



STANAGE BAY REVIEW 2024

INFORMATION RATING



Key species: Barramundi, Golden Snapper, King Threadfin

Fish timeframe: 2015-2024

Fisher timeframe: 2020-2024

The Stanage area includes Broadsound creeks, Shoalwater Bay creeks, Port Clinton, Herbert Creek, Styx River and St Lawrence River. The area includes the Shoalwater Bay Military Training Area with area closures during military exercises.

Stanage is a small coastal settlement remote from any major population centres with limited facilities for visiting fishers. A tidal range of 8m makes for challenging fishing conditions on the big tides and most of the fishing is associated with neap tides.

A trip to Stanage involves about 100km of dirt road which can be badly affected by heavy rainfall. Most that fish the area come from Rockhampton, Gladstone and Mackay and trips are mostly several days in duration due to the long travel distances.

The area also has extensive green zones (no fishing) limiting the areas that can be fished.

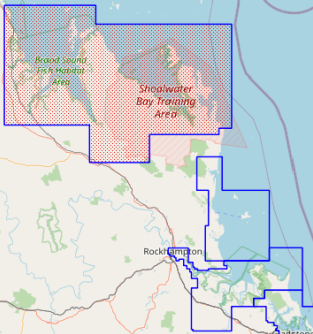
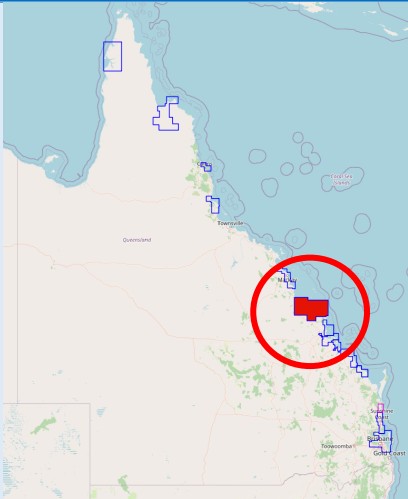
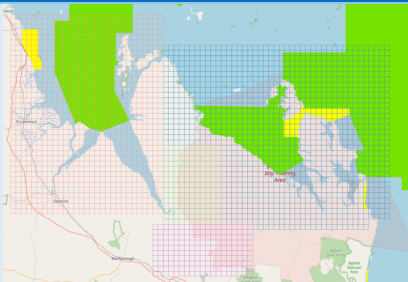
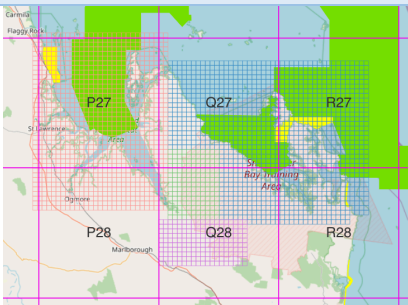
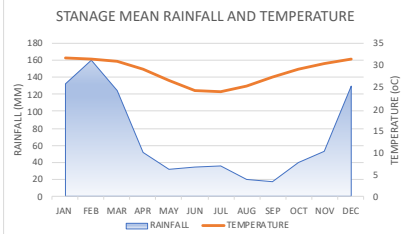
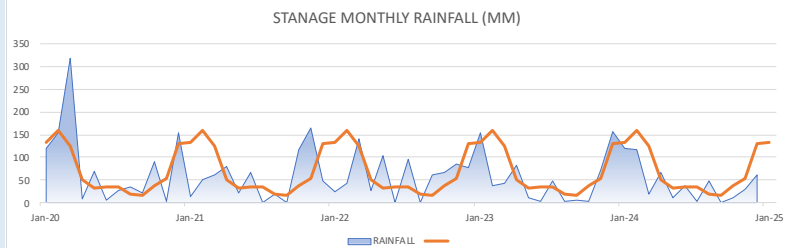
The area still draws fishers that see the remoteness, low fishing pressure and limiting factors as attractive and challenging.

All this results in data from the area being limited however it still provides basic information that is indicative of the fishing in the area.

