GLADSTONE HARBOUR REVIEW 2025

INFORMATION RATING ⭐ ⭐ ⭐ ⭐

Key species: Barramundi, Mangrove Jack, Yellowfin Bream, Pikey Bream, Barred Javelin
Fish timeframe: 2016-2025
Fisher timeframe: 2021-2025

Scroll through the dashboard to cover all subjects or for information on a specific subject go to:

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WHERE RECAPTURE FISHERS LIVE
COMMERCIAL CATCH
KEY SPECIES
BARRAMUNDI
MANGROVE JACK
YELLOWFIN BREAM
PIKEY BREAM
BARRED JAVELIN
BOYNE TANNUM HOOK UP COMPETITION

GLADSTONE HARBOUR OVERVIEW

Summary of 2025

- There was a high level of tagging activity in the Gladstone area with a further 1823 fish tagged and 85 recaptures keeping the confidence level in the data high.
- The Boyne Tannum Hook Up (BTHU) competition held in May this year continued to provide additional useful data.

Gladstone Harbour is mostly a local fishery with 85% of recaptures reported by locals. Visiting fishers mostly come from Rockhampton, Central and SE Qld with low numbers from interstate, mostly from NSW and Victoria. Tagging and recaptures occur throughout the year with increased activity around May-Jun around the time of the BTHU competition. Fish tagged during the BTHU competition result in a boost in recaptured in May-Jun.

Around 39% of tagger fishing days were on the weekend while for those recapturing fish 48% were reported from the weekend.

While Barramundi are a key species they are not as prolific as further north. Barramundi become a prime target when Lake Awoonga spills releasing fish from the lake. When that happens fishing for the species increases, particularly in the Boyne River. Following the spill in 2017 in the next 2 years fish tagged in the lake were recaptures in the Boyne River up to 10km below the dam with just 1 fish recaptured further away south along the coast. Since then, there have been few Barramundi tagged or recaptured in the Boyne River.

The lake has not spilled since 2017 and there has not been any significant natural recruitment so that Barramundi numbers have gradually fallen to low levels reflected in lower activity, a fall in the numbers tagged, a lower catch rate, and a fall in the commercial catch.

Mangrove Jack and Bream are other key species although in the last few years there has been an increase in the numbers of Barred Javelin (Grunter) tagged. Flathead are another species targeted by taggers but to a lesser extent.

Based on recaptures of legal fish by recreational fishers (other than taggers) the level of harvest of the key species is around 50% for Barramundi, Mangrove Jack and Bream however is higher at around 90% for Barred Javelin (however numbers are low). The area is a mix of a harvest and experiential fishery although there has been an increase in the release rate of legal fish. This is supported by the continuing increase of live fish (all legal) presented at the live weigh-in at the BTHU and boat ramp surveys during the competition up to 2019 which showed a steady decline in the kept fish catch rate.
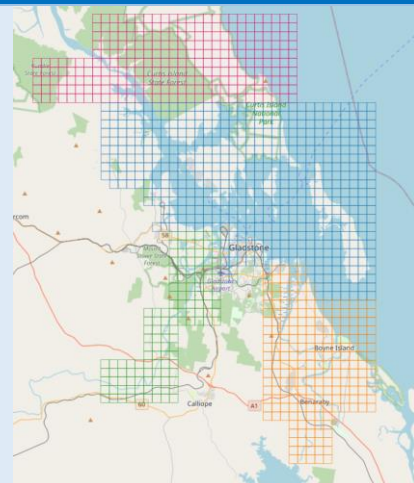
GLADSTONE HARBOUR LOCATION
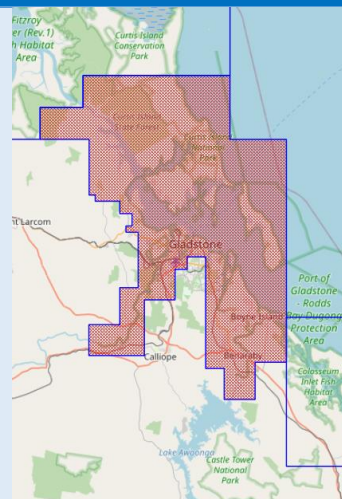
Gladstone Harbour

Lat   S 23.8
Lon   E 151.3
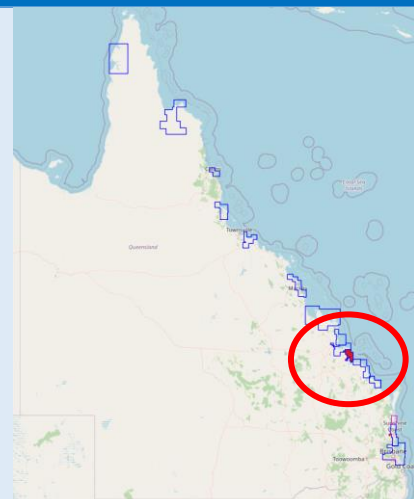
WATERWAYS

Gladstone Harbour and adjoining waterways Grid maps
Curtis Gladstone CISG
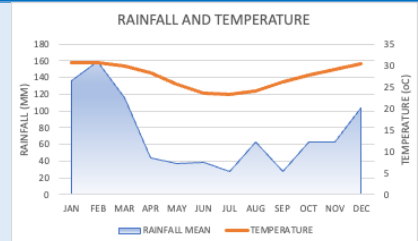**Gladstone Harbour GLD**
Calliope River CR02
Boyne River BRG

Narrows and creeks
Curtis Island
Gladstone Harbour
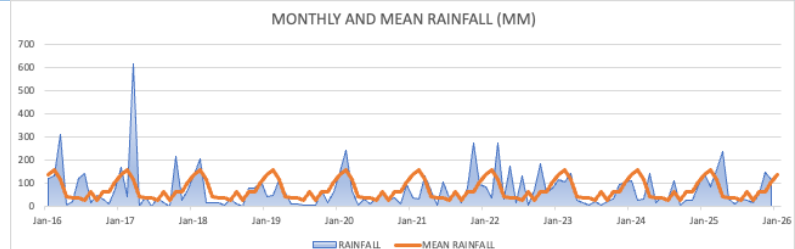Auckland Creek
Calliope River
South Trees Inlet
Boyne River

ENVIRONMENTAL CONDITIONS

Gladstone Airport monthly means **Rainfall (mm)** **Day air temperature (oC)** **All years**	Rainfall High Low Temp High Low	Month Feb Sep Month Feb Jul	mm 159 27 oC 31 23	 RAINFALL AND TEMPERATURE
Gladstone Airport **Monthly rainfall (mm)** **Monthly mean (mm)** **2016-2025**	 MONTHLY AND MEAN RAINFALL (MM)			
Calliope River **Monthly flow (ML)** **Mean monthly flow (ML)** **2016-2025**	 CALLIOPE RIVER FLOW AND MONTHLY MEAN (ML)			
Calliope River **Monthly flow (ML)** **Mean monthly flow (ML)** **2021-2025**	 CALLIOPE RIVER FLOW AND MONTHLY MEAN (ML)			
Lake Awoonga **Dam levels** **2016-2025** **Spills** **2017 (Apr and Nov)**	 LAKE LEVEL (%) AND RAINFALL (MM)			
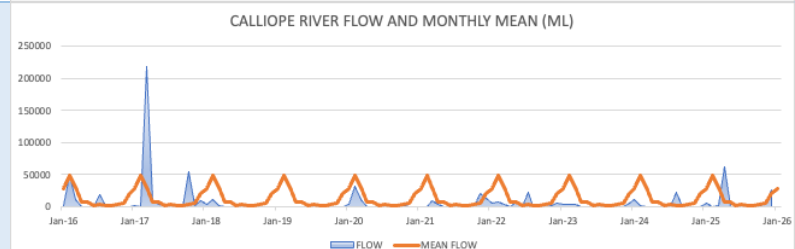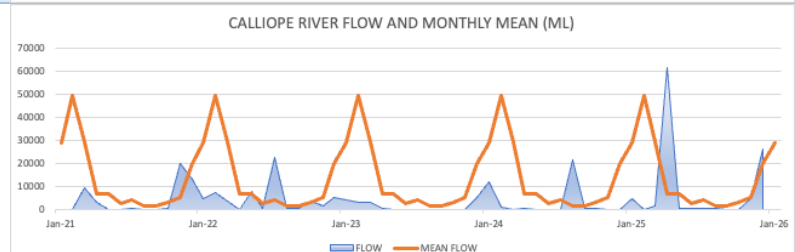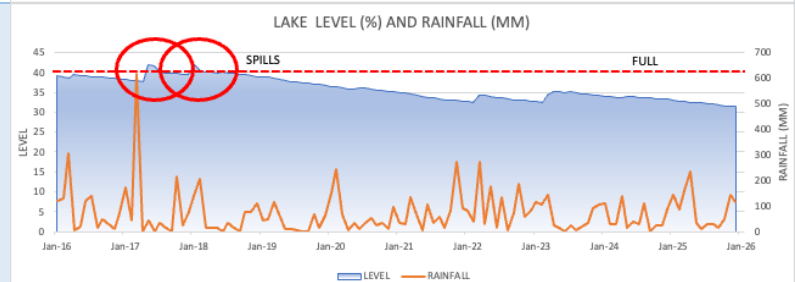
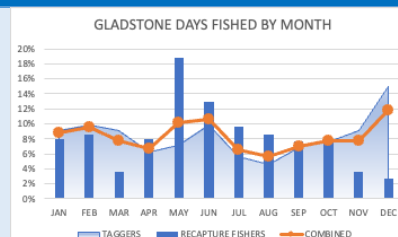## TYPE OF FISHERY

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	384	664
Confidence	80%	80%	90%	90%	95%	99%
Error	20%	10%	10%	5%	5%	5%

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

Months most fished
Combined   Dec
     Jun
     May

May-Jun influenced by Boyne Tannum Hookup fishing competition tags

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

Key species legal fish harvested
Legal fish   211
 Kept   92 (44%)
Released   119 (56%)

Local or visitor fishery
Where recapture fishers live
2021-2025

Recapture fishers   370
Local   315 (85%)
Visitor   55 (15%)

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

Recaptures   301
Female   33 (11%)
Male   268 (89%)

FISHER ACTIVITY

		Month	%
Monthly activity	Taggers	Dec	15%
Days fished		Feb	10%
Taggers (1064)		Jun	10%
Recapture fishers (343)	Recaps	May	19%
2021-2025		Jun	13%

GLADSTONE DAYS FISHED BY MONTH

		Day	%
Weekday activity	Taggers	Weekend	39%
Days fished		Weekdays	61%
Taggers (1064)	Recaps	Weekend	48%
Recapture fishers (343)		Weekdays	52%
2021-2025			

GLADSTONE DAYS FISHED BY WEEKDAY

Location activity
Taggers (3,253 fish tagged)
(red-orange heat map)
Recapture fishers (346 fish recaptured) (blue fish)
2021-2025

