Tagging News

News from the ORI Cooperative Fish Tagging Project

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INCORPORATING

Helping people to care for our ocean

From the Tagging Officer...

Gareth Jordaan

Welcome to the 36th edition of the Tagging News.

For nearly four decades the Tagging News has been communicating the results of the ORI Cooperative Fish Tagging Project (ORI-CFTP) to our members and has successfully promoted ethical angling while tracking the growth rates and movement patterns of many of the common linefish species caught along the southern African coast.

The ORI-CFTP was recently privileged to give an online talk on the history and achievements of the tagging project throughout its 38-year duration (1984-2022), which was hosted by Leadership for Conservation in Africa (LCA). This talk was part of the **Unlocking Nature** series that LCA started in 2020 which allows conservationists and conservation companies to share their stories and adventures with audiences worldwide. This was a great opportunity for Dr Bruce Mann and I to share to both local and international audiences what the ORI-CFTP is all about, some of its achievements over the years and how it has helped contribute towards improving the conservation awareness and behaviour of marine recreational anglers. The talk was well received and led to some great insights and questions afterwards. If you missed the talk, not to worry, you can catch a recording of it **here**. Furthermore, the ORI-CFTP has been invited to join the 'World Volunteer Fishtag Summit 2023' which is going to be an online conference in August 2023 hosted by SUNTAG in Australia and will bring various cooperative fish tagging projects from around the world together to share, discuss and collaborate on the work they have been doing. These two platforms have played a crucial role in promoting global recognition for the ORI-CFTP. We are thrilled to have the opportunity to showcase the remarkable accomplishments of this project and to gain insights from others. The ORI-CFTP owes its current position and international collaboration prospects to the unwavering support and dedication of our tagging members. We deeply appreciate the tremendous effort each of you has contributed towards this project. Your contributions are invaluable, and we are truly grateful for your ongoing commitment! Thank you!

The year 2022 again yielded some fantastic results for the ORI-CFTP. Although the total number of new members was less (n = 249) than 2021 (most likely due to the implementation of a stricter application process by the Tagging Officer), we still had a reasonably high number of tag releases (n = 11 525) and an increased recapture rate of 8.8%! Although some long-term tagging projects came to an end in 2021, others continued to thrive (see Table on **page 15**). Overall, the total number for fish tagged (n = 375 614) and recaptured (23 635; 6.3%) since the inception of the project is a truly exceptional effort!

In 2022 our top tagger was Nic de Kock (who has been a member of the tagging project since 1984) with 446 tag releases followed by, for the third year in a row, Mark Galpin with 268 fish tagged. Nic also had the greatest number of his tagged fish recaptured in 2022 with 29 (see Table on **page 8**). Just a reminder to all taggers that it is not about the number of fish you tag, but rather the way you catch, handle, tag and release your fish (see some helpful tips **here**) that is far more important. This results in a greater chance of your fish's survival and ultimately being recaptured. Furthermore, ensuring that your tagging data is accurately recorded and sent back to the Tagging Officer is of equal importance. Over the past year, the ORI-CFTP has also been emphasising the importance of the welfare of fish tagged through our new **tagging video** on capturing, landing, handling and releasing large sharks caught from the shore, as well as **prohibiting our members tagging all ray species.**

In this year's Tagging News, you can look forward to reading some great articles including a 21-year history of fish monitoring and tagging in the iSimangaliso Marine Protected Area (**Page 4**) and the interesting work that is being done by the Coega Harbour Tagging Project (**Page 18**). You can also read about the Acoustic Tracking Array Platform (ATAP) and how this cutting-edge project is helping to 'fill in the gaps' in our knowledge of the finer movement patterns we are not able to pick up from external dart tagging done by the ORI-CFTP (**Page 24**). Our focus species for this year is the catface rockcod, because the ORI team recently published a paper on the movement patterns of this enigmatic species using both the ORI-CFTP and ATAP data (**Page 27**).

For those of you on social media, please remember to give the **ORITag FB page** a 'like' and share it with your angling buddies. Please also like and share the new **@ori_tagging_project** Instagram page. We strongly encourage those of you who have not yet seen our **instructional tagging videos** to give them a watch and encourage other anglers to watch them, especially those who may need a bit of extra hands-on advice.