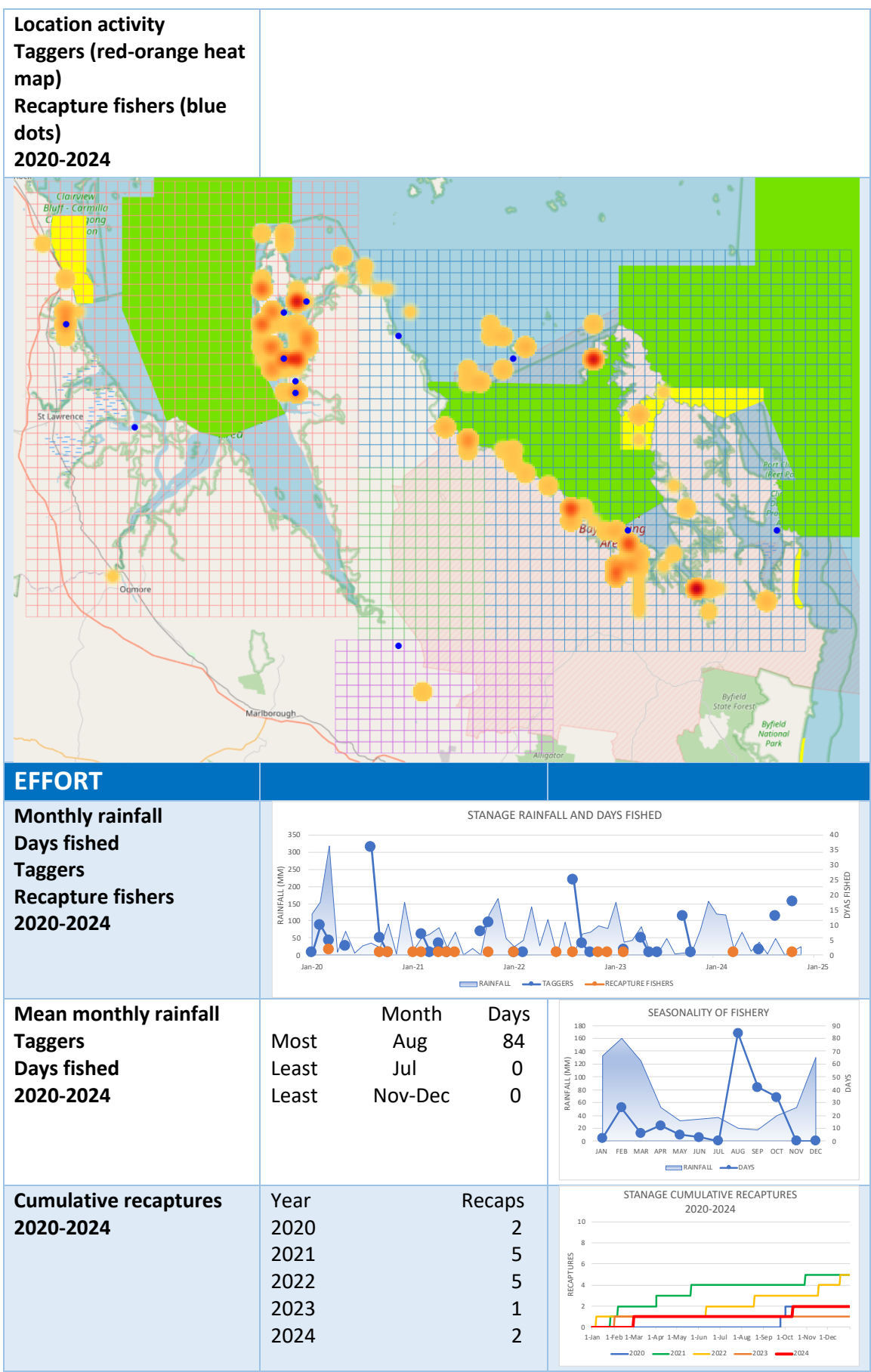
Main target species are Barramundi, Golden Snapper and King Threadfin which account for 59% of the tagging effort. There is also fishing for reef species around the islands.

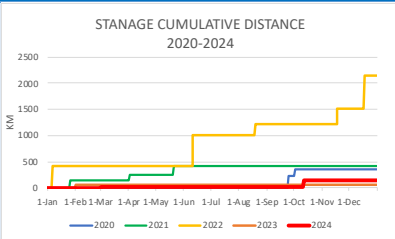
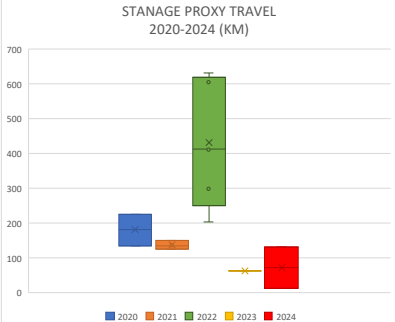
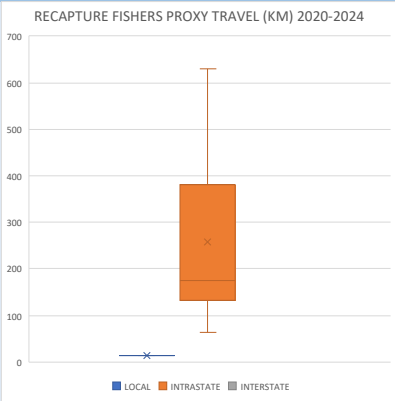
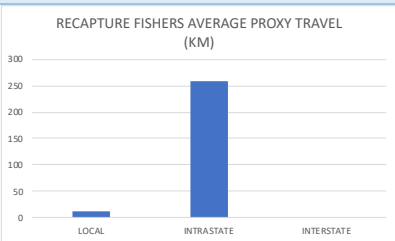
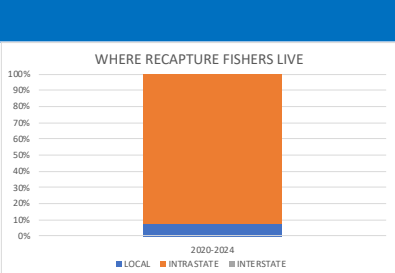
In 2015 and 2016 most of the tagging was carried out by Captag taggers in the creeks at the southern end of Shoalwater Bay with the support of the Department of Defence which boosted fishing effort. Since then, most of the tagging has been around the Stanage and Thirsty Sound areas with an occasional long-distance trip to the creeks at the southern end of Shoalwater Bay.

The low fishing activity results in fewer recaptures of tagged fish however there were 2 recaptures of Golden Snapper outside the area that were caught north of Mackay and around the Whitsundays having moved over 200km.

