



AGNES WATER REVIEW 2025

INFORMATION RATING



Key species: Mangrove Jack, Dusky Flathead, Barred Javelin
Fish timeframe: 2016-2025
Fisher timeframe: 2021-2025

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Department of Primary Industries

AGNES WATER OVERVIEW

While data for the area is limited it provides basic information that is indicative of the fishing in the area. Creeks in this area are mostly fished by locals and fishers from Bundaberg and Gladstone however visiting fishers come from as far away as Brisbane, Gold Coast, and from interstate.

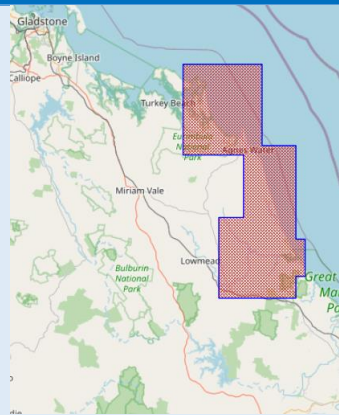
The area is known as a Mangrove Jack hotspot, particularly Baffle Creek, which is reflected in it being the key target for taggers which accounted for 67% of all fish tagged. Flathead were also a target species accounting for 12% of fish tagged.

The area is primarily a harvest fishery which is reflected in 61% of legal Mangrove Jack and 78% of legal Flathead recaptured being kept by fishers (other than taggers). Javelin tagged in the creeks are mostly juvenile fish below the legal limit which is similar to other adjacent systems however it is likely that most legal Javelin are harvested contributing to the size structure.

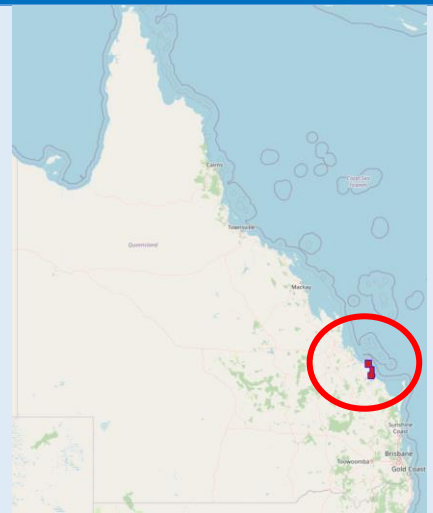
Flows in Baffle Creek in the early months of 2022 made fishing conditions in the creek difficult for much of the year resulting in a drop in the numbers of fish tagged and recaptured. This was likely to be similar in the other creeks. Conditions since 2022 were better however tagging effort has remained low with some key taggers moving away from the area.

Movement of the key species is mostly within the system they were tagged in however there were 3 Mangrove Jack recaptured offshore with 1 fish tagged in Baffle Creek recaptured at the top end of K'gari (Fraser) Island.

AGNES WATER LOCATION AND WATERWAYS

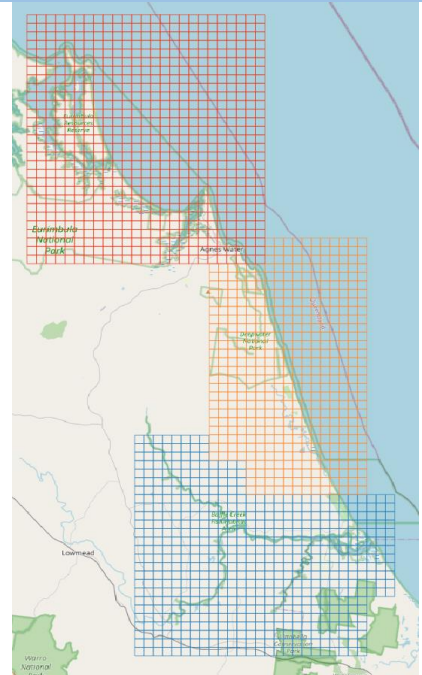


Agnes Water
24.2°S
151.9°E



Grid Maps
Baffle Creek (BFF)
Deepwater Creek (DWC)
Bustard Bay (BBY)

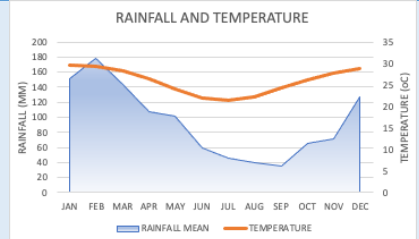
Waterways
Baffle Creek
Deepwater Creek
Round Hill Creek
Eurimbula Creek
Middle Creek
Jenny Lind Creek
Pancake Creek



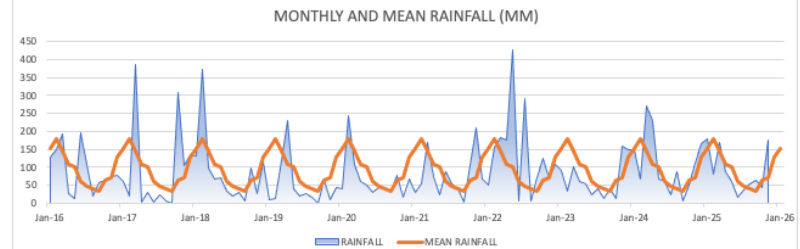
ENVIRONMENTAL CONDITIONS

Agnes Water
Mean monthly rainfall (mm)
Mean monthly air temperature (°C)

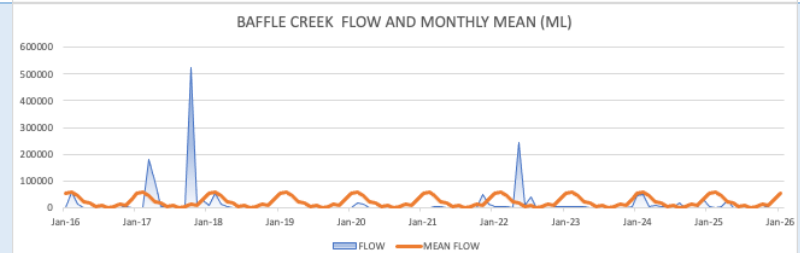
Rainfall	Max (mm)
Feb	160
Temperature	Max (°C)
Jan	32
Feb	31