(ex-fish tagged during Boyne Tannum Hook Up fishing competition)
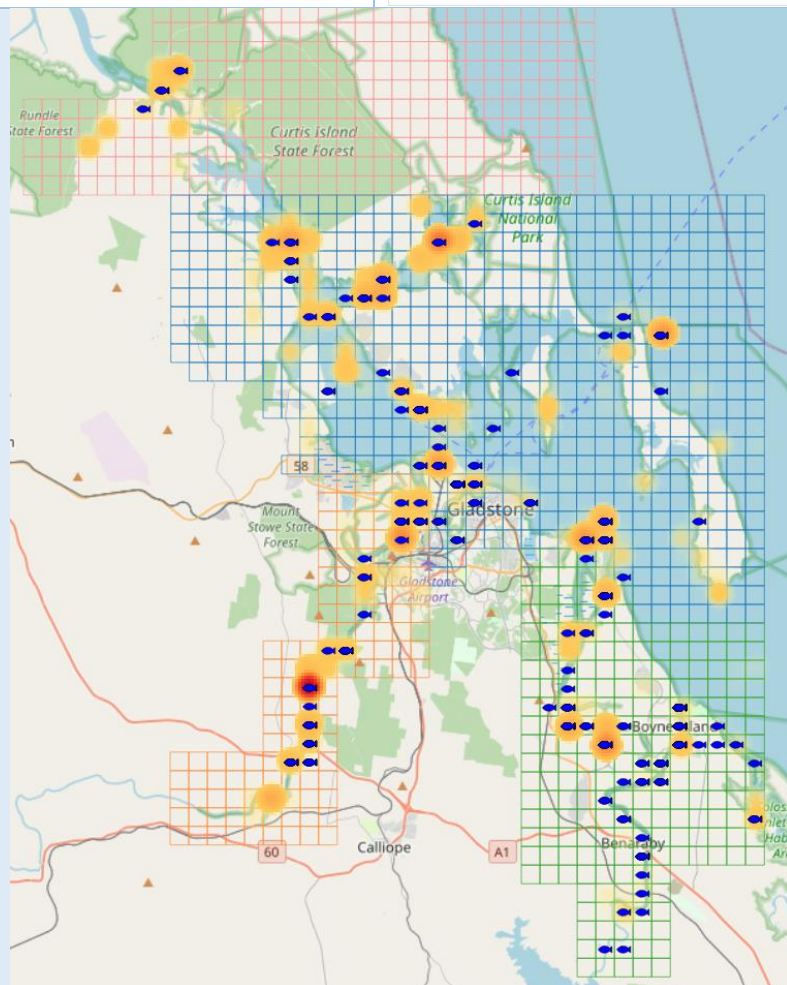
FISHER EFFORT

Total recaptures 2021-2025	Year	Recaps	
	2021	82	
	2022	79	
	2023	43	
	2024	80	
	2025	85	
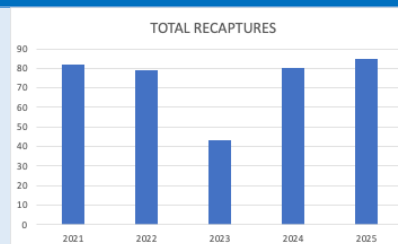
Cumulative recaptures 2021-2025			
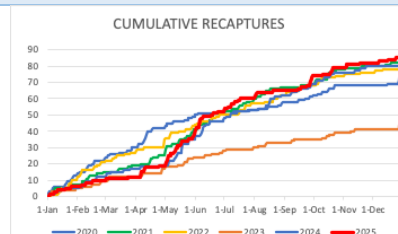
Recaptures last 3 years 2023-2025			
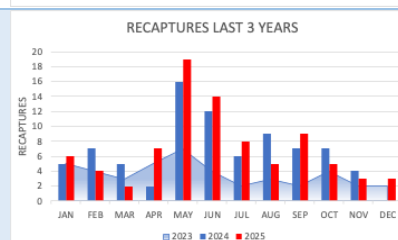
Rainfall (mm) Days fished Taggers Recapture fishers 2021-2025	
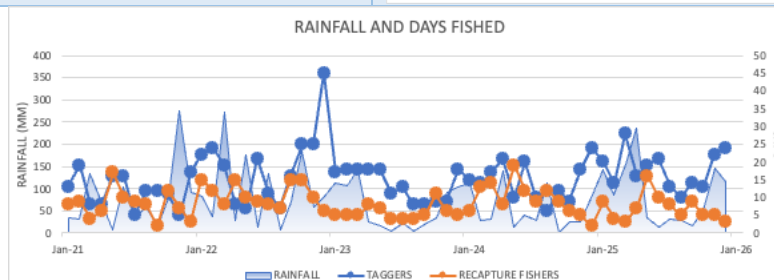
Rainfall (mm) Fish tagged 2021-2025	
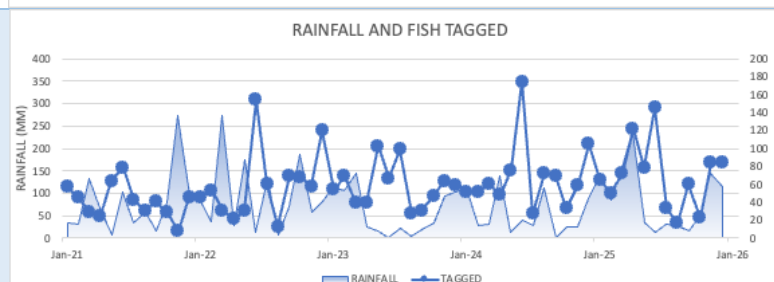
FISHER TRAVEL

Total distance fisher home to recapture location 2021-2025	Year	Km	
	2021	7078	
	2022	13785	
	2023	4670	
	2024	6101	
	2025	6222	
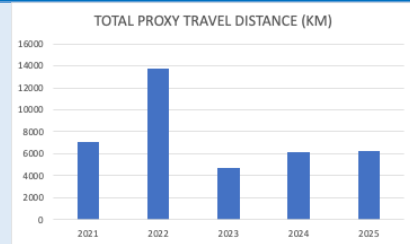
Cumulative distance (km) Fisher home to recapture location 2021-2025
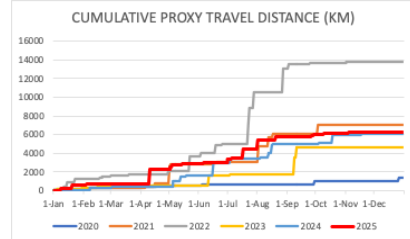
Distance from fisher home to recapture location (<500km) 2021-2025
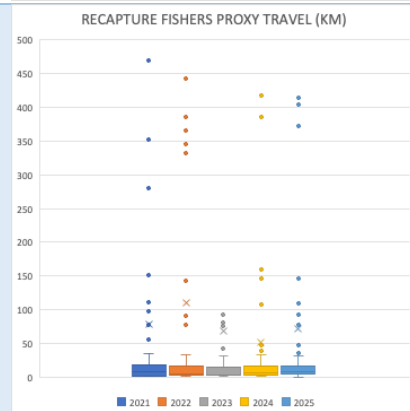
Average distance (km) from home to recapture location 2021-2025	Av distance (km)	
	Local	12
	Intrastate	264
	Interstate	1419
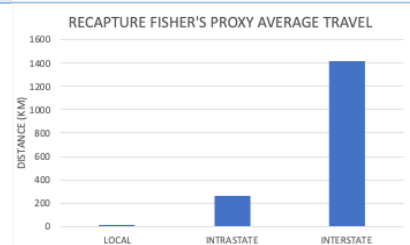
Distance (km) address to recapture location Bars show distance range Dots show outliers 2021-2025	Range (km)	
	Local	1-78
	Intrastate	81-955
	Interstate	855-2503

WHERE RECAPTURE FISHERS LIVE

| Where recapture fishers live Local Intrastate Interstate 2021-2025	Recapture fishers 370 Local 315 (85%) Intrastate 38 (10%) Interstate 17 (5%)	
Gladstone Harbour where fishers recapturing fish live (pink houses) Local and Central Qld 2021-2025		
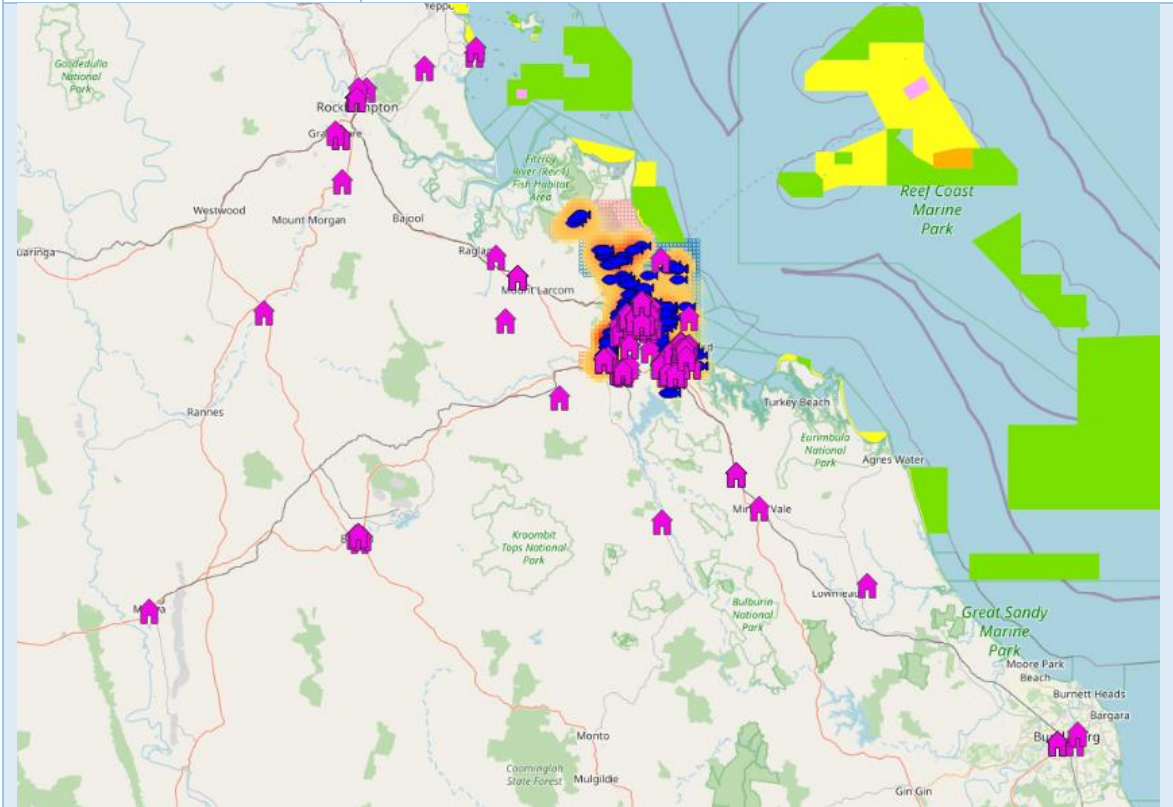
**Gladstone Harbour
where fishers recapturing
fish live (pink houses)
Local
Intrastate
Interstate
2021-2025**
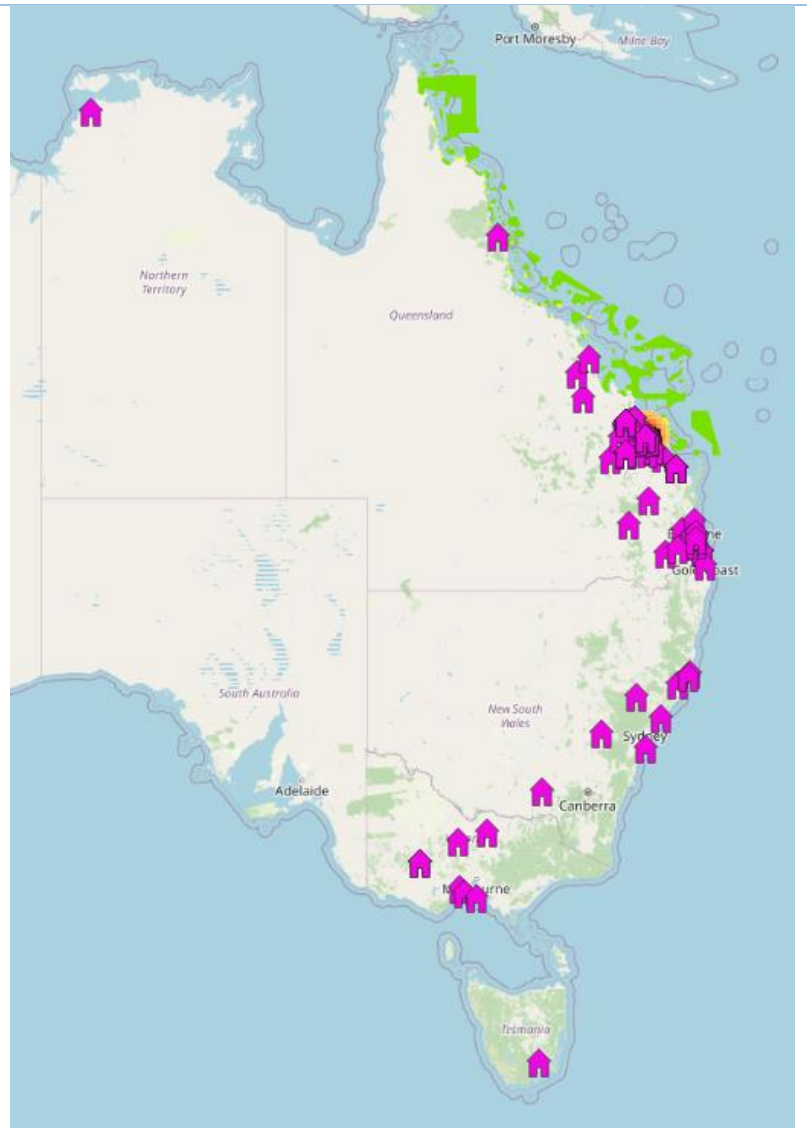
COMMERCIAL CATCH