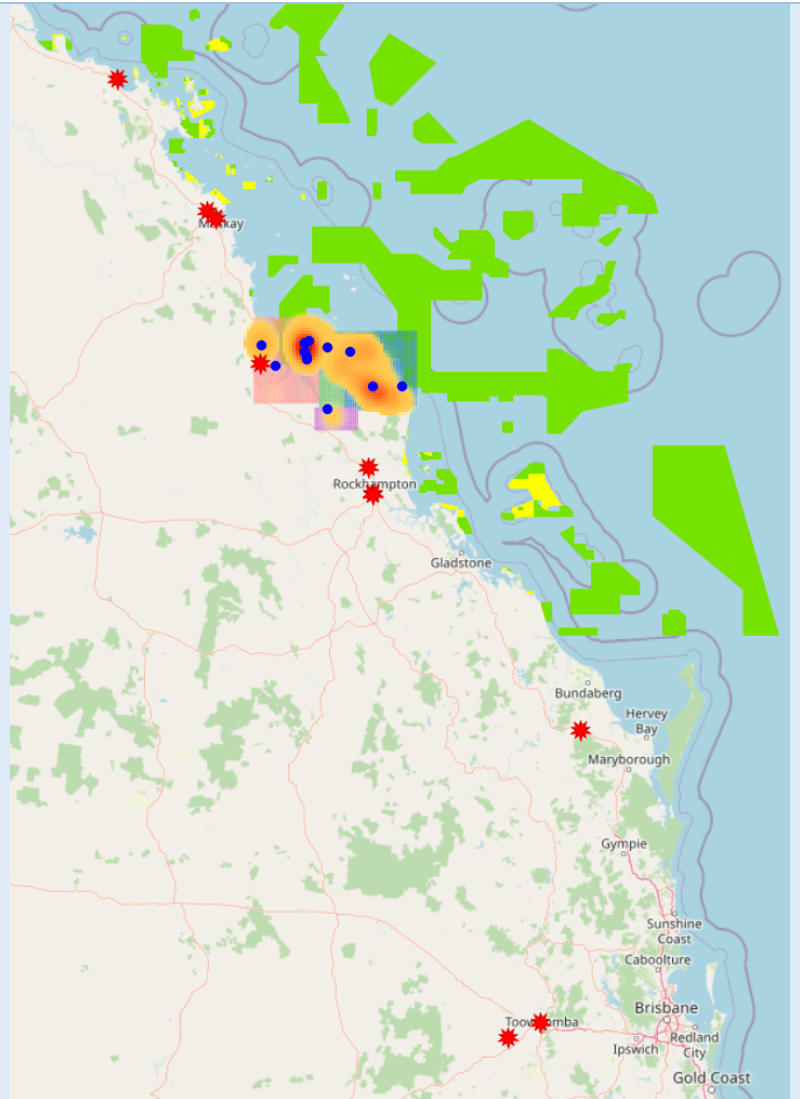
STANAGE		LOCATION										
	Stanage 22.1°S 150.0°E											
WATERWAYS	ACTUAL	GRAPH or MAP										
Stanage including GBRMPA Conservation and Marine National Parks zonings Grid maps BSD SWB HCK TOR	Stanage Bay Broadsound Shoalwater Bay Creeks Port Clinton Herbert Creek Styx River St Lawrence Creek											
Commercial QFISH Grids	Grids P27 Q27 R27 P28 Q28 R28											
ENVIRONMENTAL	ACTUAL	GRAPH or MAP										
Stanage (Williamson) Mean monthly rainfall (mm) Mean monthly air temperature (oC)	<table><tr><td>Rainfall</td><td>Max (mm)</td></tr><tr><td>Feb</td><td>160</td></tr><tr><td>Temperature</td><td>Max (oC)</td></tr><tr><td>Jan</td><td>32</td></tr><tr><td>Feb</td><td>31</td></tr></table>	Rainfall	Max (mm)	Feb	160	Temperature	Max (oC)	Jan	32	Feb	31	<div>STANAGE MEAN RAINFALL AND TEMPERATURE</div> 
Rainfall	Max (mm)											
Feb	160											
Temperature	Max (oC)											
Jan	32											
Feb	31											
Stanage (Williamson) monthly rainfall and monthly mean rainfall (mm) 2020-2024	<div>STANAGE MONTHLY RAINFALL (MM)</div> 											




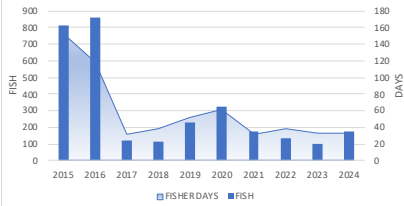
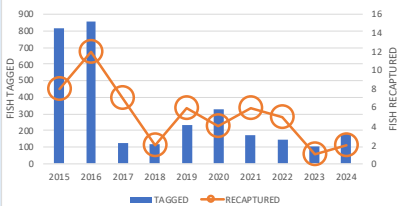
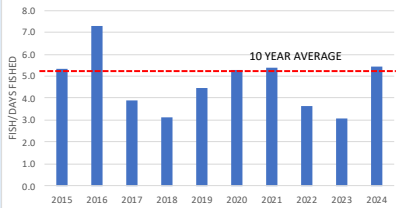
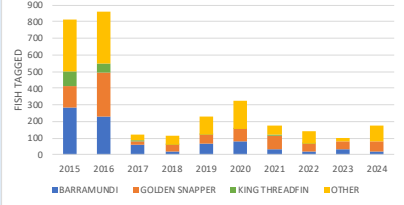
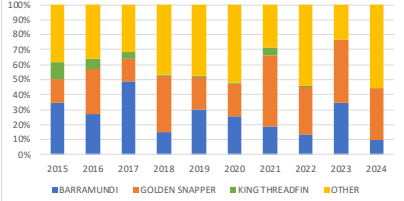
FISHERS		ACTUAL	GRAPH or MAP
DATA RELIABILITY			
Sample size (days fished)		Reliability level	
Tag days (blue arrow)		Samples	10
Recaps (orange arrow)			41
Confidence %			68
Error %			271
2020-2024			384
			664



TRAVEL					
Cumulative distance (km) home to recapture location 2020-2024	Year	Km			
	2020	358			
	2021	409			
	2022	2143			
	2023	63			
	2024	143			
Distance (km) home to recapture location 2020-2024					
Distance (km) home to recapture location 2020-2024 Bars show distance range Dots show outliers	Local Intrastate Interstate	Range (km)			
		13 63-630 -			
Average distance (km) from home to recapture location 2020-2024	Av distance (km)				
	Local	13			
	Intrastate	259			
	Interstate	-			
DEMOGRAPHICS					
Where recapture fishers live 2020-2024	Recapture fishers				
	Local	1	8%		
	Intrastate	12	92%		
	Interstate	0	0%		