Agnes Water
Monthly rainfall (mm)
Monthly mean rainfall (mm)
2016-2025



Baffle Creek flows and monthly mean flow (ML)
2016-2025

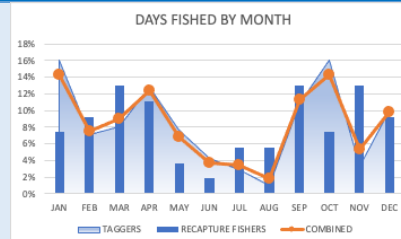


TYPE OF FISHERY																						
DATA RELIABILITY																						
Sample size (days fished) Tag days (blue arrow) Recaptures (orange arrow) Confidence % Error % 2021-2025	<table border="1"> <thead> <tr> <th>Reliability level</th> <th>LOW</th> <th>MODERATE</th> <th>MODERATE</th> <th>HIGH</th> </tr> </thead> <tbody> <tr> <td>Samples</td> <td>10</td> <td>41</td> <td>68</td> <td>271</td> </tr> <tr> <td>Confidence</td> <td>80%</td> <td>80%</td> <td>90%</td> <td>90%</td> </tr> <tr> <td>Error</td> <td>20%</td> <td>10%</td> <td>10%</td> <td>5%</td> </tr> </tbody> </table>	Reliability level	LOW	MODERATE	MODERATE	HIGH	Samples	10	41	68	271	Confidence	80%	80%	90%	90%	Error	20%	10%	10%	5%	
Reliability level	LOW	MODERATE	MODERATE	HIGH																		
Samples	10	41	68	271																		
Confidence	80%	80%	90%	90%																		
Error	20%	10%	10%	5%																		
Seasonality Mean monthly rainfall (mm) Days fished combined Taggers (211) Recapture fishers (54) 2021-2025	Days fished 265 Months most effort Jan Oct Apr																					
Harvest or experiential fishery Release rate of recaptured legal fish (ex-taggers) 2021-2025	Legal fish kept rate Mangrove Jack Flathead Legal fish 28 Kept 18 (64%) Released 10 (36%)																					
Local or visitor fishery Where recapture fishers live 2021-2025	Recapture fishers 50 Local 22 (44%) Visitor 28 (56%)																					
Gender of recapture fishers (ex-taggers) 2021-2025	Recapture fishers 41 Female 2 (5%) Male 39 (95%)																					

FISHER ACTIVITY

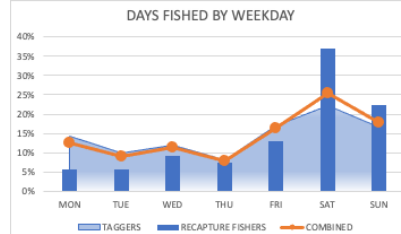
Monthly activity
Days fished combined
Taggers (211)
Recapture fishers (54)
2021-2025

Month	%
Most days Oct	14%
Jan	14%
Apr	12%



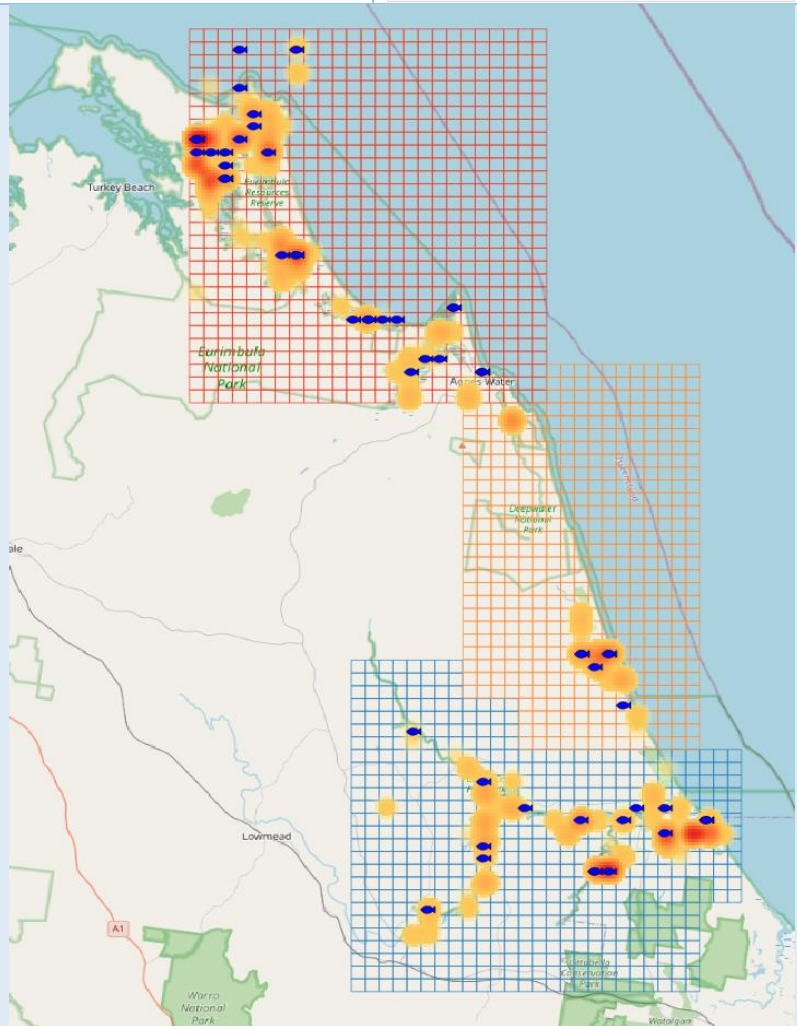
Weekday activity
Days fished combined
Taggers (211)
Recapture fishers (54)
2021-2025

Day	%
Most days Weekend	43%
Weekdays	57%



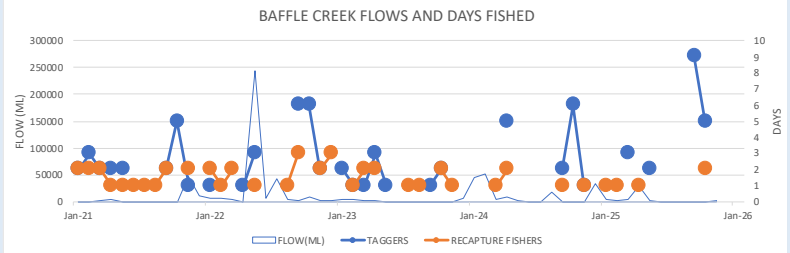
Location activity
Taggers (red-orange heat map)
Recapture fishers (blue fish)
2021-2025