Finally, I would like to say a big thank you to Dr Bruce Mann who retired from ORI at the end of February 2023 after more than 30 years of service. Bruce, your leadership and commitment to SAAMBR and the ORI-CFTP has been unwavering, and your dedication to conservation

Cover photo: Thorn Masters with a St Joseph shark he tagged and released.

and sustainability of the natural world has truly been inspirational. Thank you for all you have done, and all you will continue to do, as your legacy lives on.

We sincerely hope that you enjoy this online version of the Tagging News. **Tight-lines and happy reading!**

Acknowledgements:

Financial and administrative support from the South African Association for Marine Biological Research and the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs is gratefully acknowledged.

Thank you to all the anglers who donated funds to the ORI-CFTP in 2022.

We also thank Hallprint© Australia for their excellent service and on-going supply of high-quality tags and applicators.

Neels Koekemoer is thanked for his assistance in fitting handles to the tag applicators in 2022.

A special thanks to Marius Els, Derrick Khumalo and Xolani Mselegu for their efforts in capturing and validating the tagging data, as well as for attaching the thousands of tags to tag cards.

ORI-CFTP Fish Measuring Stretcher

The ORI-CFTP is pleased to announce the availability of our purpose made Fish Carrying and Measuring Stretchers.

Made by the competent team at Dive Factory, these stretchers are durable, light, and easy to carry in your fishing bag. They have a measuring tape (150 cm) firmly stuck down the middle of the stretcher with the excess left hanging at the end (for big fish that are longer than the stretcher). They have an aluminium "headboard" used to keep the fish flat and straight which helps improve measuring accuracy. Most importantly these fish stretchers are a perfect tool to help anglers better handle their fish. By carrying and measuring the fish in the stretcher, contact with hot dry surfaces (such as sand, rock or a boat deck) is prevented. For an example of how these stretchers are used you can watch our tagging videos here.

If you haven't done so already, you can purchase a fish measuring stretcher from the ORI Tagging Officer for R150.00 (excl. shipping) by sending your request through to oritag@ori.org.za or by WhatsApping 079 529 0711.

Twenty-one years of surf-zone fish monitoring and tagging in the iSimangaliso Marine Protected Area

By Bruce Mann (ORI Research Associate)

Bruce Mann, Pat Garratt and Simon Chater fishing north of Cape Vidal.

The 21-26 November 2022 were the dates for a bittersweet field trip. This was the last surf-zone fish monitoring and tagging field trip to Cape Vidal. The project started in November 2001 and over the following 21 years we conducted a total of 93 field trips (71 to Cape Vidal, 8 to Sodwana, 7 to Bhanga Nek, 4 to Maphelane and 3 to Mission Rocks). A total of 136 anglers participated on trips, some as part of the core team (to keep fishing effort constant) and others as guest anglers. We spent a whopping 372 days fishing which produced 26 500 angler hours of fishing effort. During this time, we caught a total of 24 681 fish (0.93 fish/angler/hour) from 118 species and 43 families. Of these fish, 11 727 were tagged and released and 1 528 were recaptured (13%), which is double that of the ORI Cooperative Fish Tagging Project.

The primary objectives of this project were: 1) to compare catches (catch rates, species composition and fish size) in no-take areas (where fishing is prohibited) with areas where fishing is allowed; 2) to study movement patterns of key angling species and determine their home range sizes; and 3) to make recommendations regarding improved methods of zonation within the Marine Protected Area (MPA). All these objectives were achieved and the value of no-take areas as an essential conservation tool was repeatedly highlighted. Some of the main outputs included the following: 1) A PhD degree (BQM); 2) direct inputs into the management and rezoning of the iSimangaliso MPA; 3) contributions to 14 peer-reviewed articles in scientific journals; 4) contributions to two book chapters; 5) 19 presentations at scientific symposia and workshops; 6) numerous public talks to fishing clubs etc.; 7) 11 popular magazine articles; 8) three television documentaries; 9) 93 field trip reports, 21 annual reports and five ORI unpublished reports. I think with this list of outputs the project can undoubtedly be considered a success!

