Moved 25-49km	12 (5%)	
	Moved 50-99km	11 (4%)	
	Moved 100+km	1 (1%)	
	Max	125km	

LOCATIONS

Barramundi
Tagged (red-orange heat map)
Recaptures (blue fish)
NFZ outlined blue
2016-2025

Tagged
 Recaptured

3126
 586



FLATHEAD



DATA RELIABILITY

Sample size (fish/year)

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 (blue arrow)



Recaptures (orange arrow)



Confidence %

Error %

2021-2025

TAGGED AND TAG RATE

Catch and effort taggers

High Low Now

number of tagged fish

Tagged

days fished

2020 2016 2025

2016-2025

185 17 104

Days fished

2024 2016 2025

283 56 212



Tag rate

High Low Now

Fish/day

Tag rate

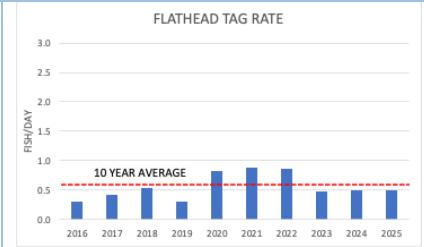
2016-2025

2021 2016 2025

0.9 0.3 0.5

10 year average

0.6



Fish tagged and

Tagged

recaptured

1050

2016-2025

Recaptured

29

Recapture rate

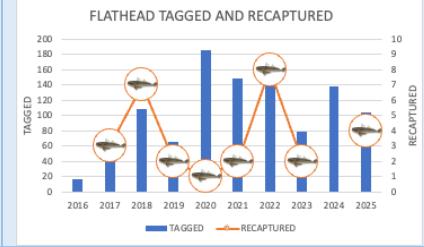
2.8%

Tagged 2025

104

Recaptured 2025

4



LENGTHS

Average length (mm) Bars show length range Dots show outliers 2016-2025	High	Low	Now	
	Average length			
	2017	2016	2025	
	477	435	482	
	Max			
	2020	2016	2025	
	807	600	700	
Fish lengths percentage Undersize <400mm Legal 400-700mm Trophy 700+mm 2016-2025	High	Low	Now	
	Legal -Trophy			
	2017	2016	2025	
	86%	53%	86%	
	Trophy			
	2018	2024	2025	
	4%	0%	1%	

MOVEMENT

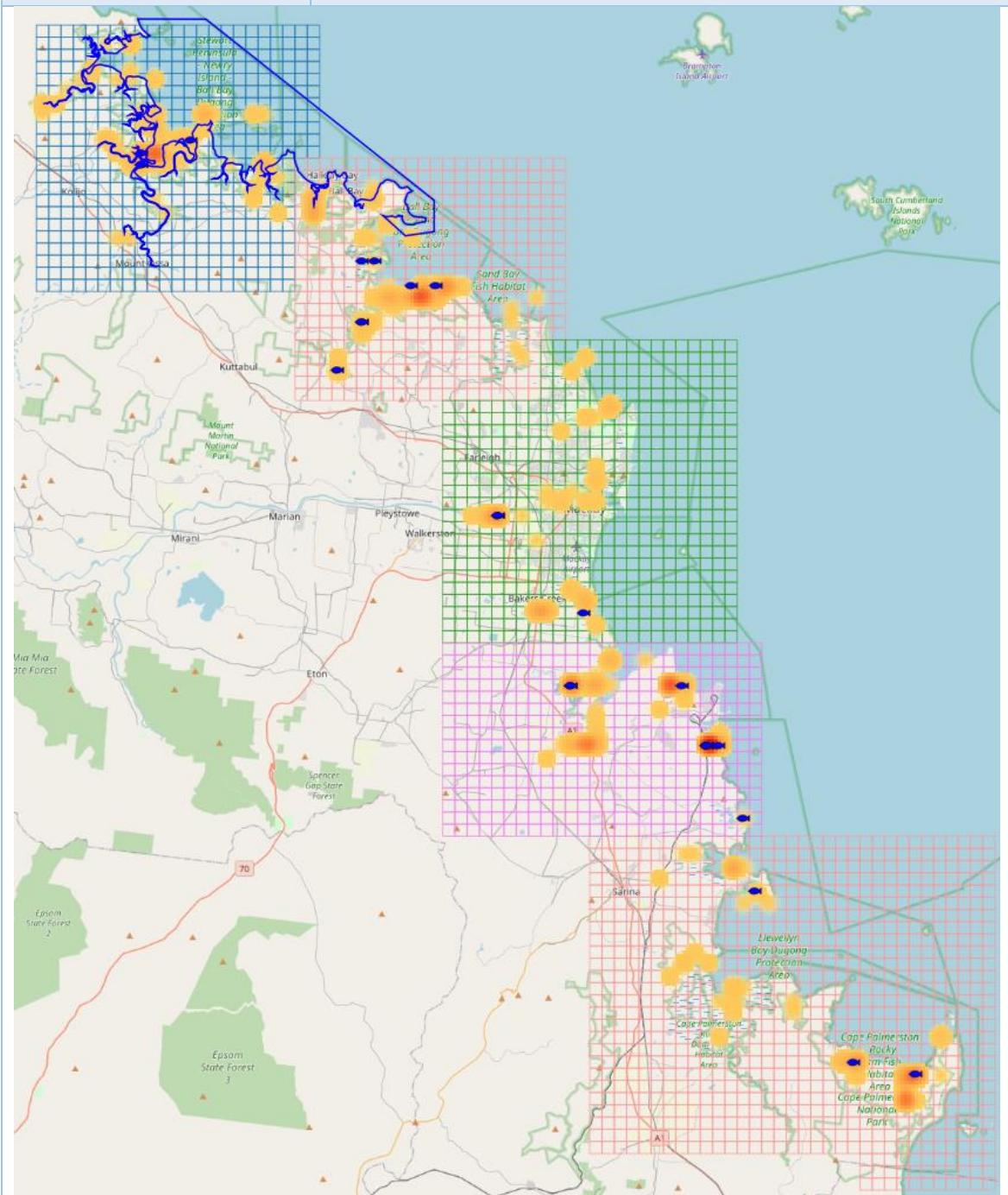
Flathead movements Mackay area Distance moved (km) 2016-2025	Recaptures	24	
	Same area	17 (71%)	
	Moved	7 (29%)	
	Max	12km	