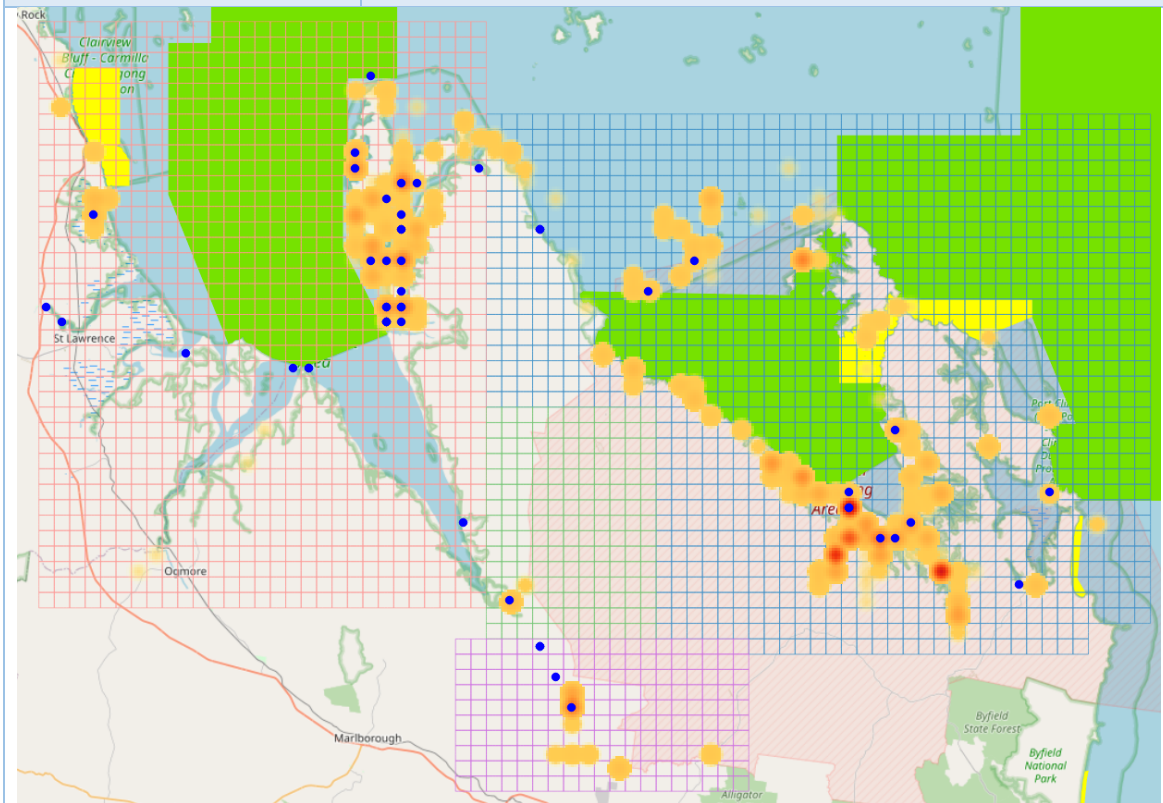
Where fishers
recapturing fish live (red
stars)
Recaptured fish (blue
dots)
2020-2024



FISH	ACTUAL	GRAPH or MAP		
BARRAMUNDI	GOLDEN SNAPPER	KING THREADFIN		
				
EFFORT				
Tag and effort taggers	High	Low	Now	
Fish tagged (3068)	Tagged fish			
Days fished (591)	2016	2018	2024	
2015-2024	857	118	179	
	Days fished			
	2015	2021	2024	
	153	32	33	
Fish tagged	Tagged	Recaptured		
Recaptures	3068	53		
2015-2024	Recapture rate			
	1.7%			
TAG RATE				
Tag rate	High	Low	Now	
All fish tagged	Tag rate			
Fish/days fished	2016	2018	2024	
2015-2024	7.3	3.1	5.4	
	10 year average			
			5.2	
SPECIES				
Species composition	Barramundi	846		
Numbers tagged	Golden Snapper	811		
2015-2024	King Threadfin	162		
Species composition	Barramundi	28%		
Percentage tagged	Golden Snapper	26%		
2015-2024	King Threadfin	5%		
	Combined	59%		

LOCATIONS

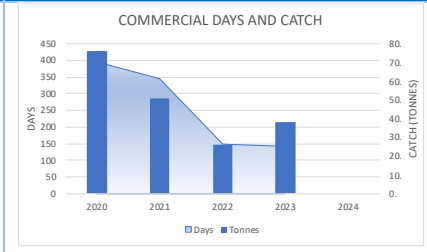
All tagged fish (red-orange heat map)
Recaptured (blue dots)
2015-2024



COMMERCIAL EFFORT

Commercial effort and catch
Net fishery (all)
Days
Catch (tonnes)
2020-2024

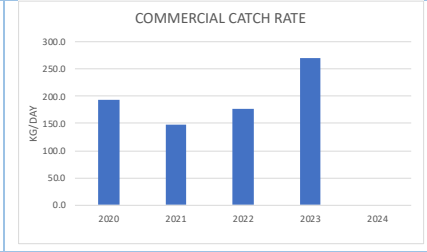
Year	Days	Catch
2020	395	26.06
2021	344	50.93
2022	148	26.20
2023	101	30.13
2024	NA	NA