By way of a brief overview, it is interesting to look at some of the science that came out of this project over the years. The first was determining the natural mortality rate of Natal stumpnose in the no-take area for direct input into a per-recruit stock assessment (James et al. 2004). We observed a gradual decline in the catch rate of Natal stumpnose due to the closure of the St Lucia estuarine system (Mann & Pradervand 2007). The largespotted pompano/wave garrick population was assessed as being underexploited but there was evidence of localized overfishing at public access points (Parker et al. 2013). We studied the movement patterns and high residency of the main species recaptured (speckled snapper, cave bass, catface rockcod, yellowbelly rockcod and grey grunter) (Mann et al. 2015). We estimated the optimum size that inshore no-take areas needed to be based on fish movements and home range size (Mann et al. 2016a). The slow growth rate of

Simon Chater and Mike Karon puzzling in big surf.

speckled snapper was determined using tag-recapture data (Mann et al. 2016b). We monitored the recovery of the fish populations in the previously exploited area south of Leven Point using the no-take sanctuary area as a benchmark (Mann et al. 2016c). We investigated the practice of catch-and-release shore angling and whether it is compatible with the conservation goals of MPAs (Mann et al. 2018). By collecting fish fin clips, we contributed towards several genetic studies including that of catface rockcod (Coppinger et al. 2019). Excitingly, we contributed towards a study investigating the movement patterns of the iconic giant kingfish using acoustic telemetry (Daly et al. 2019). We studied the movement and growth rate of several species including cave bass (Mann et al. 2020) and giant sand sharks (Jordaan et al. 2021). Surprisingly, the data we collected on movement of speckled snapper was even used in mathematical fishery mobility models looking at harvesting fish outside MPAs (Broadbridge et al. 2022). Finally, we undertook a study looking at the movement of catface rockcod using both dart tagging and acoustic telemetry (Mann et al. 2022).

The team hard at work at Crayfish Point near Maphelane.

The achievements of this project are largely thanks to the amazing team of voluntary citizen scientists that enthusiastically participated in this project. I would like to take this opportunity to thank every single one of you for your contributions. It was an incredible privilege to be able to fish in this beautiful area and I sincerely hope that all of you have become ambassadors for our MPAs! When I started this project my bosses at the time scoffed at me and said it was just an excuse to go fishing. I think you will agree, we proved them wrong! The project produced good science, contributed to policy and conservation management and generated support for MPAs amongst recreational anglers – a clear success story.

References (in date order)

James NC, Mann BQ, Radebe PV. 2004. Mortality estimates and biological reference points for the Natal stumpnose *Rhabdosargus sarba* (Pisces: Sparidae) in KwaZulu-Natal, South Africa. *African Journal of Aquatic Science* 29(1): 67-74.

Mann BQ, Pradervand P. 2007. Declining catch per unit effort of an estuarine-dependent fish, *Rhabdosargus sarba* (Teleostei: Sparidae), in the marine environment following closure of the St Lucia estuarine system, South Africa. *African Journal of Aquatic Science* 32(2): 133-138.

Parker D, Booth AJ, Mann BQ. 2013. A spatio-temporal assessment of the *Trachinotus botla* shore fishery in KwaZulu-Natal, South Africa. *African Journal of Marine Science* 35(1): 35-46.

Mann BQ, Cowley PD, Fennessy ST. 2015. Movement patterns of surf-zone fish species in a sub-tropical marine protected area on the east coast of South Africa. *African Journal of Marine Science*. 37(1): 99-114.

Mann BQ, Cowley PD, Kyle R. 2016a. Estimating the optimum size for inshore no-take areas based on movement patterns of surf-zone fishes and recommendations for rezoning of a World Heritage Site in South Africa. *Ocean & Coastal Management* 125: 8-19.

Mann BQ, Lee B, Cowley, PD. 2016b. Growth rate of speckled snapper *Lutjanus rivulatus* (*Teleostei: Lutjanidae*) based on tag-recapture data from the iSimangaliso Wetland Park, South Africa. *African Journal of Marine Science* 38(1): 111-118.

Mann BQ, Winker H, Maggs JQ, Porter S. 2016c. Monitoring the recovery of a previously exploited surf-zone fish community in the St Lucia Marine Reserve using a no-take sanctuary area as a benchmark. *African Journal of Marine Science* 38(3): 423-441.