LOCATIONS

Flathead
Tagged (red-orange heat map)
Recaptured (blue fish)
NFZ outlined blue
2016-2025

Tagged
 Recaptured

1050
 29



ROCKCODS



DATA RELIABILITY

Sample size (fish/year)

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

Tagged (blue arrow)

Recaptures (orange arrow)

Confidence %

Error %

2021-2025



TAGGED AND TAG RATE

Catch and effort taggers

High Low Now

number of tagged fish

Tagged

days fished

2024 2016 2025

2016-2025

142 13 66

Days fished

2024 2016 2025

2016-2025

283 56 212



Tag rate

High Low Now

Fish/fisher day

Tag rate

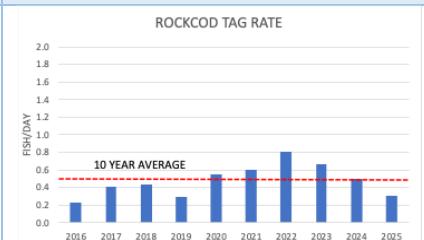
2016-2025

2022 2016 2025

0.8 0.2 0.3

10 year average

0.5



Fish tagged

Tagged

904

Recaptured

Recaptured

56

2016-2025

Recapture rate

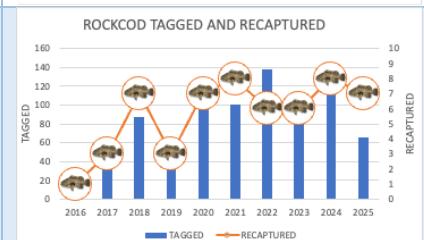
6.2%

Tagged 2025

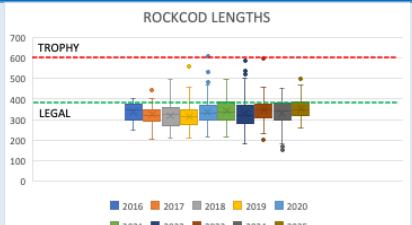
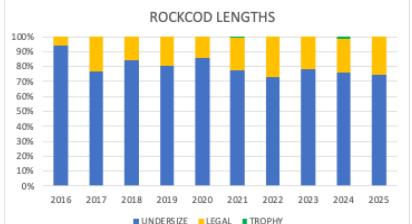
66

Recaptured 2025

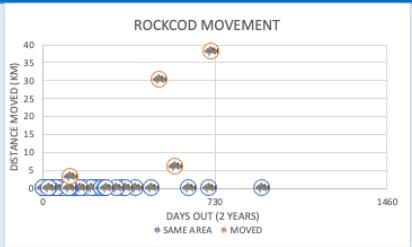
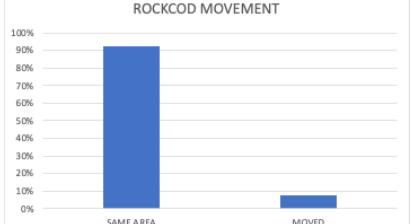
7