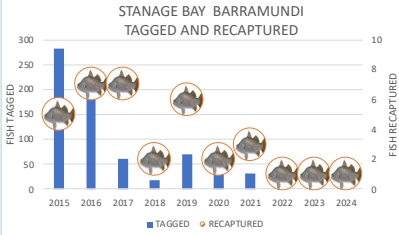
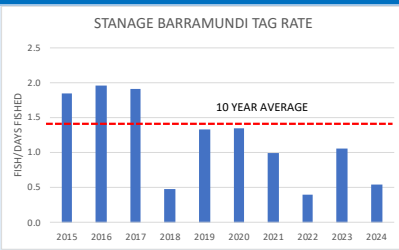
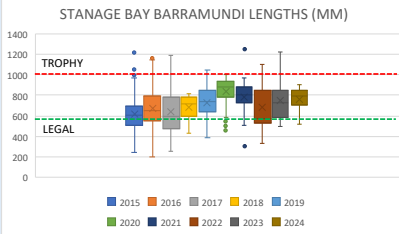
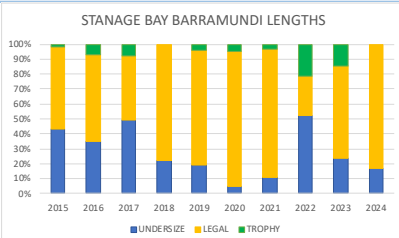


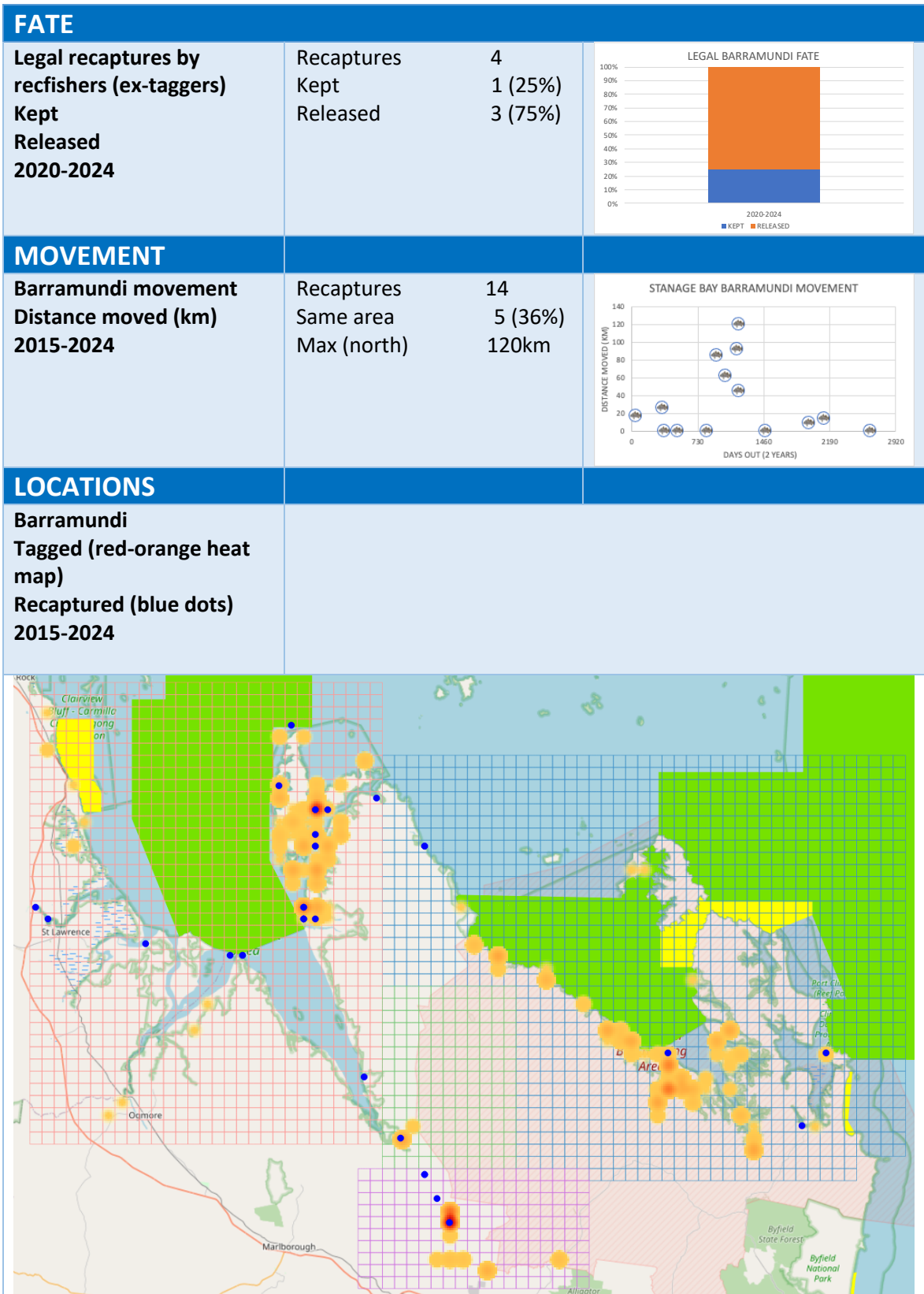
COMMERCIAL CATCH RATE


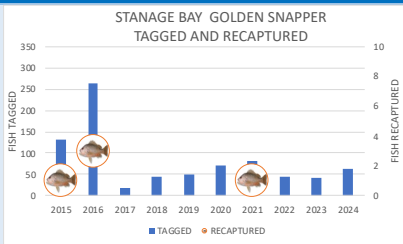
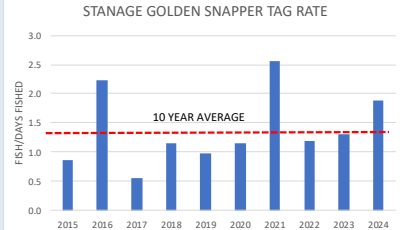
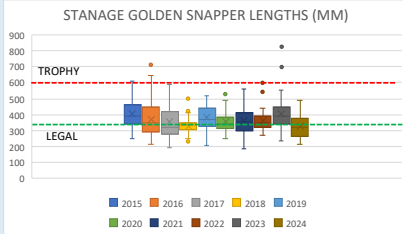
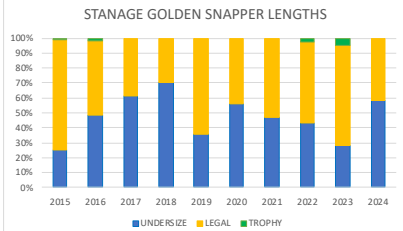
Commercial catch rate
Kg/day