Mann BQ, Cowley PD, Dunlop SW, Potts WM. 2018. Is catch-and-release shore angling compatible with the conservation goals of marine protected areas? A case study from the iSimangaliso Wetland Park in South Africa. *Fisheries Research* 208: 179-188.

Coppinger CR, James NC, Gouws G, Mann BQ, Guissamulo A, Mwale M. 2019. Assessing the genetic diversity of catface grouper *Epinephelus andersoni* in the subtropical Western Indian Ocean. *Fisheries Research* 218: 186-197.

Daly R, Filmalter JD, Daly CAK, Bennett RH, Pereira MAM, Mann BQ, Dunlop SW, Cowley PD. 2019. Acoustic telemetry reveals multi-seasonal spatiotemporal dynamics of a giant trevally *Caranx ignobilis* aggregation. *Marine Ecology Progress Series* 621: 185-197.

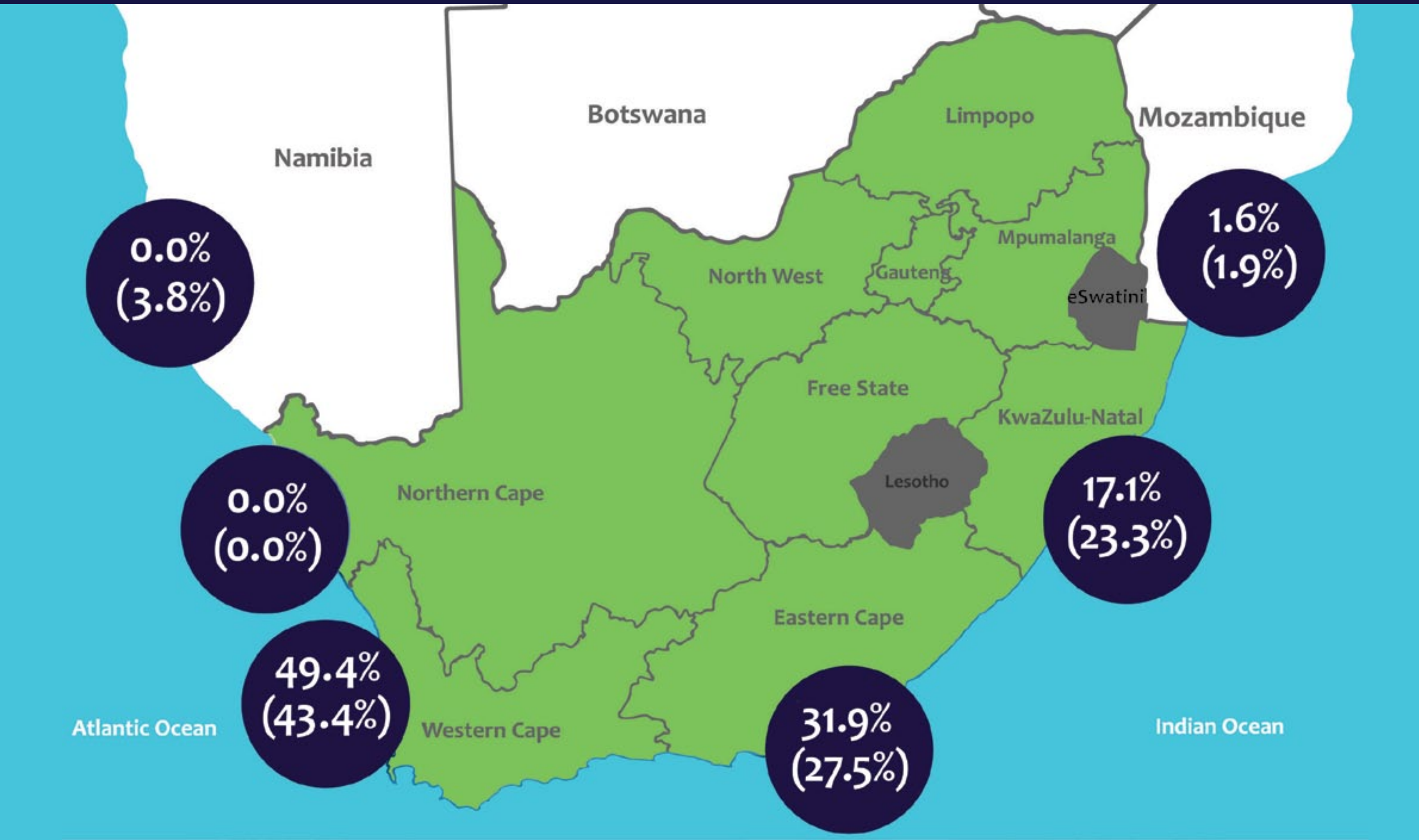
Mann BQ, Jordaan G, Daly R. 2020. Movement patterns and growth rate of cavebass *Dinoperca petersi* (Pisces: Dinopercidae) in the iSimangaliso Marine Protected Area, South Africa. *Western Indian Ocean Journal of Marine Science* 19(2): 45-59.