Tagged 902
Recaptured 55

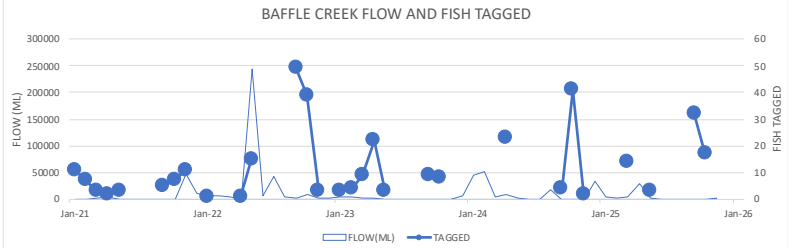


FISHER EFFORT

Fisher activity
Baffle Creek
Flow (ML)
Tagger days (blue dots)
Recapture fisher days
fished (orange dots)
2021-2025

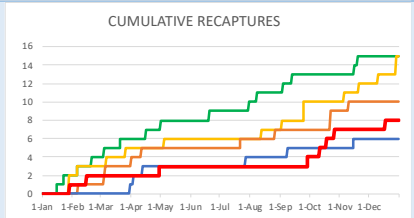


Fisher activity
Baffle Creek
Flow (ML)
Fish tagged (blue dots)
2021-2025

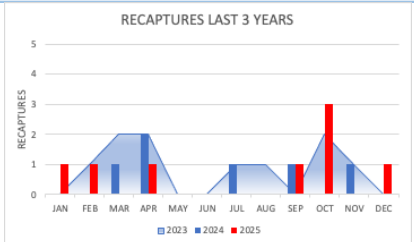


Cumulative recaptures
2021-2025

Year	Recaps
2021	15
2022	15
2023	10
2024	6
2025	8



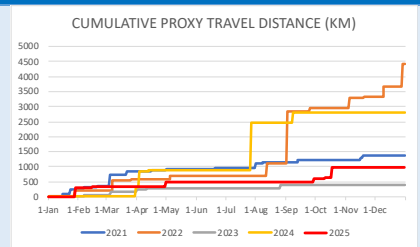
Recaptures each month
2023-2025



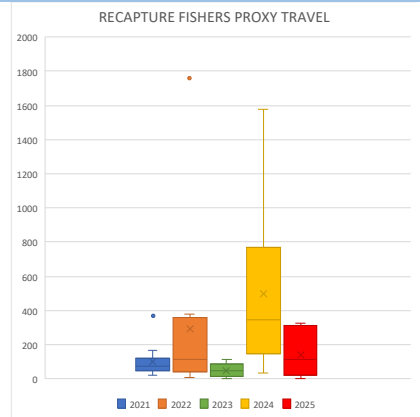
FISHER TRAVEL

Cumulative distance (km) address to recapture location 2021-2025

Year	Km
2021	1388
2022	4416
2023	404
2024	2814
2025	977

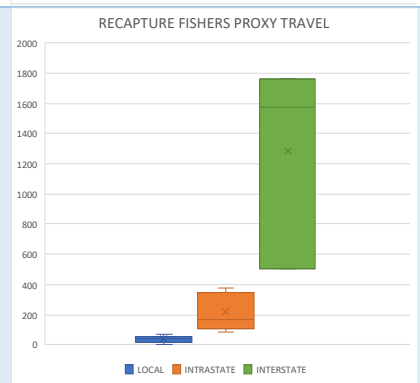


Cumulative distance (km) address to recapture location by year 2021-2025



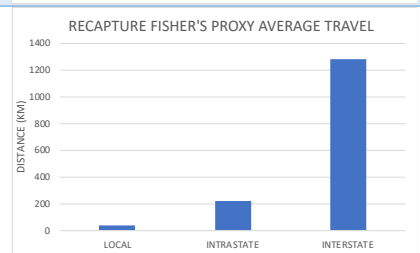
Proxy travel distance (km) home to recapture location 2021-2025
 Bars show distance range
 Dots show outliers
 Local
 Intrastate

Category	Range (km)
Local	1-66
Intrastate	82-380
Interstate	505-1760



Average distance (km) from home to recapture location 2021-2025

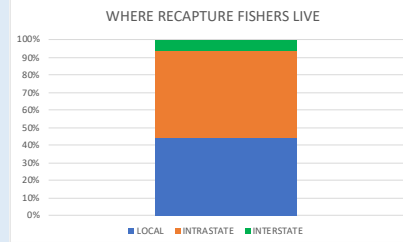
Category	Av distance (km)
Local	37
Intrastate	221
Interstate	1281