Commercial QFISH grid	Grid S30	
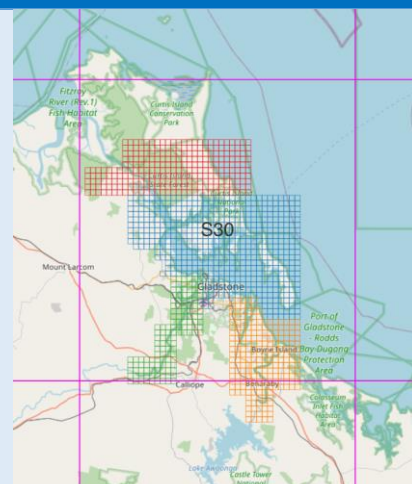
ALL CATCH

Commercial net licences Qfish grid S30 2016-2025	Year		Licences	
	2016		28	
	2020		15	
	2023		8	
	2024		NA	
	2025 *incomplete		NA	
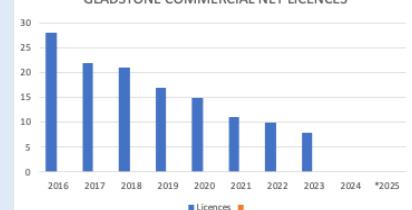
Commercial catch All species Qfish grid S30 Days fished Catch tonnes 2016-2025 *2025 incomplete	Year	Days	Catch	
	2016	986	107.2	
	2020	402	26.8	
	2023	210	14.8	
	2024	NA	NA	
	2025*	NA	NA	
	*incomplete			
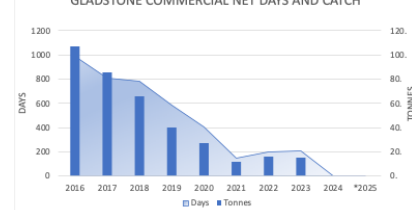
Commercial catch Qfish grid S30 Catch rate (kg/day) 2016-2025 *2025 incomplete	Year		Kg/day	
	2016		108.7	
	2020		66.7	
	2023		70.4	
	2024		NA	
	2025*		NA	
	*incomplete			

BARRAMUNDI

Commercial Barramundi net licences Qfish grid S30 2016-2025	Year		Licences
	2016		15
	2020		8
	2023		NA
	2024		NA
	2025 *		NA
	*incomplete		

COMMERCIAL NET BARRAMUNDI LICENCES

Commercial catch Barramundi Qfish grid S30 Days fished Catch tonnes 2016-2025 *2025 incomplete	Year	Days	Catch
	2016	457	25.4
	2020	108	6.0
	2023	NA	NA
	2024	NA	NA
	2025*	NA	NA
	*incomplete		

COMMERCIAL NET BARRAMUNDI DAYS AND CATCH

Commercial catch Qfish grid S30 Catch rate (kg/day) 2016-2025 *2025 incomplete	Year		Kg/day
	2016		55.5
	2020		55.4
	2023		NA
	2024		NA
	2025*		NA
	*incomplete		

COMMERCIAL NET BARRAMUNDI CATCH RATE
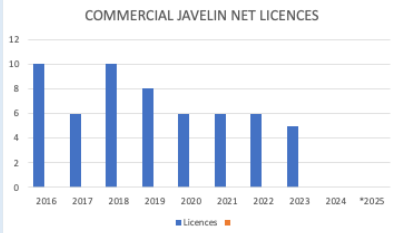
BREAM

Commercial Bream net licences Qfish grid S30 2016-2025	Year		Licences
	2016		8
	2020		6
	2021		5
	2022		NA
	2025*		NA
	*incomplete		

COMMERCIAL NET BREAM LICENCES

Commercial catch Bream Qfish grid S30 Days fished Catch tonnes 2016-2025 *2025 incomplete	Year	Days	Catch
	2016	287	1.3
	2020	168	0.6
	2021	26	0.2
	2022	NA	NA
	2025*	NA	NA
	*incomplete		

COMMERCIAL NET BREAM DAYS AND CATCH

Commercial catch Qfish grid S30 Catch rate (kg/day) 2016-2025 *2025 incomplete	Year		Kg/day
	2016		4.3
	2020		3.8
	2021		8.1
	2022		NA
	2025*		NA
	*incomplete		

COMMERCIAL NET BREAM CATCH RATE

JAVELIN

Commercial Bream net licences Qfish grid S30 2016-2025	Year		Licences
	2016		10
	2020		6
	2023		5
	2024		NA
	2025*		NA
	*incomplete		
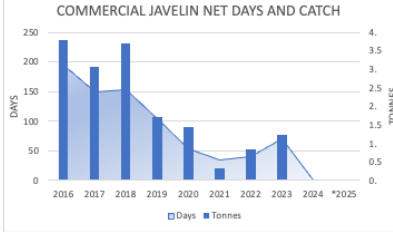
COMMERCIAL JAVELIN NET LICENCES

Commercial catch Javelin Qfish grid S30 Days fished Catch tonnes 2016-2025 *2025 incomplete	Year	Days	Catch
	2016	195	3.8
	2020	54	1.5
	2023	70	1.2
	2024	NA	NA
	2025*	NA	NA
	*incomplete		
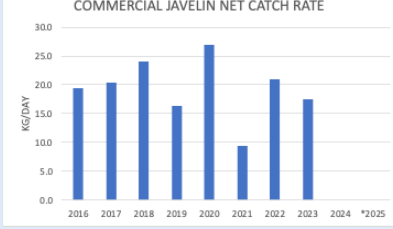
COMMERCIAL JAVELIN NET DAYS AND CATCH
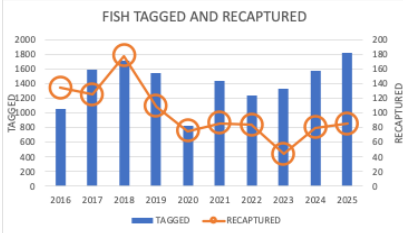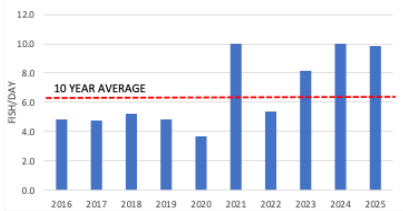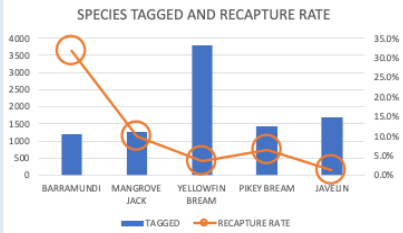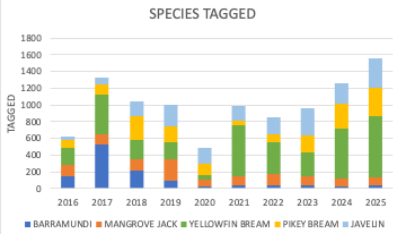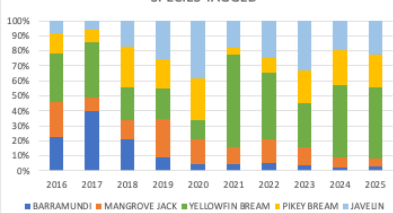
Commercial catch Qfish grid S30 Catch rate (kg/day) 2016-2025 *2025 incomplete	Year	Kg/day
	2016	19.5
	2020	26.9
	2023	17.4
	2024	NA
	2025*	NA
	*incomplete	
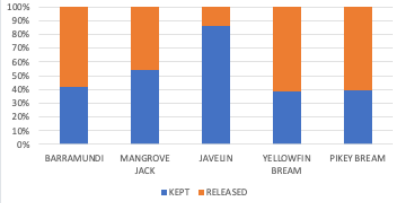
COMMERCIAL JAVELIN NET CATCH RATE

KEY SPECIES		
BARRAMUNDI	**MANGROVE JACK**	**BARRED JAVELIN**
YELLOWFIN BREAM	**PIKEY BREAM**	

TAGGED AND TAG RATE		
All fish **Tagged** **Recaptured** **2016-2025**	Tagged 14147 Recaptured 1000 Recapture rate 7.1% Tagged 2025 1823	
Taggers **Days fished** **Tagged fish** **2016-2025**	High Low Now Fisher days 2017 2021 2025 337 144 185 Tagged 2018 2020 2025 1716 819 1823	
Tag rates **Fish/day** **2016-2025**	High Low Now Tag rate 2024 2020 2025 10.0 3.7 9.9	
Fish tagged and recapture rate **2016-2025**	Recapture rate All fish 7.1% Barramundi 31.8% Mangrove Jack 9.8% Yellowfin Bream 3.5% Pikey Bream 6.4% Barred Javelin 1.3%	

SPECIES

Species composition Numbers tagged 2016-2025	Species	Tagged	
	Barramundi	1197	
	Mangrove Jack	1272	
	Barred Javelin	2056	
	Yellowfin Bream	3783	
	Pikey Bream	1776	
	All fish	13830	
Species composition Percentage tagged 2016-2025	Species	%Tagged	
	Barramundi	8%	
	Mangrove Jack	9%	
	Barred Javelin	15%	
	Yellowfin Bream	27%	
	Pikey Bream	13%	
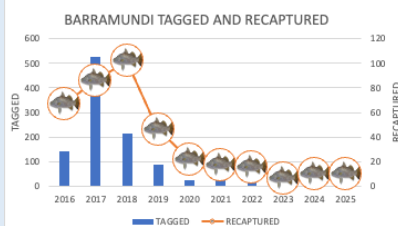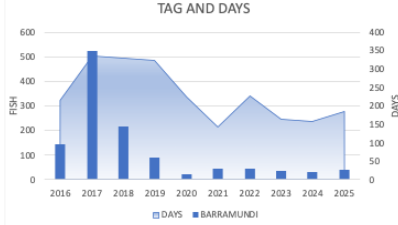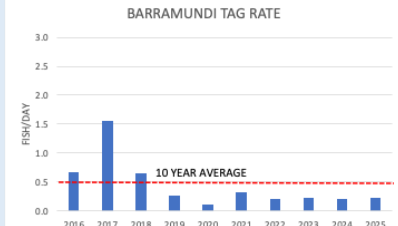
FATE

Legal fish recaptured by recreational fishers (ex-taggers) Barramundi during open season only 2021-2025		Kept	
	Barramundi	15 (42%)	
	Mangrove Jack	20 (54%)	
	Barred Javelin	6 (86%)	
	Yellowfin Bream	31 (39%)	
	Pikey Bream	20 (39%)	

LOCATIONS

Fisher activity Fish tagged (red-orange heat map) Recaptures (blue fish) 2021-2025	Fish tagged 8858 Recaptures 379 Heat map excludes fish tagged at Boyne Tannum Hook Up