Broadbridge P, Hutchinson AJ, Li X, Mann BQ. 2022. Stratified fishery mobility models with harvesting outside of no-take areas. *Journal of Applied Mathematical Modelling* 105: 29-49.

Mann BQ, Daly R, Jordaan GL, Dalton WN, Fennessy ST. 2022. Movement behaviour of catface rockcod *Mycteroperca* (*Epinephelus*) *andersoni* (Epinephilidae) off the eastern seaboard of southern Africa. *African Journal of Marine Science* 44(2): 125-137.

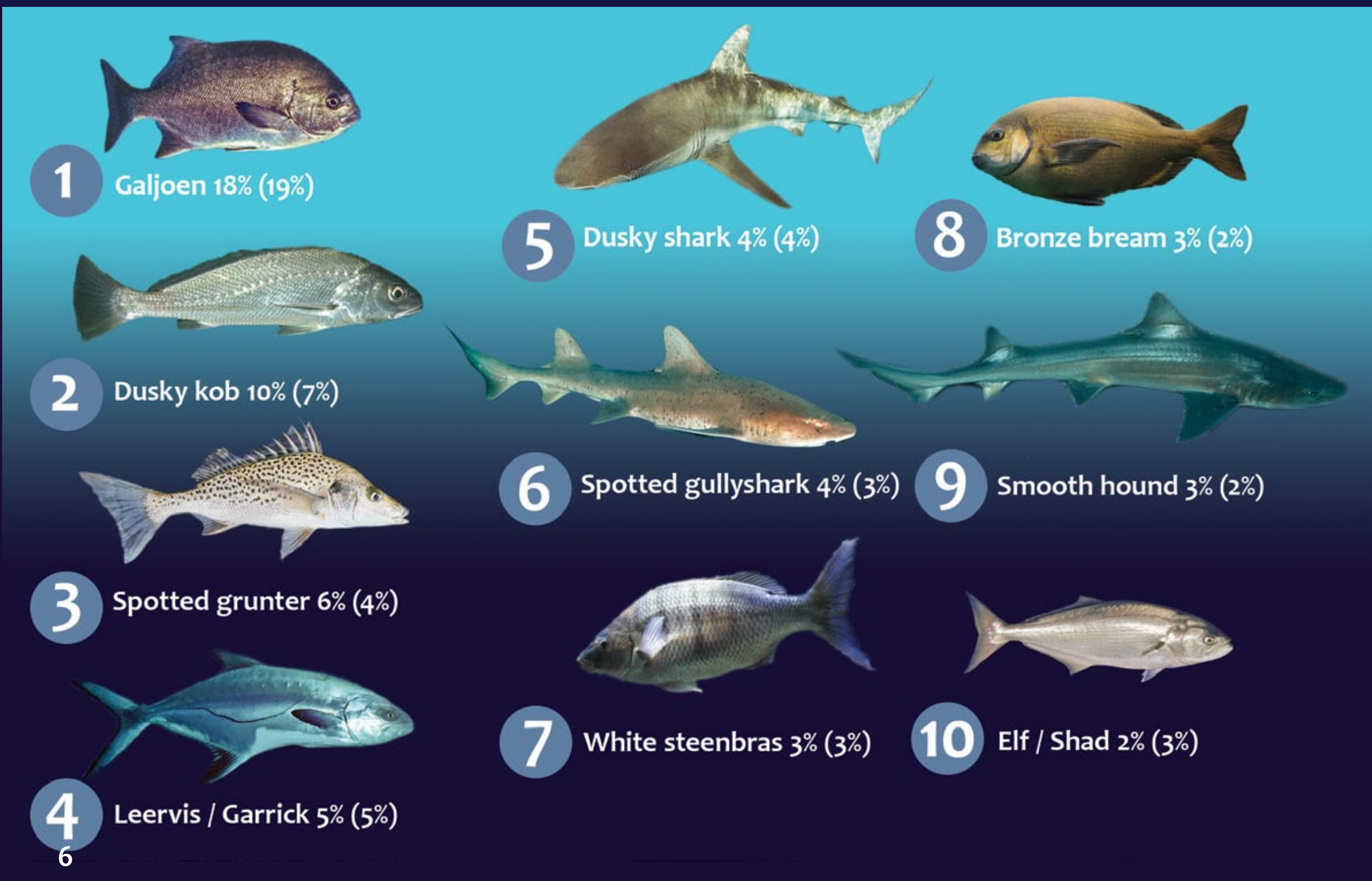
Percentage of fish tagged along the Southern African coast in 2022