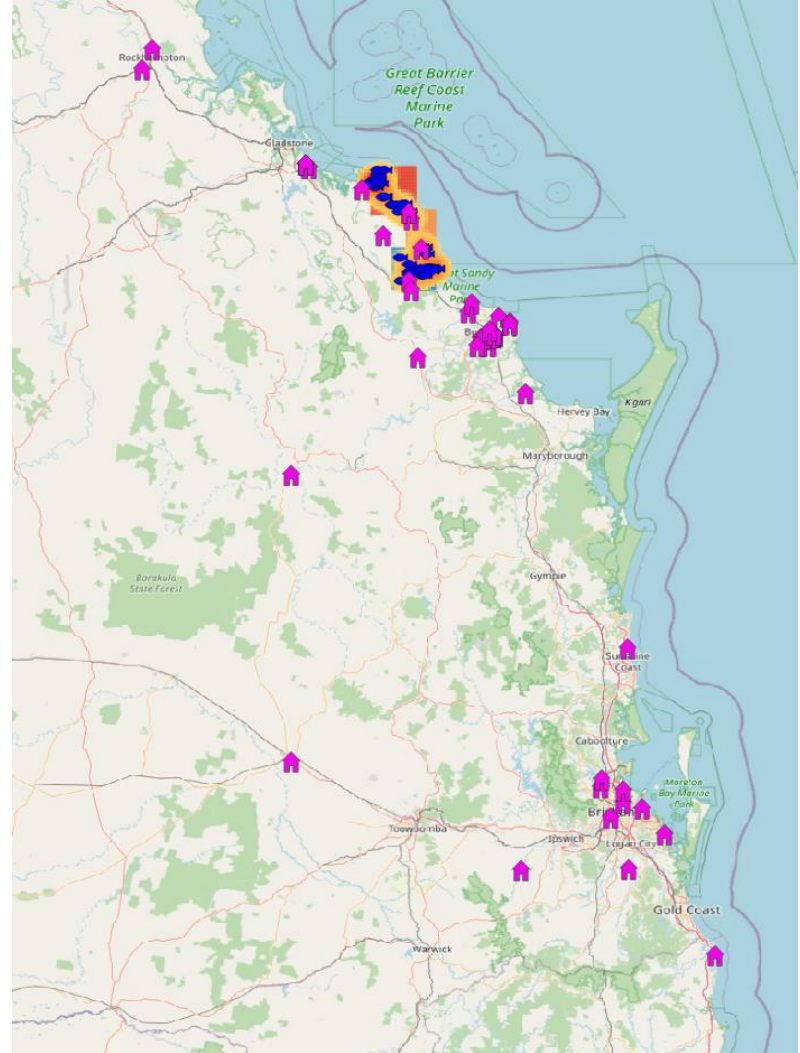
WHERE RECAPTURE FISHERS LIVE

**Where recapture fishers live
2021-2025**

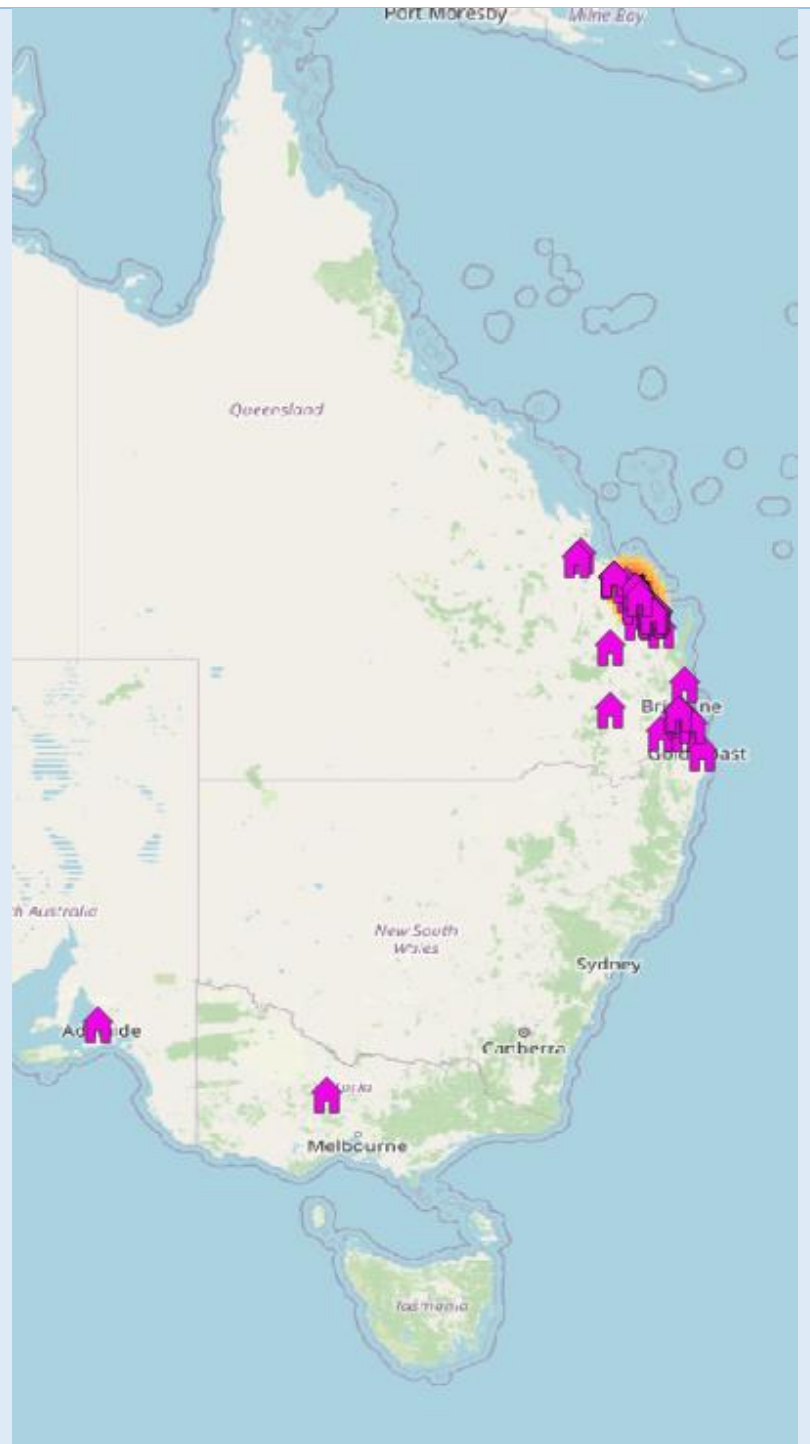
Recaptures	50
Local	22 (44%)
Intrastate	25 (50%)
Interstate	3 (6%)



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



Where fishers recapturing
fish live (pink houses)
All
2021-2025



AGNES WATER KEY SPECIES

MANGROVE JACK



DUSKY FLATHEAD



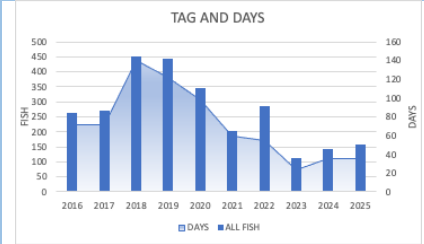
BARRED JAVELIN



TAGGED AND TAG RATE

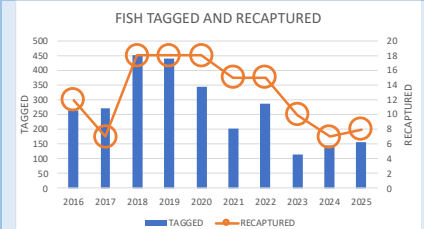
Catch and effort taggers
Tagged fish (2673)
Days fished (714)
2016-2025

High	Low	Now
Tagged fish		
2018	2023	2025
450	113	158
Days		
2018	2023	2025
140	24	36