BARRAMUNDI

DATA RELIABILITY

Sample size (fish/year) Tagged (blue arrow) Recaptured (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

Barramundi Tagged Recaptured 2016-2025	Tagged		1197
	Recaptured		381
	Recapture rate		31.8%
	Tagged 2025		41

BARRAMUNDI TAGGED AND RECAPTURED

Taggers Days fished Tagged fish 2016-2025	High	Low	Now
	Fisher days		
	2017	2021	2025
	337	144	185
	Catch		
	2017	2020	2025
	525	23	41

TAG AND DAYS

Tag rates Fish/day 2016-2025	High	Low	Now
	Catch rate		
	2017	2020	2025
	1.6	0.1	0.2

BARRAMUNDI TAG RATE

LENGTHS

Lengths (mm) **Tagged fish** **Bars show length range** **Dots show outliers** **2016-2025**	High	Low	Now
	Average length (mm)		
	2018	2022	2025
	751	629	817
	Max length (mm)		
	2016	2020	2025
	1200	1040	1150

All fish lengths percentage **Undersize <580mm** **Legal 580-1000mm** **Trophy 1000+mm** **2016-2025**	High	Low	Now
	Legal-trophy		
	2018	2022	2025
	66%	36%	66%
	Trophy		
	2023	2016	2025
	16%	6%	24%

MOVEMENT

Barramundi distance moved (km) 2016-2025	Recaptures 142	
	Same area 71 (50%)	
	1-9km 47 (33%)	
	10-24km 19 (13%)	
	25+km 3 (2%)	
	Elsewhere 2 (1%)	
Barramundi tagged (pink fish) recaptures outside Gladstone maps (blue fish) 2016-2025		
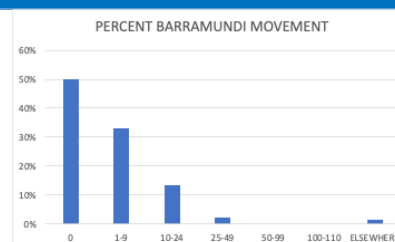
PERCENT BARRAMUNDI MOVEMENT
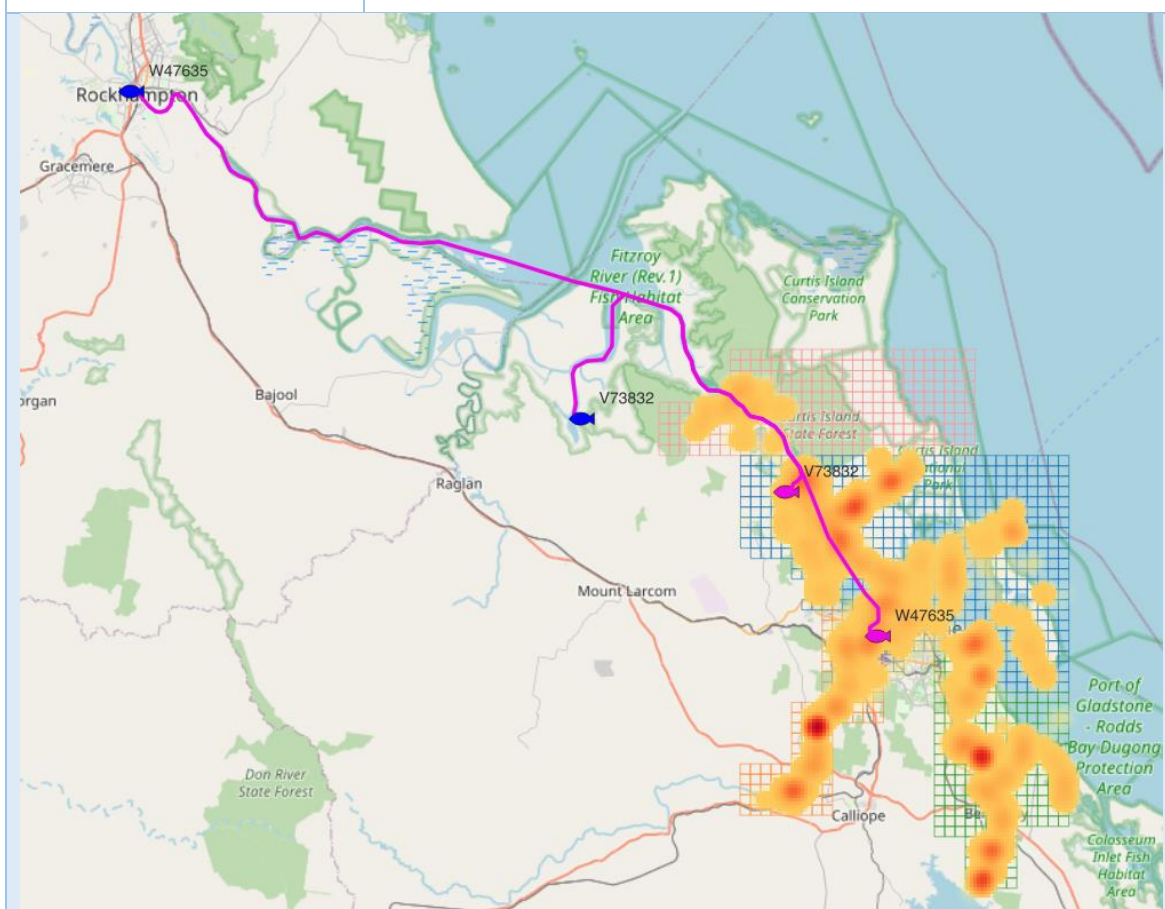
LOCATIONS		
Barramundi Tagged (red-orange heat map) Recaptured (blue fish) 2016-2025	Tagged Recaptured	1197 381

RECAPTURE RATE

Recapture rate by tag length (mm) All years	Length (mm)	Recap rate
	200-579	17.4%
	580-749	17.0%
	750-999	14.7%
	1000-1199	14.7%
	1200-	14.5%
	All	16.3%

BARRAMUNDI RECAPTURE RATE BY TAG LENGTH
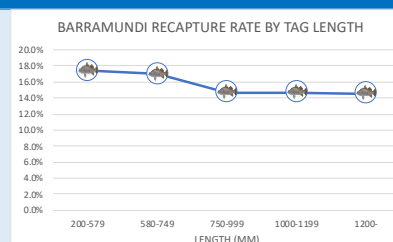
SURVIVAL

Annual survival rate Percentage recaptures each year All years	Annual survival rate	
	Overall	0.52 (52%)
	Year 1	0.42 (42%)

GLADSTONE BARRAMUNDI ANNUAL SURVIVAL RATE
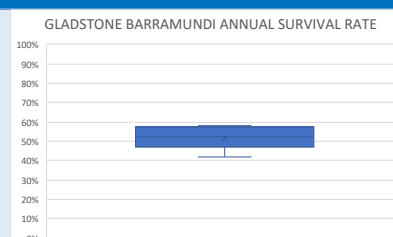
Years survival after tagging All years	Survival by years out	
	Year	Recaps
	1	1215
	2	510
	5	73
	8	6
	9.4 (max)	1

BARRAMUNDI SURVIVAL
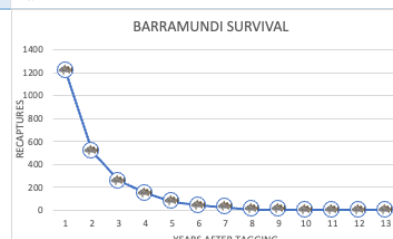
GROWTH

Barramundi growth by length in first year after tagging (mm/year) All years	Tag length 400-499 112mm/year Tag length 700-799 76mm/year Tag length 1000-1099 35mm/year

BARRAMUNDI GROWN 1 YEAR AFTER TAGGING (MM)
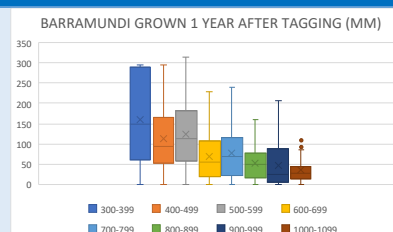
FATE

Fate of recaptured legal Barramundi by recfishers (ex-taggers) 2016-2020 2021-2025		Kept
	2016-2020	83 (51%)
	2021-2025	15 (42%)

FATE OF LEGAL RECAPTURED BARRAMUNDI
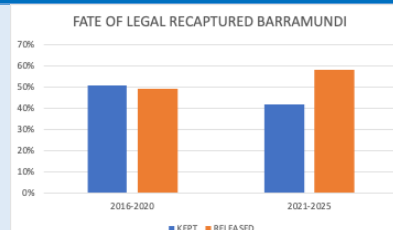
MANGROVE JACK

DATA RELIABILITY

Sample size (fish/year)	Reliability level	LOW		MODERATE	MODERATE		HIGH
Tagged (blue arrow)	Samples	10	41	68	271	384	664
Recaptured (orange arrow)	Confidence	80%	80%	90%	90%	95%	99%
Confidence %	Error	20%	10%	10%	5%	5%	5%
Error %							
2021-2025							

TAGGED AND TAG RATE

Mangrove Jack Tagged Recaptured 2016-2025	Tagged		1272
	Recaptured		125
	Recapture rate		9.8%
	Tagged 2025		92

MANGROVE JACK TAGGED AND RECAPTURED
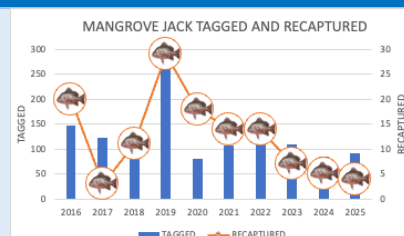
Taggers Days fished Tagged fish 2016-2025	High	Low	Now
	Fisher days		
	2019	2021	2025
	136	26	20
	Catch		
	2019	2020	2025
	262	81	69

TAG AND DAYS
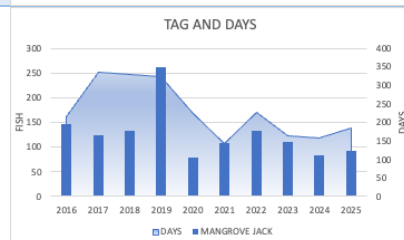
Tag rate Fish/day 2016-2025	High	Low	Now
	Catch rate		
	2021	2017	2025
	0.8	0.4	0.5
	10 year average		0.55

MANGROVE JACK TAG RATE
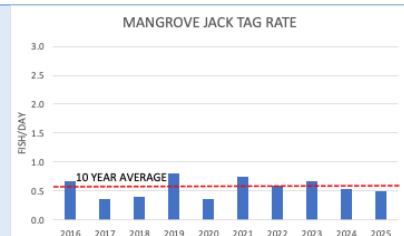
LENGTHS

Tag lengths of fish (mm) **Bars show length range** **Dots show outliers** **2016-2025**	High	Low	Now	
	Average length (mm)			
	2022	2019	2025	
	400	336	373	
	Max length (mm)			
	2021	2017	2025	
	685	510	565	
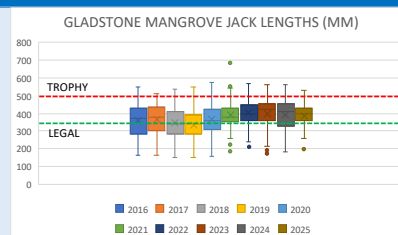
Percentage **Undersize <350mm** **Legal 350-500mm** **Trophy 500+mm** **2016-2025**	High	Low	Now	
	Legal-trophy			
	2021	2019	2025	
	79%	42%	68%	
	Trophy			
	2023	2019	2025	
	9%	3%	2%	
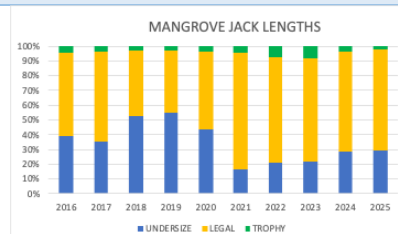
Size composition influenced by live fish weigh-in at BTHU where only legal fish can be presented.