(Percentages in brackets indicate overall distribution of tagging since 1984)



Top 10 species tagged in 2022

(Percentages in brackets indicate overall composition of tagging since 1984)



Get the NEW Fish App for Anglers!

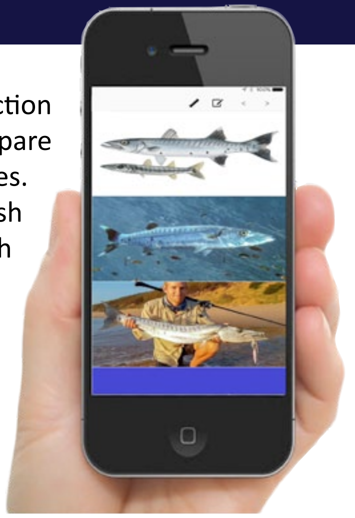
By Bruce Mann

In October 2020, the long-awaited **ORI Fish App** (Marine Fish Guide for Southern Africa) became available for download on cell phone (both Android and iPhone). This app was produced specifically for marine recreational anglers to help improve fish identification and to increase awareness about South Africa's marine linefish species.

All profits from the sale of the App are split between the app developer (PDA Solutions) and ORI. Importantly, funds received by ORI go directly into helping to finance the **ORI-Cooperative Fish Tagging Project** (ORI-CFTP).

The basic structure of the Fish App includes a detailed fish guide (photographs and text), a distribution map for each species, a fish identification tool (smart search), identification guide using fish families, a length/weight calculator, the current fishing regulations for each species and a personal catch log.

The app contains detailed species profiles for **249 common linefish species** from 77 families caught in South African waters, using simple, easy to understand text. The app is very simple and intuitive to use. Excellent colour images for each species have been obtained from a wide range of sources. A useful compare function in the app allows you to compare photos (or text) of similar species. Generalised line drawings of fish families can be used to identify fish in that family. Simple maps are available for the **southern African distribution** of each species. The fish identification smart search is simple to use and works well at narrowing down the species you are looking for. **The length/weight calculator** was compiled for each species using the most accurate information available and is very quick and easy to use. This is useful when you measure and release your fish but want to know what its weight was. The **linefish regulations have been summarised** for each individual species based on the current gazetted legislation and can be quickly located at the touch of a button. Finally, there is a useful catch log where you can log your own catches and other interesting observations.



Although initial sales have been slow, we hope that the Fish App will become increasingly popular as anglers discover **its usefulness** and spread the word. The app will be regularly updated to include any changes in the fishing regulations and to incorporate any new information on the individual species **(updates take place automatically on your phone with no added cost)**.