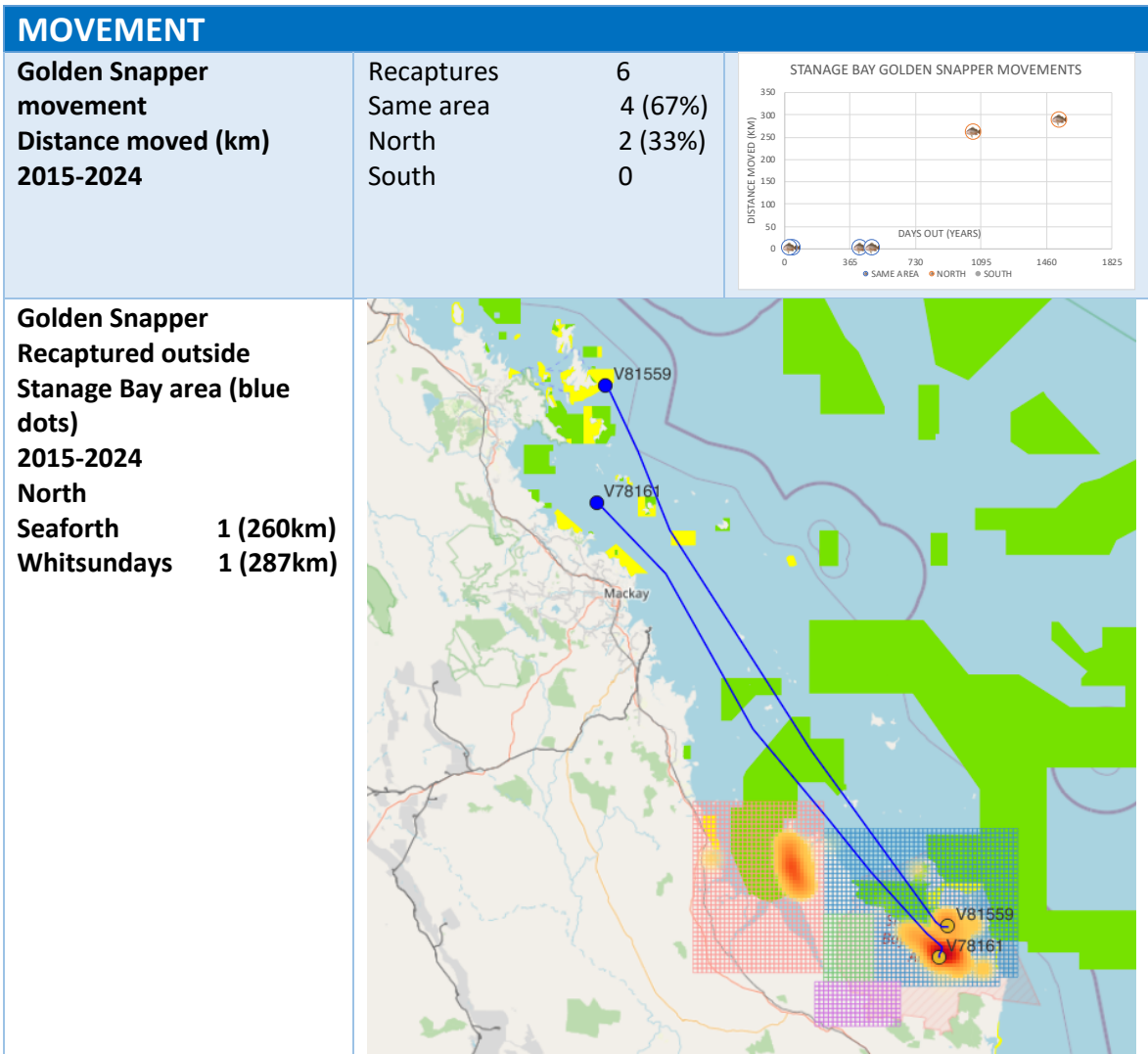
Year	Kg/day
2020	192.6
2021	148.0
2022	177.0
2023	298.3
2024	NA



BARRAMUNDI		ACTUAL		GRAPH or MAP																					
																									
DATA RELIABILITY																									
Sample size (av fish/year)		<table><tr><td>Reliability level</td><td>LOW</td><td>MODERATE</td><td>MODERATE</td><td>HIGH</td></tr><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>95%</td></tr><tr><td>Error</td><td>20%</td><td>10%</td><td>5%</td><td>5%</td></tr></table>		Reliability level	LOW	MODERATE	MODERATE	HIGH	Samples	10	41	68	271	Confidence	80%	80%	90%	95%	Error	20%	10%	5%	5%		
Reliability level	LOW	MODERATE	MODERATE	HIGH																					
Samples	10	41	68	271																					
Confidence	80%	80%	90%	95%																					
Error	20%	10%	5%	5%																					
Tagged (blue arrow)																									
Recaptures (orange arrow)																									
Confidence %																									
Error %																									
2020-2024																									
TAGGED																									
Barramundi		Tagged		Recaptured																					
Tagged		846		35																					
Recaptures		Recapture rate																							
2015-2024		4.1%																							
		Tagged 2024																							
		18																							
TAG RATE																									
Tag rate		High		Low																					
Barramundi		Tag rate		Now																					
Fish/day		2016		2022																					
2015-2024		1.9		0.4																					
		10 year average		1.4																					
																									