LENGTHS

Average length (mm) Both species Bars show length range Dots show outliers 2016-2025	High	Low	Now	 <p>ROCKCOD LENGTHS</p> <p>TROPHY (red dashed line)</p> <p>LEGAL (green dashed line)</p> <p>Legend: 2016 (blue), 2017 (orange), 2018 (grey), 2019 (yellow), 2020 (dark blue), 2021 (green), 2022 (dark grey), 2023 (red), 2024 (dark green), 2025 (brown)</p>
	Average length			
	2023	2019	2025	
	345	316	353	
	Max			
	2020	2016	2025	
	610	400	500	
Fish lengths percentage Both species Undersize <380mm Legal 380-600mm Trophy 600+mm 2016-2025	High	Low	Now	 <p>ROCKCOD LENGTHS</p> <p>UNDERSIZE (blue), LEGAL (yellow), TROPHY (green)</p>
	Legal-Trophy			
	2021	2019	2025	
	27%	14%	27%	
	Trophy			
	2023	2024	2025	
	1%	0%	0%	

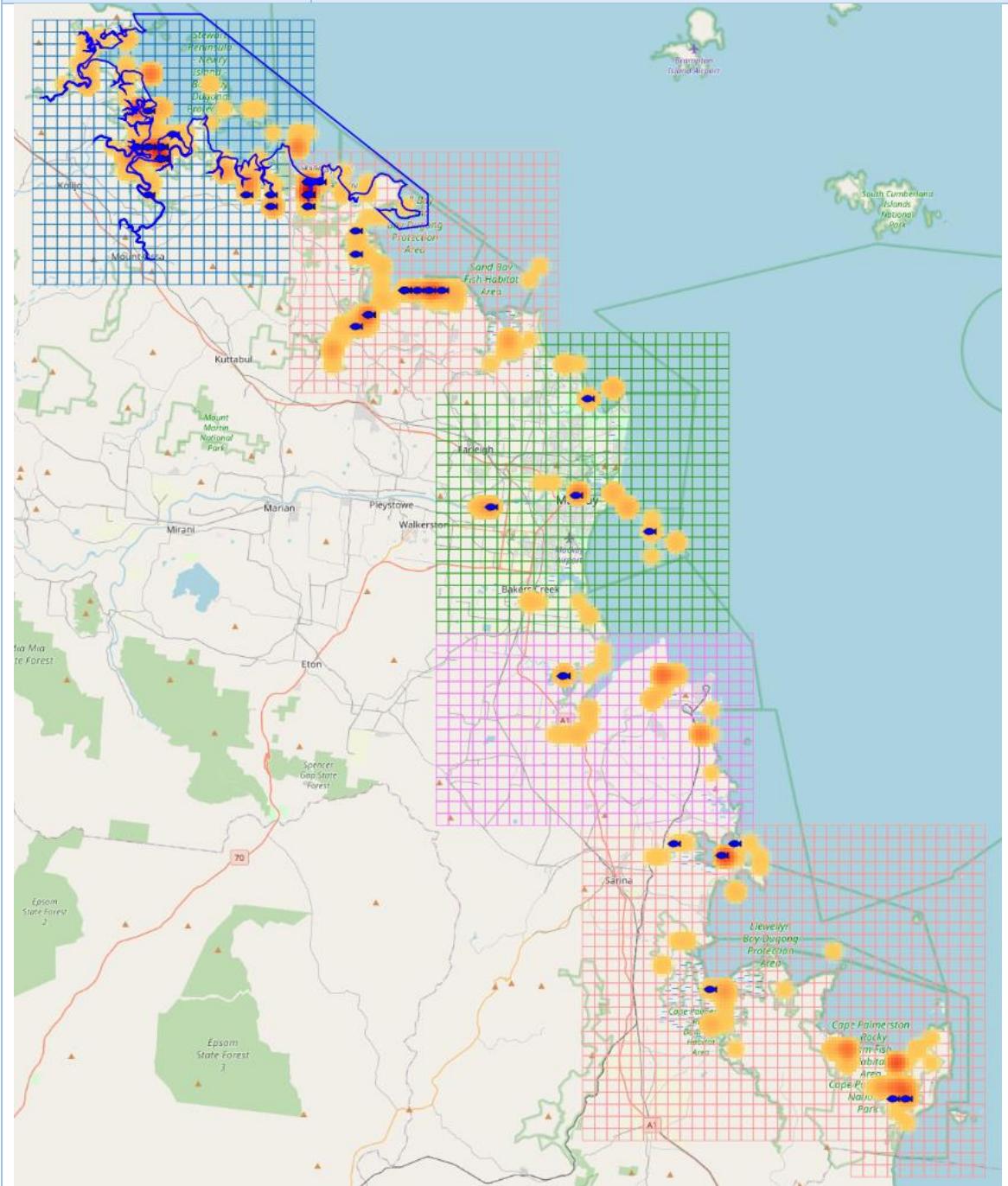
MOVEMENT

Rockcod movements Distance moved (km) 2016-2025	Recaptures	51	 <p>ROCKCOD MOVEMENT</p> <p>DISTANCE MOVED (KM)</p> <p>DAYS OUT (2 YEARS)</p> <p>● SAME AREA (blue circle)</p> <p>● MOVED (orange circle)</p>
	Max	38km	
Rockcod movements 2016-2025	Same area	47 (92%)	 <p>ROCKCOD MOVEMENT</p> <p>SAME AREA (blue bar)</p> <p>MOVED (blue bar)</p>
	Moved	4 (8%)	

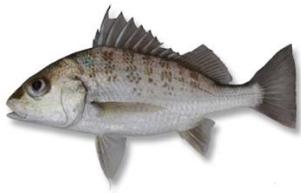
LOCATIONS

Rockcods tagged and recaptured
Tagged (red-orange heat map)
Recaptures (blue dots)
NFZ outlined blue
2016-2025

904
56



JAVELIN (GRUNTER)



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
Confidence	80%	80%	90%	90%
Error	20%	10%	10%	5%



TAGGED AND TAG RATE

Tag and effort taggers

High Low Now

Number of tagged fish

Tagged

Days fished

2017 2019 2025

2016-2025

105 35 31

Days fished

2024 2016 2025

2016-2025

283 56 212



Tag rate

High Low Now

Fish/fisher day

Tag rate

2016-2025

2017 2019 2025

0.7 0.2 0.5

10 year average

0.4



Fish tagged and

Tagged

recaptured

Recaptured

2016-2025

1.1%

Tagged 2025

106

Recaptured 2025

0



LENGTHS

Average length (mm) Bars show length range 2016-2025	High	Low	Now	
	Average length			
	2024	2022	2025	
	371	312	345	
	Max			
	2016	2019	2025	
	625	420	580	
Fish lengths percentage Undersize <400mm Legal 400-599mm Trophy 600+mm 2016-2025	High	Low	Now	
	Legal-Trophy			