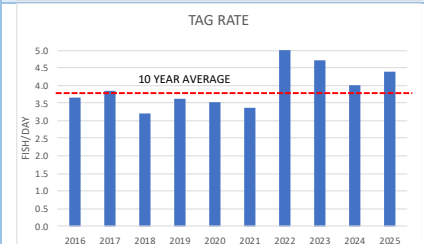
Fish tagged and recaptured
2016-2025

Tagged	2673
Recaptured	128
Recapture rate	4.8%



Tag rate
All tagged fish
Fish/day
2016-2025

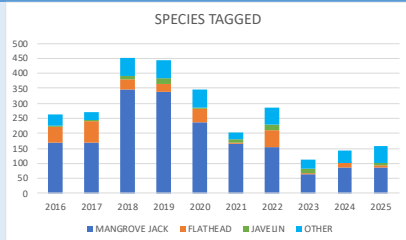
High	Low	Now
Tag rate		
2022	2018	2025
5.2	3.2	3.7
10 year average		3.7



SPECIES

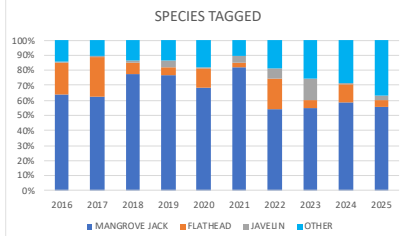
**Species composition
Numbers tagged
2016-2025**

Mangrove Jack	1816
Dusky Flathead	321
Barred Javelin	87
Other species	449



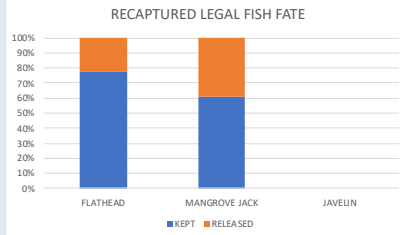
**Species composition
Percentage tagged
2016-2025**

Mangrove Jack	69%
Dusky Flathead	12%
Barred Javelin	3%
Other species	16%



**Legal fish fate
Recaptured (ex-taggers)
2016-2025**

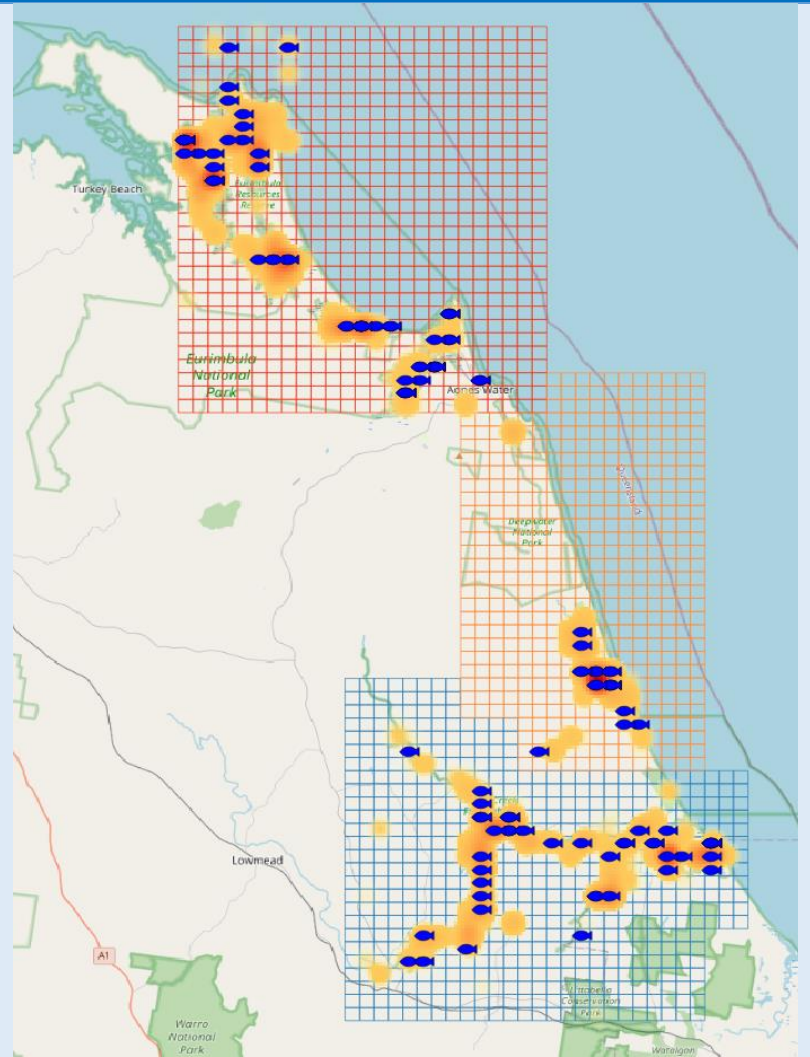
	Legal	Kept
M Jack	54	33 (61%)
Flathead	9	7 (78%)
Javelin	0	0 (0%)



LOCATIONS

All fish
Tagged (red-orange heat
map)
Recaptured (blue fish)
2016-2025

Tagged 2674
Recaptured 129



MANGROVE JACK



DATA RELIABILITY

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

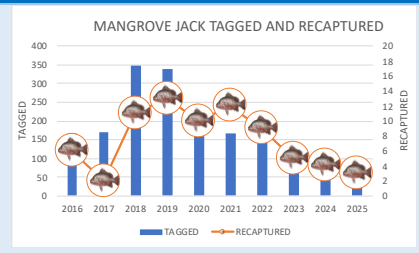
Reliability level	LOW		MODERATE		MODERATE		HIGH
Samples	10	41	68	271	384	664	99%
Confidence	80%	80%	90%	90%	95%	95%	99%
Error	20%	10%	10%	5%	5%	5%	5%



TAGGED AND TAG RATE

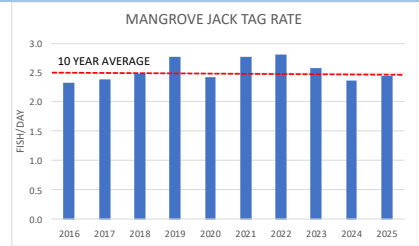
Mangrove Jack
 Tagged
 Recaptured
 2016-2025

	High	Low	Now
Tagged			
Recaptured	2018	2023	2025
	347	63	88
Tagged total			1816
Recaptured			75
Recapture rate			4.1%



Tag rate
 Mangrove Jack
 Fish/day
 2016-2025

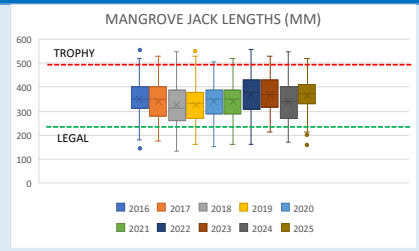
	High	Low	Now
Tag rate			
Fish/day	2022	2015	2025
	3.0	2.1	2.4
10 year average			2.5