SURVIVAL

Years survival after tagging **All years**	Survival rate by years out		
	Year	Recaps	
	1	276	
	2	86	
	5	8	
	5.8 (max)	1	
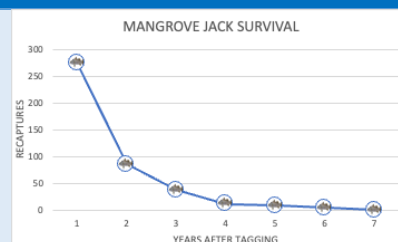
GROWTH

Growth (mm/year) **All years**	Growth at end of year (mm)		
	Year 1	64	
	Year 2	96	
	Year 3	114	
	Year 4	127	

Growth chart equation: $y = 45.439\ln(x) - 204$
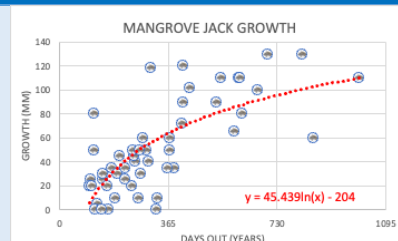
FATE

Fate of recaptured legal **Mangrove Jack by** **recfishers (ex-taggers)** **2016-2020** **2021-2025**		Kept	
	2016-2020	24 (47%)	
	2021-2025	20 (54%)	
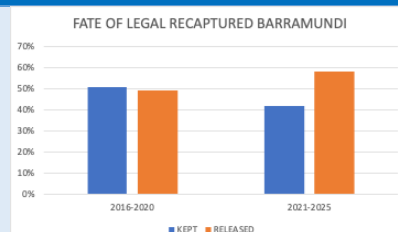
MOVEMENT

Mangrove Jack distance moved (km) 2016-2025	Recaptures Same area 1-9km 10-24km 25+km	93 65 (56%) 22 (19%) 5 (4%) 1 (1%)	
Mangrove Jack movement over time Distance (km) Time (days) 2016-2025	Furthest moved Days out	22km 70	
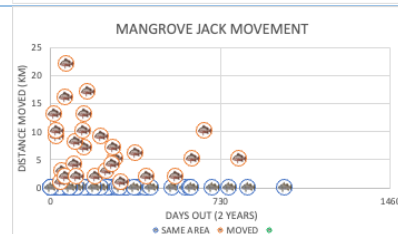
OFFSHORE MOVEMENT

Mangrove Jack Offshore recaptures Tagged (pink fish) Recaptured (blue fish) All years	Z27664 recaptured prior to GBRMPA zoning as green zone
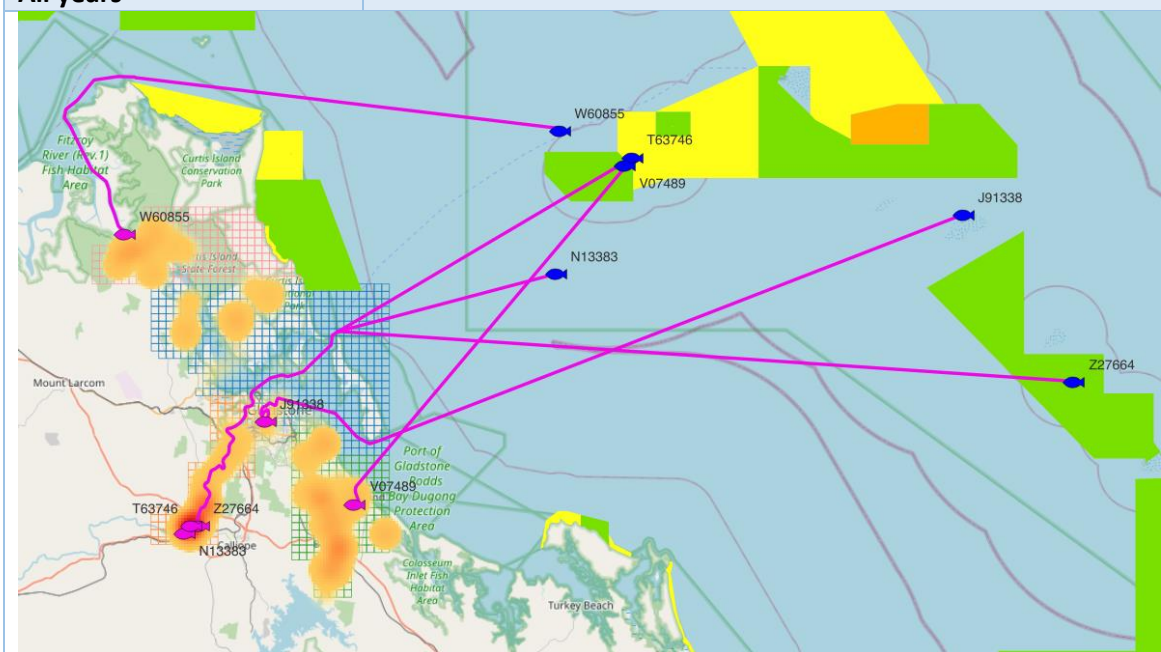
LOCATIONS	
Mangrove Jack **Tagged** **(red-orange heat map)** **Recaptured** **(blue fish)** **2016-2025**	Tagged 972 Recaptured 129 Heat map excludes fish tagged at Boyne Tannum Hook Up
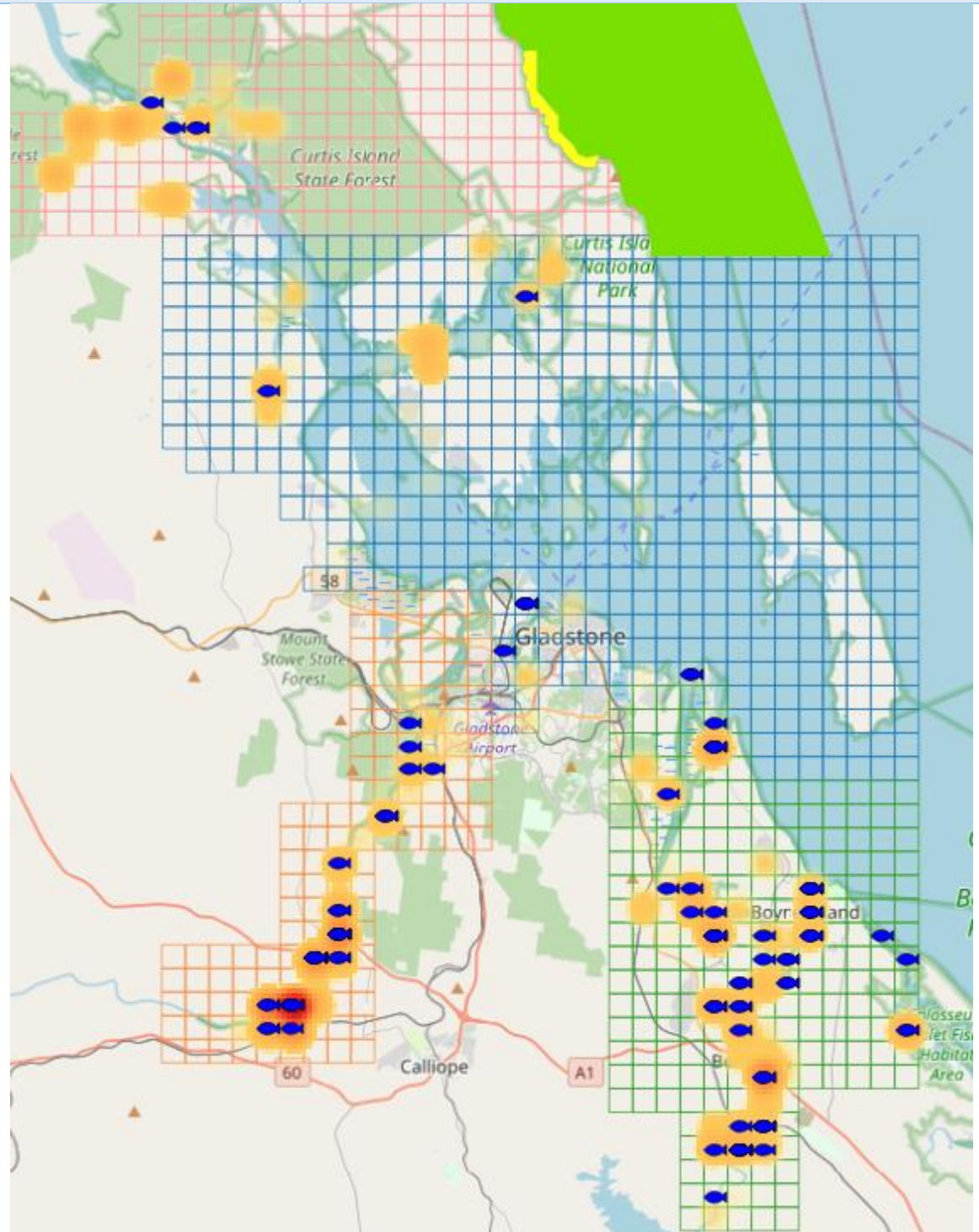
YELLOWFIN BREAM

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

Yellowfin Bream
Tagged
Recaptured
2016-2025

Tagged	3783
Recaptured	132
Recapture rate	3.5%
Tagged 2025	736
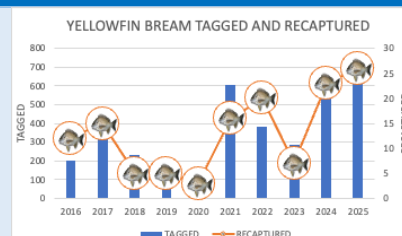
LENGTHS

Lengths of fish (mm)
Bars show length range
Dots show outliers
2016-2025

	High	Low	Now
	Average length		
	2017	2020	2025
	294	256	282
	Max length		
	2019	2018	2025
	415	385	410
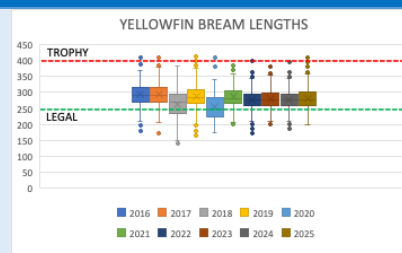
Fish lengths percentage
Undersize <250mm
Legal 250-400mm
Trophy 400+mm
2016-2025

	High	Low	Now
	Legal-trophy		
	2017	2020	2025
	98%	48%	93%
	Trophy		
	2020	21-24	2025
	2%	0%	0%
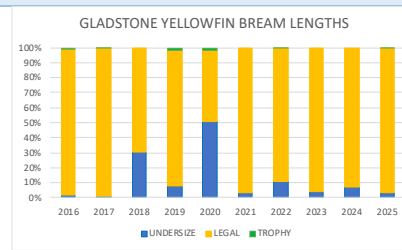
Size composition influenced by live fish weigh-in at BTHU where only legal fish can be presented.