LENGTHS																									
Average length (mm)		High		Low																					
Bars show length range		Average length		Now																					
Dots show outliers		2020		2015																					
2015-2024		844		618																					
		Largest																							
		2021		2018																					
		1250		820																					
				2024																					
				910																					
																									
Fish lengths percentage		High		Low																					
Undersize <580mm		Legal-trophy		Now																					
Legal 580-1000mm		2020		2022																					
Trophy 1000+mm		90%		26%																					
2015-2024		Trophy																							
		2022		2018																					
		21%		0%																					
				2024																					
				0%																					
																									



GOLDEN SNAPPER		ACTUAL		GRAPH or MAP	
					
DATA RELIABILITY					
Sample size (av fish/year)		Reliability level		MODERATE	
Tagged(blue arrow)		Samples		MODERATE	
Recaptures (orange arrow)		Confidence		HIGH	
Confidence %		Error			
Error %					
2020-2024					
TAGGED					
Golden Snapper		Tagged		Recaptured	
Tagged		811		5	
Recaptures		Recapture rate			
2015-2024		0.6%			
		Tagged 2024			
		62			
					
TAG RATE					
Tag rate		High		Low	
Golden Snapper		Tag rate		Now	
Fish/day		2021		2017	
2015-2024		2.6		0.6	
		10 year average		1.3	
					
LENGTHS					
Average length (mm)		High		Low	
Bars show length range		Average length		Now	
Dots show outliers		2015		2018	
2015-2024		405		326	
		Largest			
		2023		2018	
		825		500	
				2024	
				490	
					
Fish lengths percentage		High		Low	
Undersize <350mm		Legal-trophy		Now	
Legal 350-600mm		2015		2018	
Trophy 600+mm		74%		30%	
2015-2024		Trophy			
		2023		2021	
		5%		0%	
				2024	
				0%	
					

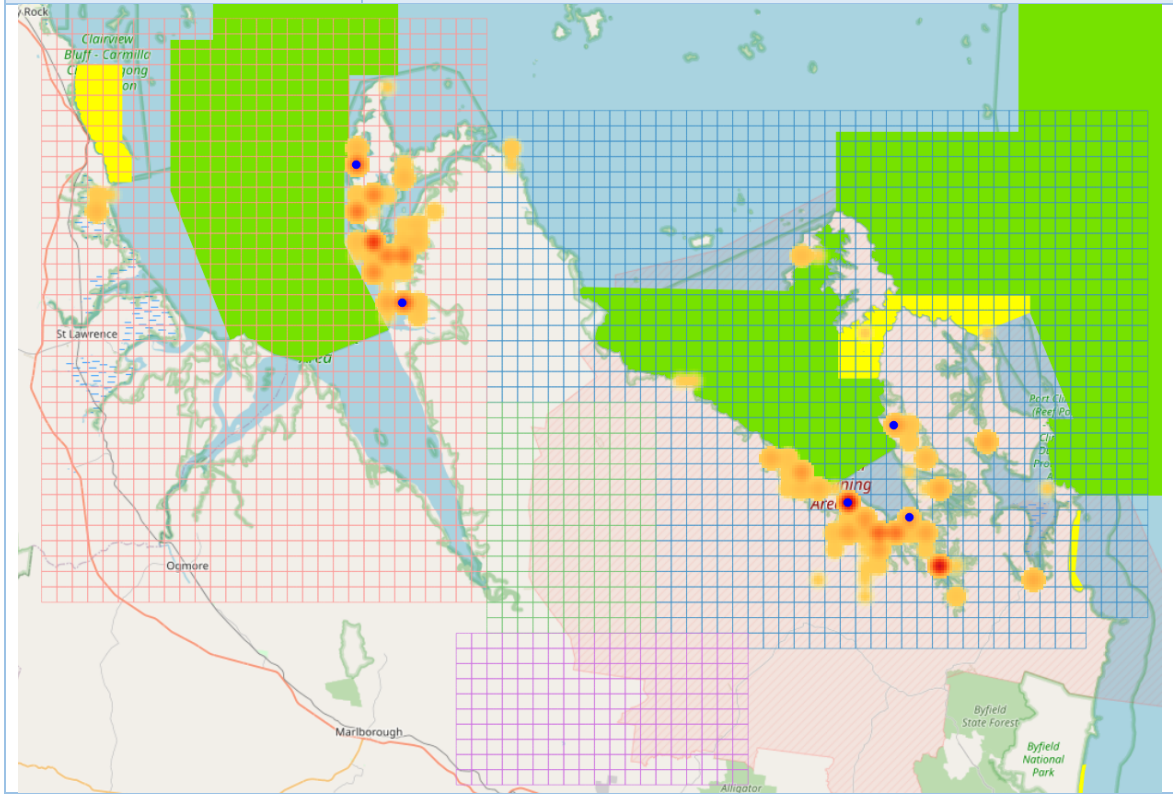




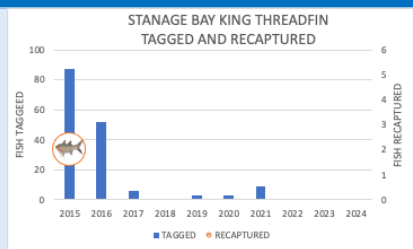
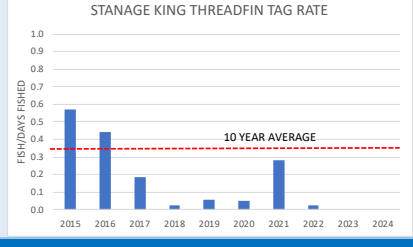
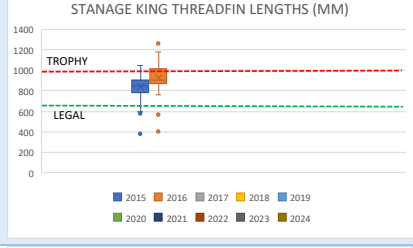
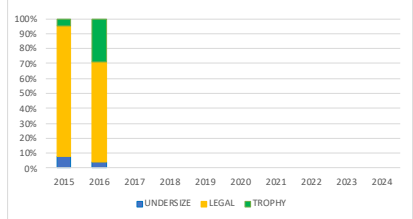
LOCATIONS