LENGTHS

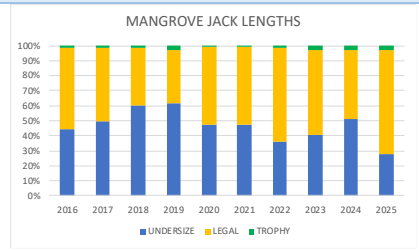
Average length (mm)
 Bars show length range
 Dots show outliers
 2016-2025

	High	Low	Now
Average length			
2023	2018	2025	
	369	325	367
Max			
2022	2020	2025	
	560	505	520



Fish lengths percentage
 Undersize <350mm
 Legal 350-500mm
 Trophy 500+mm
 2016-2025

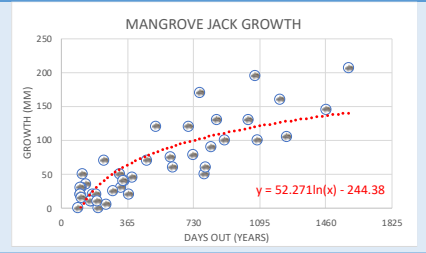
	High	Low	Now
Legal-trophy			
2022	2019	2025	
	62%	36%	67%
Trophy			
2024	2022	2025	
	3%	1%	3%



GROWTH

Mangrove Jack growth based on recaptures of fish tagged from 2016-2025

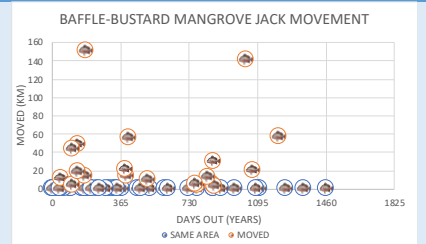
Recaptures	42
Growth at end of year (mm)	
Year 1	64
Year 2	100
Year 3	121
Year 4	136
Year 5	148



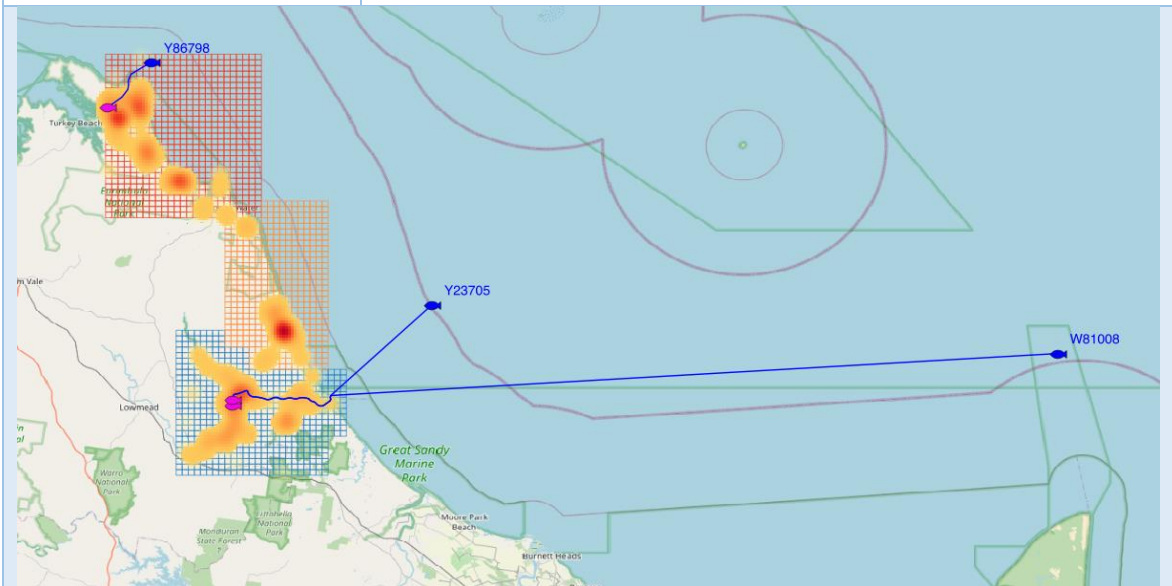
MOVEMENT

Mangrove Jack movement Distance moved (km) 2016-2025

Recaptures	72
Same area	49 (71%)
Moved	20 (29%)
Offshore	3 (3%)



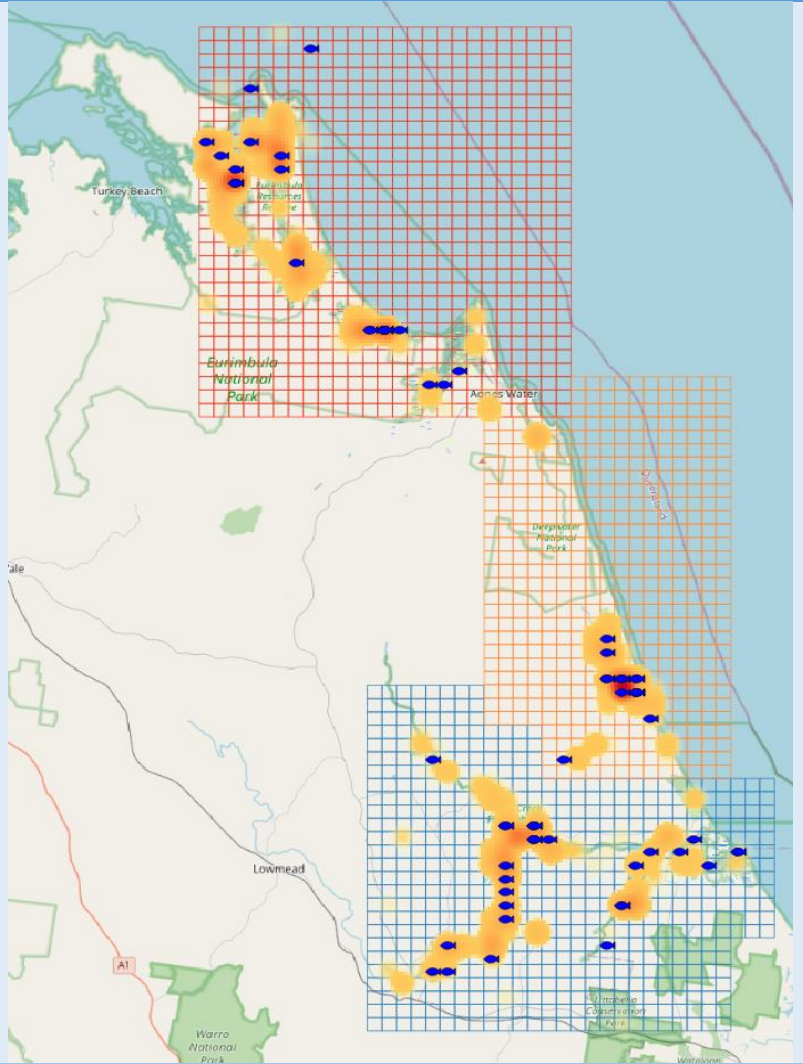
**Mangrove Jack Tagged (red-orange heat map)
Tagged (pink fish)
Recaptured offshore (blue fish)
2016-2025**