	2016	2022	2025	
	33%	9%	14%	
	Trophy			
	2016	2019-24	2025	
	3%	0%	0%	

LOCATIONS

Barred Javelin
Tagged (red-orange heat map)
Recaptured (blue fish)
NFZ outlined blue
2016-2025

717
7

Data sources

Data used in the Mackay Crystal Bowl are:

- Tag records and recapture records at <http://crystalbowl.infofishaustralia.com.au/>.
- Rainfall records from Mackay station 033045, Mount Jukes 033053 and Koumala Hatfields Road 033038 from <http://www.bom.gov.au/climate/data>.
- Pioneer River flows at station 125007A at Mirani Weir Tail from <https://water-monitoring.information.qld.gov.au/>.
- Temperature records from Mackay station 033045 from <http://www.bom.gov.au/climate/data>.

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.
- Catch rates calculated as number of fish tagged/day for taggers with a minimum of 12 fisher days (at least 1 per month) to provide a reliable catch rate.
- For Barramundi undersized fish are <580mm, legal fish are >=580 and <1000mm and trophy fish are >=1000mm.
- For Dusky Flathead undersized fish are <400mm, legal fish are >=400 and <700mm and trophy fish are >=700mm.
- For Rockcod undersized fish are <380mm, legal fish are >=380 and <600mm and trophy fish are >=600mm.
- For Barred Javelin undersized fish are <400mm, legal fish are >=400mm and <600mm and trophy fish are >=600mm.
- Analysis of Goldspotted Rockcod and Blackspotted Rockcod is based on combined records as the species are closely related, occupy similar habitat and have the same level of catchability.
- Growth calculated using logarithmic curve from recaptures where fish were out for 90 days or more and had positive growth.
- Locations based on Infofish grid maps SRN, HPM, MKY, CHM AND SHB and other grid maps where fish were recaptured outside the area.
- Movement has been calculated as the shortest distance by water from the tag to the recapture location derived from Google Earth.
- Distance from fisher's home to recapture location is the straight-line distance between locations based on Google Earth coordinates with Local <80, Intrastate >=80 and Qld postcode, Interstate postcode other than Qld.