MOVEMENT

Yellowfin Bream movement (km) 2016-2025		
Recaptures	93
Same area	65 (70%)
1-9km	20 (22%)
10-24km	8 (9%)
25+km	0 (0%)
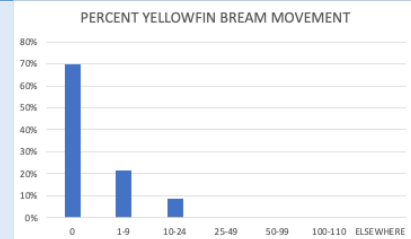
PERCENT YELLOWFIN BREAM MOVEMENT

FATE

Fate of recaptured legal Yellowfin Bream by recfishers (ex-taggers) 2016-2020 2021-2025	Kept	
2016-2020	12 (36%)
2021-2025	31 (39%)

FATE OF LEGAL YELLOWFIN BREAM RECAPTURED
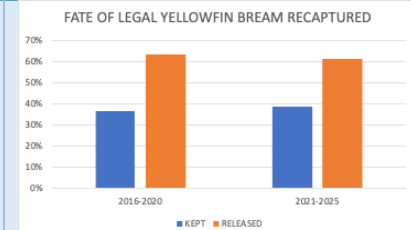
LOCATIONS

Yellowfin Bream Tagged (red-orange heat map) Recaptured (blue fish) 2016-2025	Tagged 565 Recaptured 132 Heat map excludes fish tagged at Boyne Tannum Hook Up
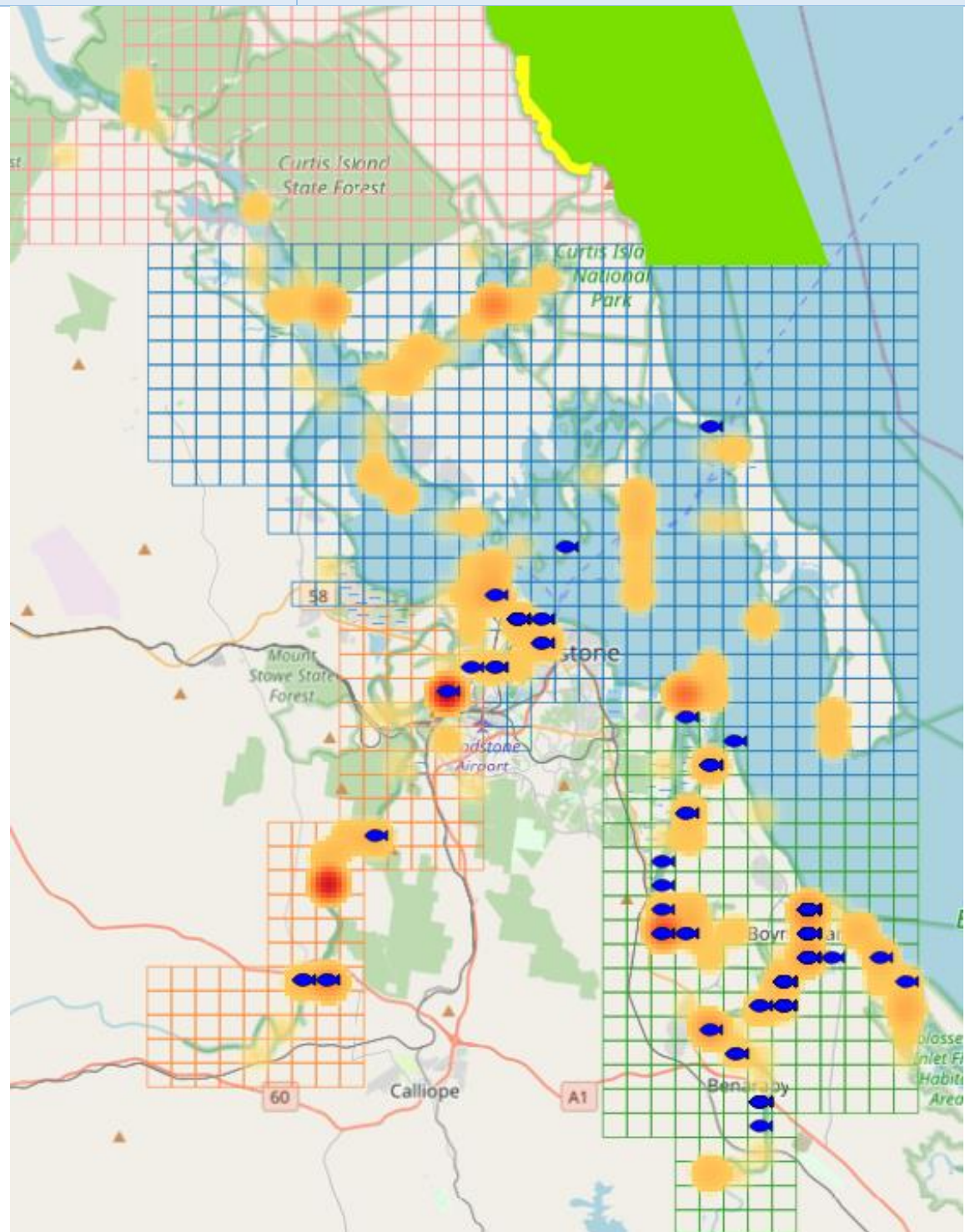
PIKEY BREAM

DATA RELIABILITY

Sample size (fish/year)	Reliability level	LOW			MODERATE	MODERATE		HIGH
Tagged (blue arrow)	**Samples**	10	41	68		271	384	664
Recaptures (orange arrow)	Confidence		80%	80%	90%	90%	95%	99%
Confidence %	Error		20%	10%	10%	5%	5%	5%
Error %								
2021-2025								

TAGGED

Pikey Bream Tagged Recaptured 2016-2025	Tagged	1445
	Recaptured	92
	Recapture rate	6.4%
	Tagged 2025	331
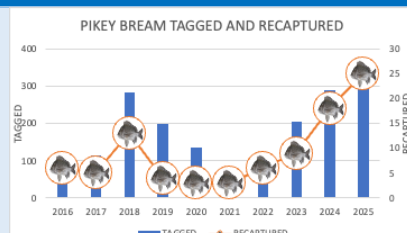
PIKEY BREAM TAGGED AND RECAPTURED

LENGTHS

Lengths of fish (mm) Bars show length range Dots show outliers 2016-2025	High	Low	Now
	Average length		
	2016	2020	2025
	284	239	273
	Max length		
	2020	2021	2025
	400	340	370
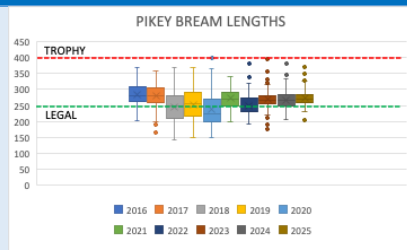
PIKEY BREAM LENGTHS

Fish lengths percentage Undersize <400mm Legal 400-600mm Trophy 600+mm 2016-2025	High	Low	Now
	Legal-trophy		
	2017	2020	2025
	89%	38%	89%
	Trophy		
	No trophy fish any year except 2020		
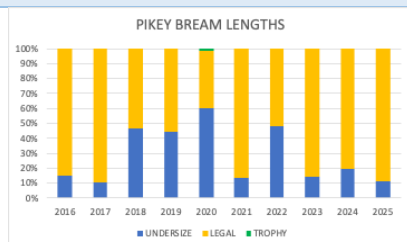
PIKEY BREAM LENGTHS

Size composition influenced by live fish weigh-in at BTHU where only legal fish can be presented.

MOVEMENT

| Pikey Bream movement (km) 2016-2025	Recaptures	84	
	Same area	35 (42%)	
	1-9km	32 (38%)	
	10-24km	16 (19%)	
	25+km	1 (1%)	
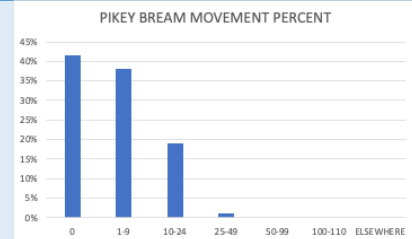
PIKEY BREAM MOVEMENT PERCENT

FATE

Fate of recaptured legal Yellowfin Bream by recfishers (ex-taggers) 2016-2020 2021-2025		Kept	
	2016-2020	11 (48%)	
	2021-2025	20 (39%)	

FATE OF LEGAL PIKEY BREAM RECAPTURED
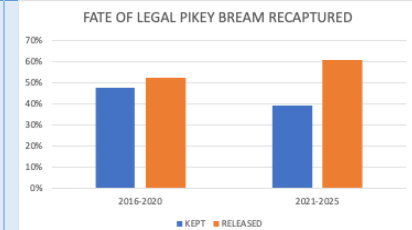
LOCATIONS	
Pikey Bream **Tagged (red-orange heat map)** **Recaptured (blue fish)** **2016-2025**	Tagged 1175 Recaptured 92 Heat map excludes fish tagged at Boyne Tannum Hook Up

BARRED JAVELIN

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

Javelin
Tagged
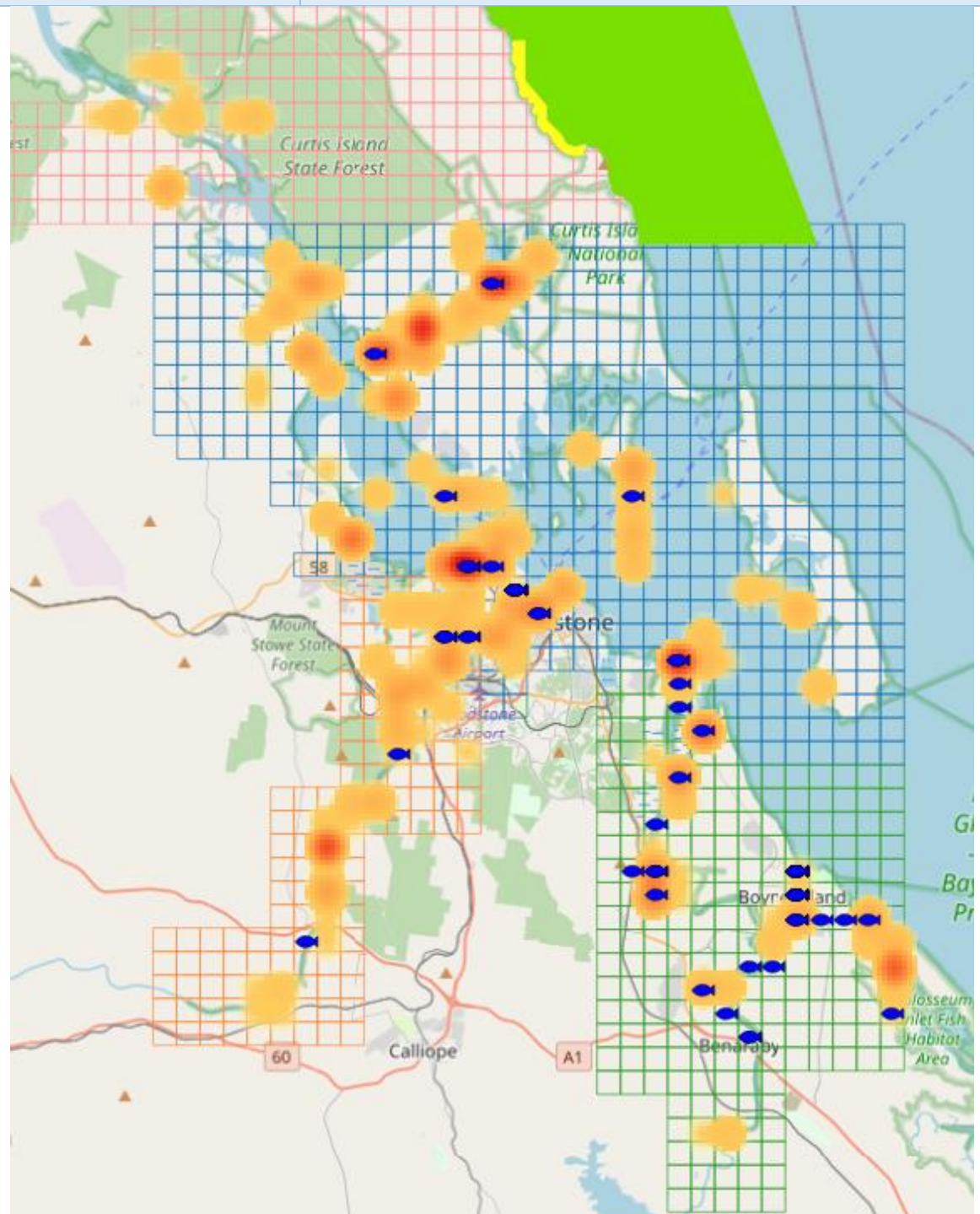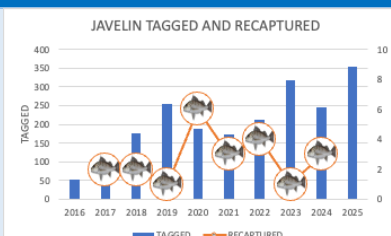**Recaptured**
2016-2025

Tagged	1701
Recaptured	22
Recapture rate	1.3%
Tagged 2025	355

JAVELIN TAGGED AND RECAPTURED

LENGTHS

Lengths of fish (mm)
Bars show length range
Dots show outliers
2016-2025

	High	Low	Now
Average length			
	2016	2023	2025
	425	359	291
Max length			
	2022	2018	2025
	710	650	730
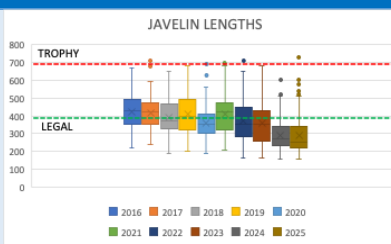
JAVELIN LENGTHS

Fish lengths percentage
Undersize <400mm
Legal 400-600mm
Trophy 600+mm
2016-2025

|	High	Low	Now
Legal-trophy			
	2016	2020	2025
	60%	27%	16%
Trophy			
	2019	2020	2025
	9%	2%	2%

JAVELIN LENGTHS

Change in size composition in 2024 due to Javelin no longer included in live fish weigh-in at BTHU. In previous years legal fish were included in live weigh-in. Lengths from 2024 more representative of catch structure.