LOCATIONS

Mangrove Jack
Tagged (red-orange heat
map)
Recaptured (blue fish)
(ex-offshore)
2016-2025

Tagged 1816
Recaptured 75

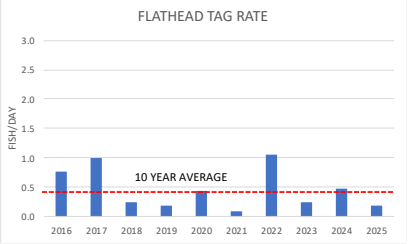
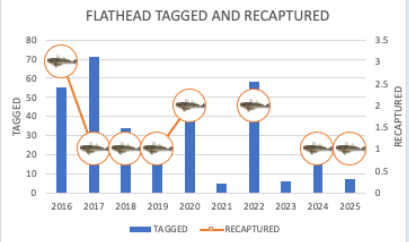


FLATHEAD



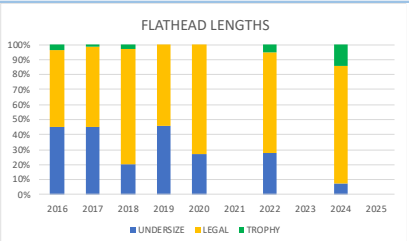
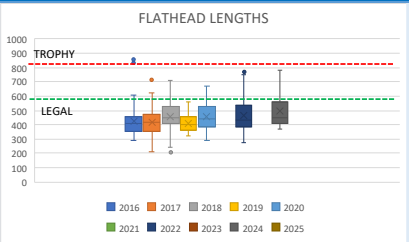
DATA RELIABILITY		LOW		MODERATE		MODERATE		HIGH	
Sample size (av fish/year)	10	41	68	271	384	664			
Tagged (blue arrow)	80%	80%	90%	90%	95%	99%			
Recaptures (orange arrow)	20%	10%	10%	5%	5%	5%			
Confidence %									
Error %									

TAGGED AND TAG RATE			
Flathead Tagged Recaptured 2016-2025	High	Low	Now
	Tagged	2021	2025
	79	5	7
	Tagged total		321
	Recaptured		12
			Recapture rate
			3.7%
Tag rate Flathead Fish/day 2016-2025	High	Low	Now
	Tag rate	2021	2025
	1.1	0.1	0.2
	10 year average		0.4



LENGTHS

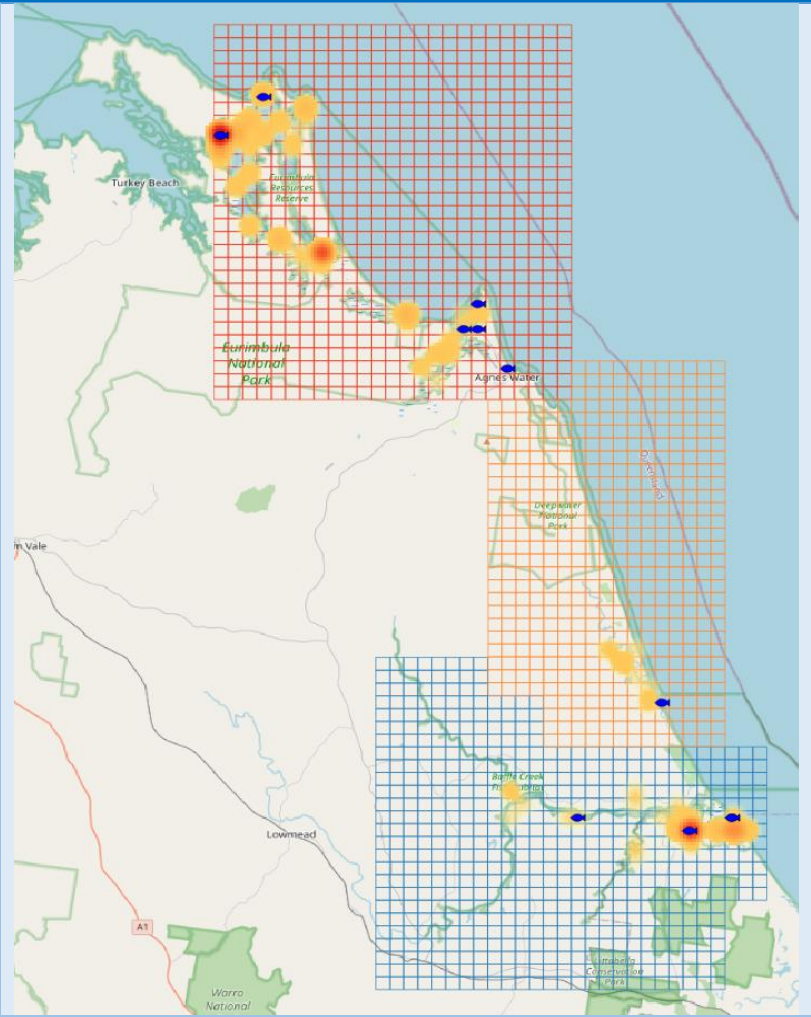
Average length (mm) Bars show length range Dots show outliers 2016-2025	High	Low	Now
	Average length	2019	2025
	468	413	NA
	Max	2019	2025
	860	560	NA
Fish lengths percentage Undersize <400mm Legal 400-700mm Trophy 700+mm 2016-2025	High	Low	Now
	Legal	2016	2025
	79%	51%	NA
	Trophy	2020	2025
	14%	0%	NA