Golden Snapper
Tagged (red-orange heat
map)

Local recaptures (blue
dots)

2015-2024



KING THREADFIN		ACTUAL		GRAPH or MAP	
					
DATA RELIABILITY					
Sample size (av fish/year)		Reliability level		MODERATE	
Tagged (blue arrow)		Samples		MODERATE	
Recaptures (orange arrow)		Confidence		HIGH	
Confidence %		Error			
Error %					
2020-2024					
					
TAGGED					
King Threadfin tagged and recaptures from each year's tagging		Tagged		Recaptured	
2015-2024		162		2	
		Recapture rate			
		1.2%			
		Tagged 2024			
		0			
					
TAG RATE					
Tag rate		High		Low	
King Threadfin		Tag rate		Now	
Fish/day		2015		2018	
2015-2024		0.6		0.03	
		10 year average		0.3	
					
LENGTHS					
Average length (mm)		High		Low	
Bars show smallest to largest fish		Average length		Now	
Dots show outliers		2016		2015	
2015-2024		930		836	
		Largest		NA	
		2016		2015	
		1270		1050	
				NA	
					
Fish lengths percentage		High		Low	
Undersize <650mm		Legal-trophy		Now	
Legal 650-1000mm		2015		2016	
Trophy 1000+mm		87%		67%	
2015-2024		Trophy		NA	
		2016		2015	
		29%		5%	
				NA	
					

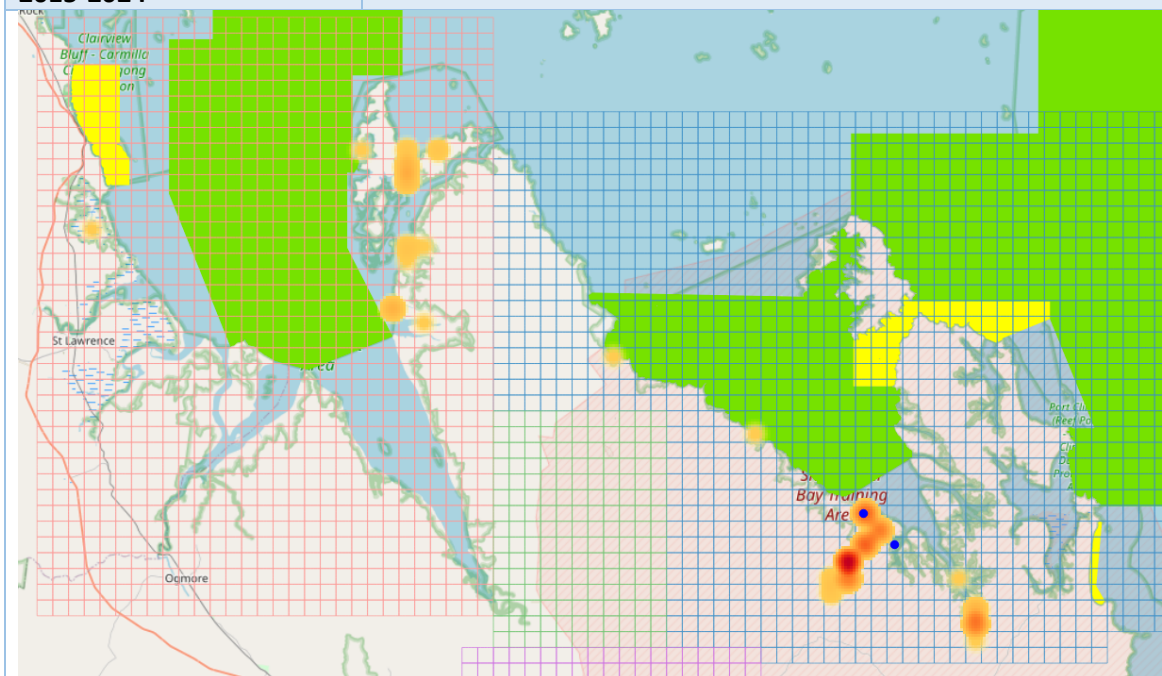
LOCATIONS

King Threadfin
Tagged (red-orange heat map)

Local recaptures (blue dots)

2015-2024

Recaptures 2
 Local (<15km) 2



Data sources

Data used in the Stanage Crystal Bowl are:

- Tag records and recapture records for the river at <http://crystalbowl.infofishaustralia.com.au/>.
- Rainfall records and temperature records from Williamson Station 33295 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 over the past 5 years.
- Catch rates calculated as number of fish tagged/fisher day for taggers with a minimum of 12 fisher days (at least 1 per month) to provide an acceptable catch rate.
- For Barramundi undersized fish are <580mm, legal fish are ≥580 and <1000mm and trophy fish are ≥1000mm.
- For Golden Snapper undersized fish are <350mm, legal fish are ≥350mm and <600mm and trophy fish are ≥600mm.
- For King Threadfin undersized fish are <650mm, legal fish are ≥650mm and <1000 and trophy fish are ≥1000mm.
- Locations based on Infofish grid map BSD, SWB, TOR and HCK 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 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 <60km, Intrastate ≥60km and Qld postcodes, Interstate postcodes other than Qld.