To purchase the ORI Fish App, please go to Google Play Store (Android phones) or App Store (iPhones) and search for **"Marine Fish Guide for Southern Africa"**. The app only costs **R200** to download (less than you spend when you go to the tackle store) so please get yourself a copy now, **enjoy it and tell others about it!**

Research Tagging in Marine Protected Areas

Marine Protected Areas (MPAs)	Period	2022		Overall	
		Total	# Recapt.	Total	# Recapt.
De Hoop Marine Protected Area (Western Cape)	1985 - current	1 431	177	64 567	4 900
Dwesa-Cwebe Marine Protected Area (Eastern Cape)	2009 - current	381	13	5 334	179
Goukamma Marine Protected Area (Western Cape)	2001 - current	54	2	1 172	40
iSimangaliso Marine Protected Area (KwaZulu-Natal)	2001 - current	562	40	11 883	1 462
Helderberg Marine Protected Area (Western Cape)	2021 - current	140	10	582	16

Top Taggers: 15 or more fish tagged in 2022

Member name	2022 tag releases	Total taggings	2022 tag recaptures	Total tag recaptures	% Recapt.
NIC DE KOCK	446	2 637	29	178	7%
MARK GALPIN	268	1 325	24	125	9%
FRANCOIS VAN ZYL	205	903	10	41	5%
NIKKI-LOUISE SMIT	189	233	4	7	3%
KEVIN HUMPHREYS	180	2 643	5	122	5%
RALDU POTGIETER	175	703	10	37	5%
VIVIENNE DAMES	173	445	12	19	4%
JEFF ASHER-WOOD	165	912	28	87	10%
JOHN LUEF	134	949	10	92	10%
DONAVAN COLE	131	1 274	6	37	3%
DIVAN COETZER	127	305	7	14	5%
BRADLEY SPARG	126	2 726	5	158	6%
NIEL MALAN	122	703	7	39	6%
JACQUES DE LA HARPE	119	1 485	6	100	7%
STEFAN OOSTHUIZEN	103	628	15	57	9%
SHAWN MEY	94	1 653	4	80	5%
GRAHAM POLLARD	91	497	2	14	3%
DWAYNE BOSHOFF	87	338	9	17	5%
CHRISTOPHER PIKE	86	345	2	23	7%
BERRIE FERREIRA	82	965	5	34	4%
ROLAND NAICKER	77	392	7	23	6%
BRETT HARRIS	68	307	5	12	4%
CHARLES LILFORD	64	3 399	7	151	4%
MATTHEW AND SHANNEN KETHRO	63	67	-	-	-
VICTOR HOGAN	60	160	3	8	5%
MARCO WILDEMANN	59	273	1	6	2%
LOUIS LOOCK	59	74	-	-	-
MARIO ESTERHUIZEN	57	78	-	2	3%
RAY THOMPSON	57	762	4	50	7%
TARRECK BYRNE	56	139	-	1	1%
CRAIG NELSON	56	831	1	48	6%
MIKHAIL DANIELS	54	65	6	6	9%
RICHARD MULLER	53	334	2	7	2%
MATTHEW NOTHARD	52	189	-	-	-
WALTER MATHEE	51	351	4	17	5%
SHAWN METHALAL	49	49	9	9	18%
NELIUS SPIES	49	74	1	2	3%
HERMI VAN ZYL	49	76	-	-	-
BOB SHEPHERD	49	829	2	30	4%
RUAN VAN DER WALT	47	404	2	22	5%
ALBERTUS NIEUWOUDT	46	67	3	4	6%
GERRIE GROBLER	45	807	7	41	5%
RIAAN LA GRANGE	45	45	-	-	-
MARTIN MALAN	44	49	-	-	-
BRENDAN O'CONNELL	43	533	5	82	15%
RUSSELL HAND	43	833	-	94	11%
JACQUES-PIERRE GELDENHUYS	41	531	7	46	9%
REINER VON DER MARWITZ	41	146	3	8	5%
DYLAN LEES	40	161	3	7	4%
JAYSON JOOSTE	40	177	1	4	2%
WESLEY RAPSON	39	314	-	12	4%
FRANCOIS KLEYN	39	107	1	6	6%
ERIC MOREY	39	67	2	3	4%
STEPHAN OLIVIER	38	147	5	9	6%
POENA BRUWER	37	249	-	10	4%
LLOYD KRIGE	37	57	2	4	7%
SHAUN VAN ZYL	36	419	7	21	5%
FRANCOIS JOHANN VAN DER MERWE	36	42	2	2	5%
CHRIS VAN DER WALT	36	75	-	1	1%
LYLE TAYLOR	36	390	11	33	8%
FRANCOIS KEMP	34	216	7	19	9%
WILLEM SCHOONBEE	33	67	-	3	4%
JANNIE VAN BLERK	33	154	3	5	3%
EDUARD STEYLS	33	298	2	9	3%
STEPHAN MARX	32	160	2	11	7%
TREMAYNE ANGELO HAMMOND	31	66	7	12	18%
RYAN TAYLOR	31	524	4	51	10%
CHRISTIAN JACOBY	30	91	1	6	7%