LOCATIONS

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

Tagged	321
Recaptured	12



JAVELIN



DATA RELIABILITY

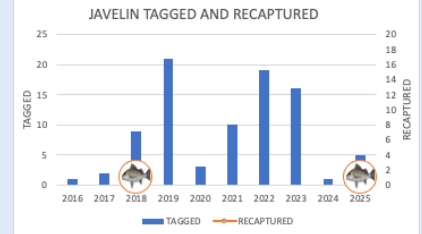
Sample size (av fish/year)
 Tagged (blue arrow)
 Recaptures (orange arrow)
 Confidence %
 Error %
 2021-2025

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

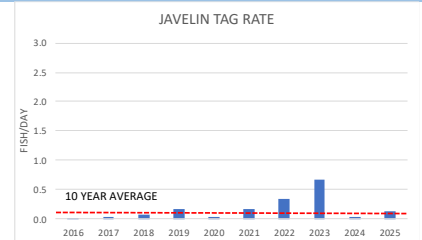


TAGGED AND TAG RATE

Javelin Tagged	High	Low	Now
Recaptured	2014	2016	2025
2016-2025	30	1	0
Tagged total			82
Recaptured			1
Recapture rate			1.2%

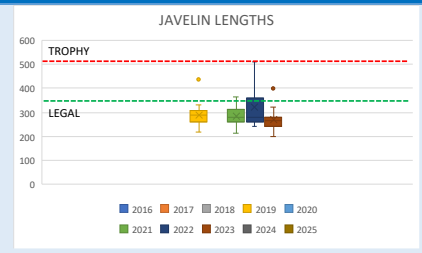


Tag rate Javelin	High	Low	Now
Fish/day	2023	2020	2025
2016-2025	0.7	0.0	NA
10 year average			0.1

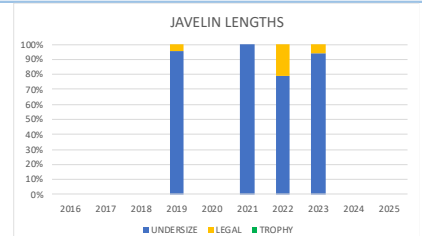


LENGTHS

Average length (mm)	High	Low	Now
Bars show length range	Average length		2025
Dots show outliers	2019	2023	2025
2016-2025	288	267	NA
Max	2022	2021	2025
	510	365	NA



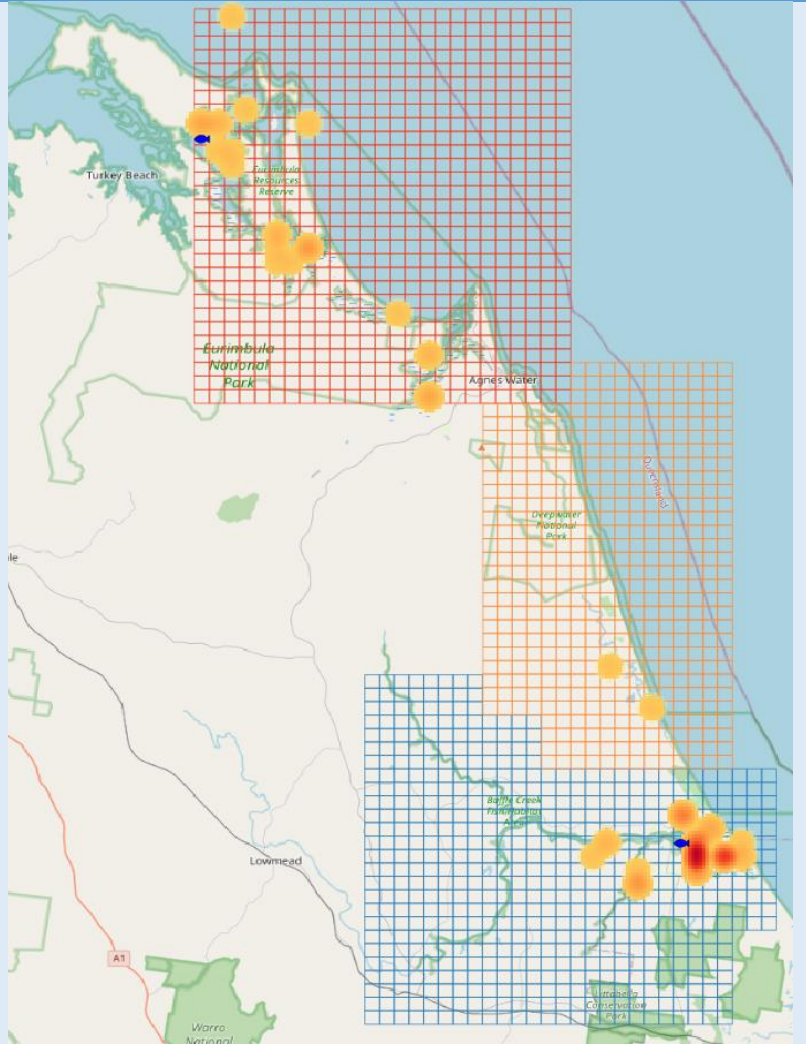
Fish lengths percentage	High	Low	Now
Undersize <400mm	Legal		2025
Legal 400-600mm	2022	2021	2025
Trophy 600+mm	21%	0%	NA
2016-2025			



LOCATIONS

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

Tagged **87**
 Recaptured **2**



Data sources

Data used in the Agnes Water Crystal Bowl are:

- Tag records and recapture records for the river at <http://crystalbowl.infofishaustralia.com.au/>.
- Flow records for Baffle Creek at Mimdale Station 134001B from <https://water-monitoring.information.qld.gov.au/>.
- Rainfall and temperate records from Station 039314 Seventeen Seventy 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 days (at least 1 per month) to provide an acceptable catch rate.
- For Mangrove Jack undersized fish are <350mm, legal fish are ≥ 350 mm and <500mm and trophy fish are ≥ 500 mm.
- For Dusky Flathead undersized fish are <400mm, legal fish are ≥ 400 and <700mm and trophy fish are ≥ 700 mm.
- For Barred Javelin undersized fish are >400mm, legal fish are ≥ 400 mm and <600 and trophy fish are ≥ 600 mm.
- Locations based on Infofish grid maps BFF, DWC and BBY 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 calculated using Google Earth.
- Distance from fisher's address to recapture location is the straight-line distance between locations based on Google Earth coordinates with Local <80km, Intrastate ≥ 60 km and Qld postcodes, Interstate postcodes other than Qld.