MOVEMENT

Javelin movement (km) 2016-2025	Recaptures	21	
	Same area	11 (52%)	
	1-9km	6 (29%)	JAVELIN MOVEMENT PERCENT
	10-24km	3 (14%)	
	25+km	1 (5%)	
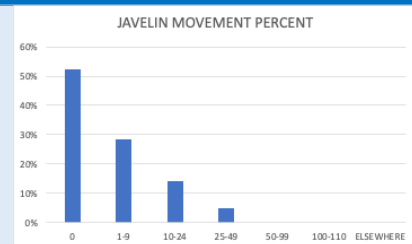
FATE

Fate of recaptured legal Javelin by recfishers (ex-taggers) 2016-2020 2021-2025		Kept	
	2016-2020	4 (100%)	
	2021-2025	6 (86%)	FATE OF LEGAL RECAPTURED JAVELIN
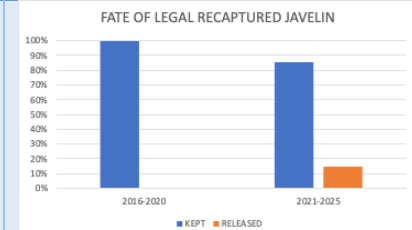
LOCATIONS

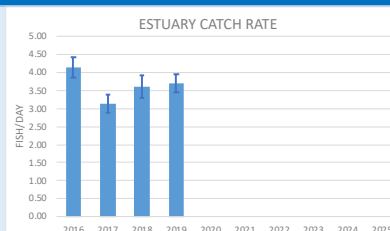| Barred Javelin Tagged (red-orange heat map) Recaptured (blue fish) 2016-2025	Tagged 1701 Recaptured 22 Heat map excludes fish tagged at Boyne Tannum Hook Up
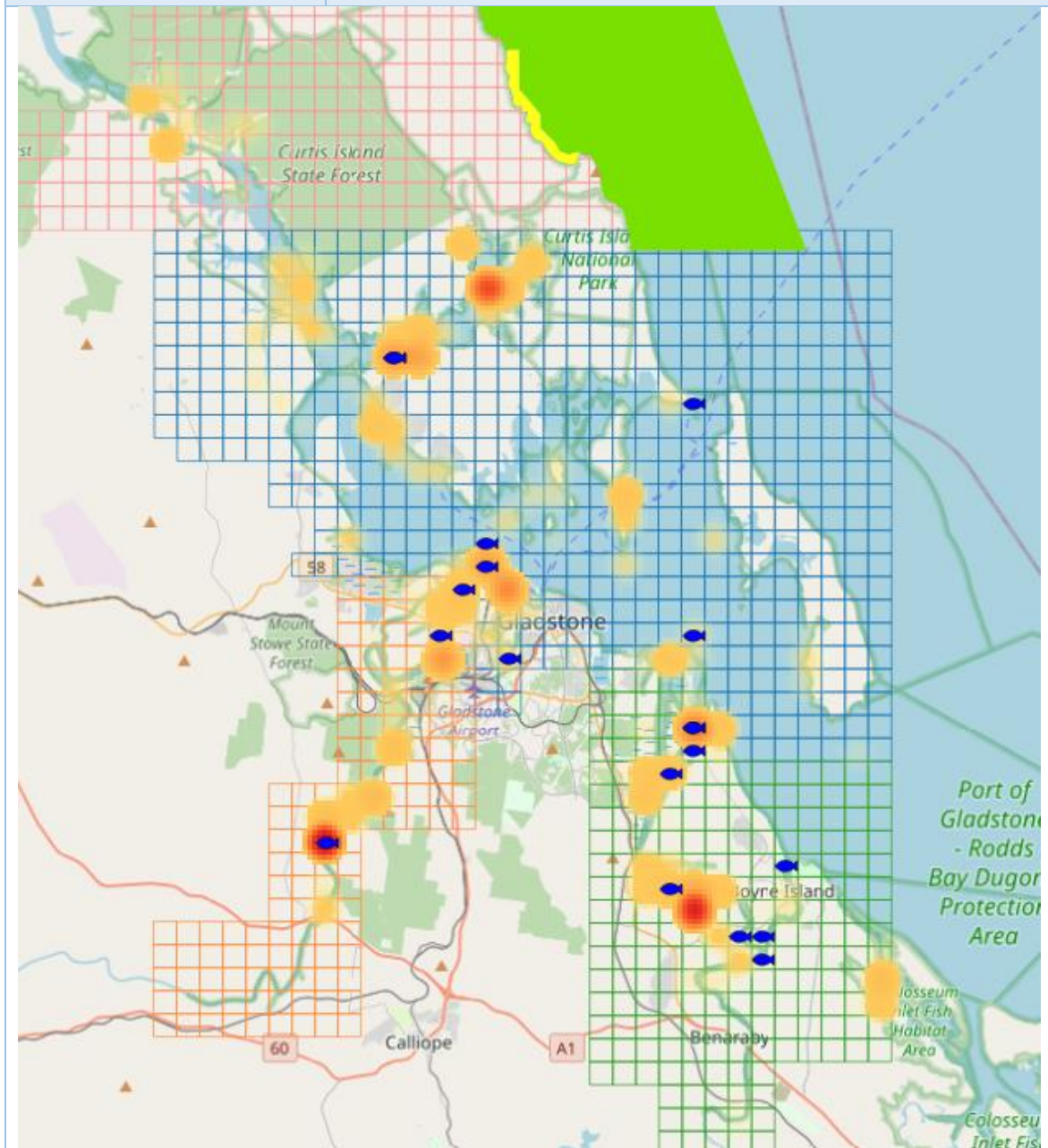
BOYNE TANNUM HOOK UP COMPETITION

	Boyne Tannum Hookup 2016-2025 Event cancelled in 2020 due to Covid-19 restrictions	

BOAT RAMP SURVEYS

Boat ramp surveys **Estuary catch rates** **(fish/day)** **2016-2025** **(no surveys after 2019)**	High Catch rate 2016 4.2	Low 2017 3.1	Now 2025 NA	
Boat ramp surveys **Estuary catch rates** **(fish kept/day)** **2016-2025** **(no surveys after 2019)**	High Kept fish catch rate 2018 0.3	Low 2019 0.05	Now 2025 NA	
Boat ramp surveys **Bream catch** **(Yellowfin and Pikey)** **(Fish/day)** **2016-2025** **(no surveys after 2019)**	High Bream catch rate 2016 1.7	Low 2018 1.3	Now 2025 NA	
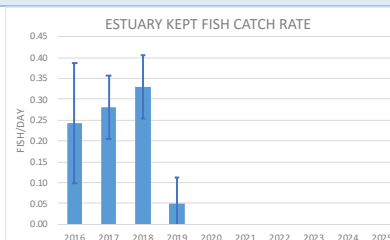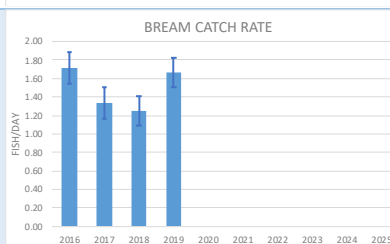
TAGGED

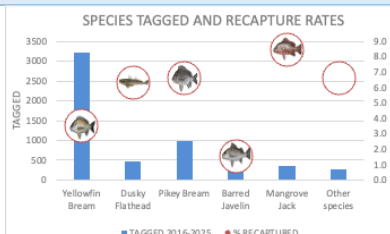|				
Live weigh-in **Fish tagged** **Recaptures from each year** **2016-2025**	High Fish tagged 2021 938 Recaptured (%) 2024 6.7%	Low 2018 412 2023 2.9%	Now 2025 998 2025 4.1%	
Species **Tagged** **Recapture rates (%)** **2016-2025**	Recapture rate Yellowfin Bream Dusky Flathead Pikey Bream Barred Javelin Mangrove Jack	3.5% 6.4% 6.6% 1.5% 8.4%		
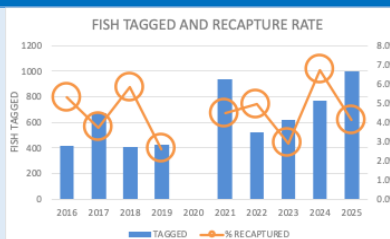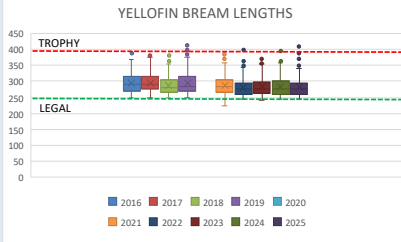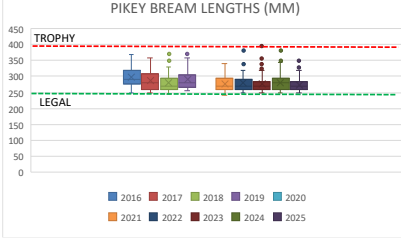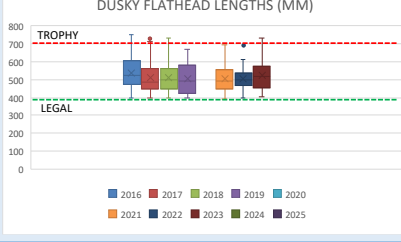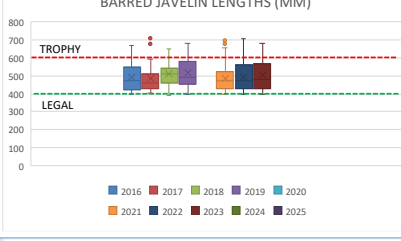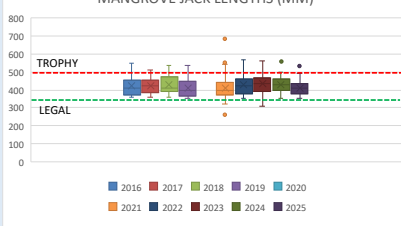
LENGTHS

Lengths of fish (mm)	High	Low	Now	
Yellowfin Bream **Bars show length range** **Dots show outliers** **2016-2025**	Average length			YELLOFIN BREAM LENGTHS
	2019	2022	2025	
	296	281	282	
	Max length			
	2019	2023	2025	
	415	380	410	
Pikey Bream **Bars show length range** **Dots show outliers** **2016-2025**	Average length			PIKEY BREAM LENGTHS (MM)
	2016	2023	2025	
	297	277	275	
	Max length			
	2023	2021	2025	
	395	340	360	
Dusky Flathead **Bars show length range** **Dots show outliers** **2016-2025**	Average length			DUSKY FLATHEAD LENGTHS (MM)
	2016	2022	2025	
	538	507	NA	
	Max lengt h			
	2016	2019	2025	
	750	670	NA	
Barred Javelin **Bars show length range** **Dots show outliers** **2016-2025**	Average length			BARRED JAVELIN LENGTHS (MM)
	2019	2013	2025	
	512	464	NA	
	Max length			
	2017	2013	2025	
	710	630	NA	
Mangrove Jack **Bars show length range** **2016-2025**	Average length			MANGROVE JACK LENGTHS (MM)
	2018	2021	2025	
	429	408	410	
	Max length			
	2021	2017	2025	
	685	510	530	

MOVEMENT

Days to recapture after release Bray Park Gladstone Marina 2016-2025	Days out	
	0-7	14 (5%)
	8-30	61 (23%)
	31-90	77 (29%)
	91-182	61 (23%)
	183-365	31 (12%)
	>365	20 (8%)
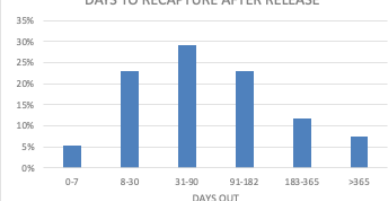
Tagged fish released at Bray Park Gladstone Marina Distance moved (km) 2016-2025		Bray Park	Marina
	Same area	42%	43%
	1-9	38%	21%
	10-24	19%	32%
	25+	1%	0%
	Max distance	43	135
	Recaps	198	53
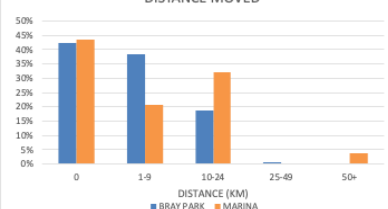
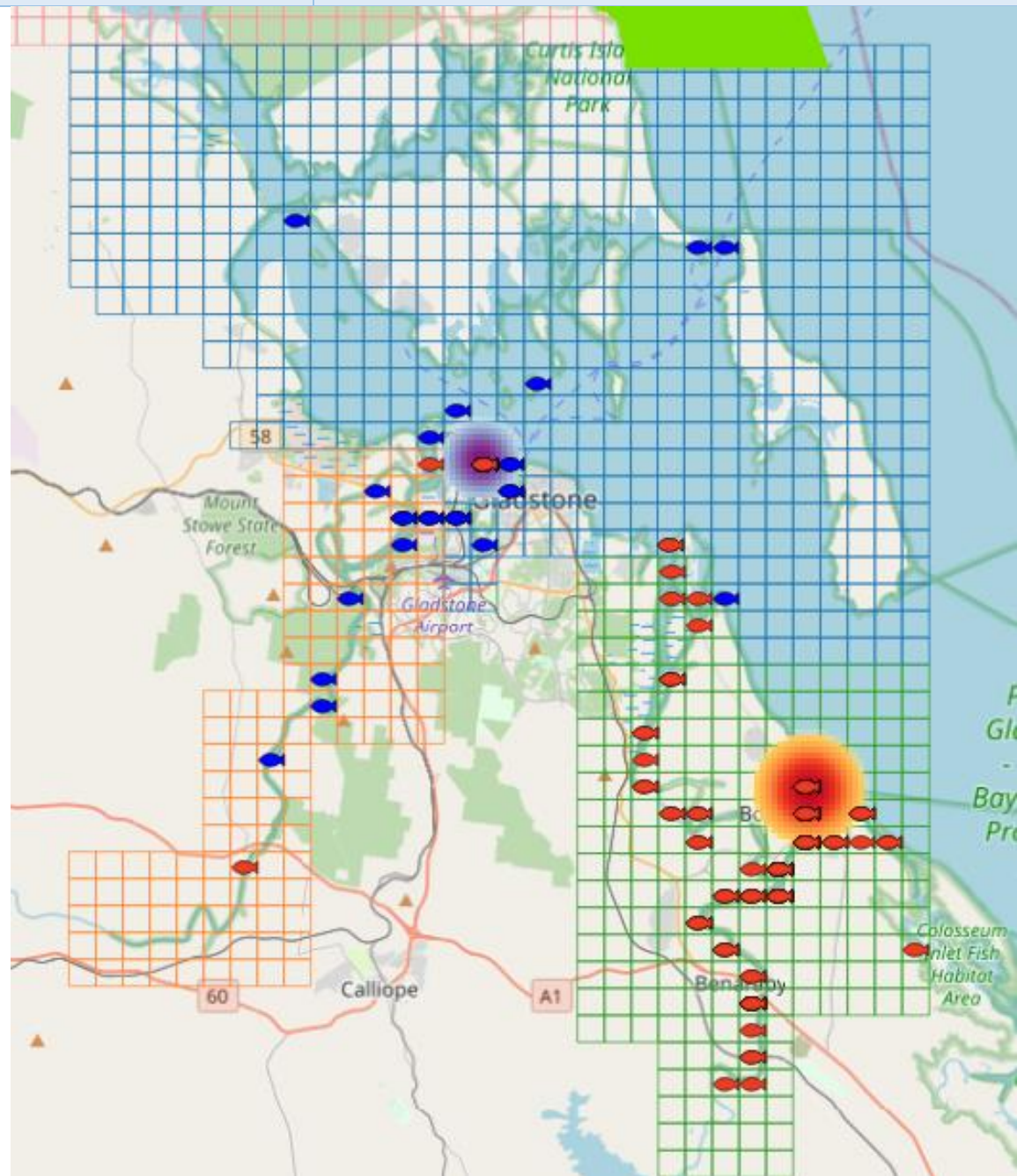**Distance moved from Bray Park 2016-2025**
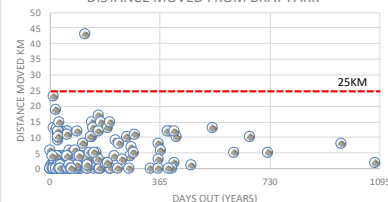
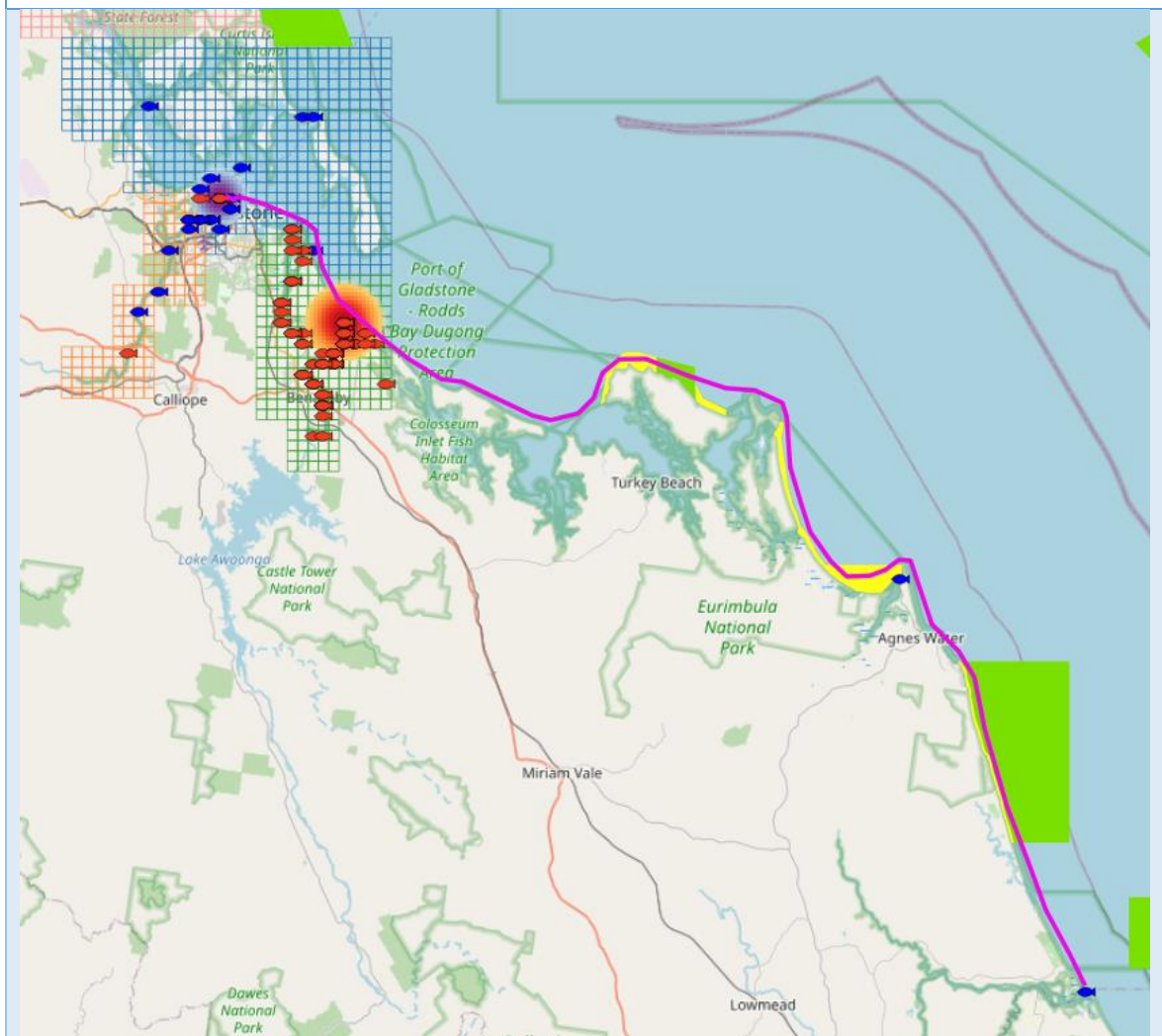**Distance moved from Gladstone Marina 2016-2025**
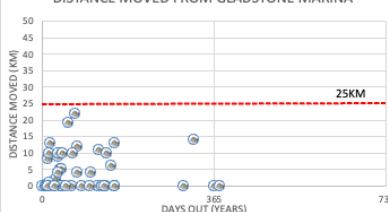
LOCATIONS

Recaptures of BTHU tagged fish Bray Park Gladstone Marina 2016-2025	Bray Park tagged (red-orange heat map) recaptures (red fish) Marina (purple-blue heat map) recaptures (blue fish)

Recaptures of Flathead tagged in Boyne Tannum Hook Up moved outside area
2016-2025

Data sources

Data used in the Gladstone Crystal Bowl are:
- Tag records and recapture records at http://crystalbowl.infofishaustralia.com.au/.
- Boyne Tannum Hook Up competition records at http://crystalbowl.infofishaustralia.com.au/.
- Calliope River flows from Castlehope Station 132001A at https://water-monitoring.information.qld.gov.au/.
- Gladstone rainfall from Gladstone Airport station 039326 from http://www.bom.gov.au/climate/data/index.shtml
- Awoonga Dam level data provided by Gladstone Area Water Board.

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 T20 fishers (taggers) with a minimum of 12 fisher days (at least 1 per month) to provide a reliable catch rate.
- Recapture rates relate to fish tagged in a particular year.
- Growth calculated using logarithmic curve from recaptures where fish were out for 90 days or more and had positive growth.
- Survival rates are calculated based on a model that uses the reduction in the numbers of recaptures each year after tagging.
- Movement distances calculated as the shortest distance by water from the tag to recapture location using Google Earth.
- Proxy travel distance from the recapture fisher's home (address, suburb, city or postcode) to the recapture location is the straight-line distance between locations based on Google Earth coordinates with local <60km, intrastate >=60km and Qld postcodes, and interstate postcodes other than Qld.
- Gender based on names of recapture fishers excluding taggers.