Top Taggers: 15 or more fish tagged in 2022

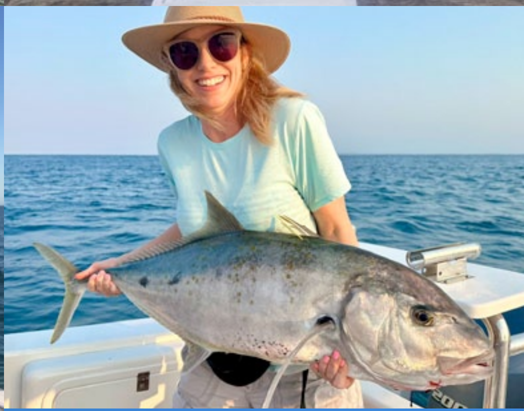
Member name	2022 tag releases	Total taggings	2022 tag recaptures	Total tag recaptures	% Recapt.
ROBERT KYLE	29	1 844	3	203	11%
GUY NICHOLSON	28	143	4	8	6%
CHENELLE MORAN	27	200	2	12	6%
JUSTIN MCCARTHY	26	584	1	38	7%
PIETER DU TOIT	26	262	-	10	4%
MICHAEL PARRIS	26	131	4	9	7%
ENRICO ROBERTS	26	34	-	-	-
ANTONY SCHEEPERS	25	49	2	2	4%
GEORGE HAY	25	44	-	-	-
JOHN RANCE SNR.	25	409	-	26	6%
MATTHEW DE WET	25	25	-	-	-
JJ STRYDOM	25	252	3	15	6%
BRADLEY GOUVERIS	23	23	-	-	-
STEFAN VAN HUYSSTEEN	23	239	-	8	3%
NOAH KLOPPER	23	104	4	5	5%
RUSSEL BERMAN	22	268	-	11	4%
SIMON WALKER	22	5 202	3	398	8%
WALDO KLEYN	22	47	-	1	2%
ROBERT WELSH	22	51	1	1	2%
BRUCE QUINTIN MANN	22	506	2	43	8%
YUSUF DHALECH	22	77	8	14	18%
PAUL VAN NIMWEGEN	22	251	4	24	10%
RICHARD COOK	22	151	2	26	17%
NIKOS NICOLAIDIS	21	126	2	10	8%
DEAN IMPSON	20	20	-	-	-
CHRISTIAAN ZWIEGELAAR	20	20	-	-	-
WARREN KNEZOVICH	20	46	1	1	2%
DEON VAN EMMENIS	20	125	-	4	3%
CHARLES DE LA HARPE	20	541	4	64	12%
GARETH GOUGH	20	637	1	54	8%
JOHN MONG	20	63	1	6	10%
ROBERT TUZZA	20	36	-	-	-
DAVID SCHENCK	19	331	2	21	6%
VAUGHN REILLY	19	262	6	35	13%
TINUS VAN STADEN	19	44	2	5	11%

Member name	2022 tag releases	Total taggings	2022 tag recaptures	Total tag recaptures	% Recapt.
MATTHEW FENN	19	37	1	1	3%
CORNELIS REIMAN	19	553	-	21	4%
MATHEW WEEDMAN	19	603	-	83	14%
STEVE SUTHERLAND	18	51	-	3	6%
MATTHEW MCIVER	18	177	4	18	10%
CHARL MARAIS	18	852	2	55	6%
EDUAN MOSTERT	18	37	2	2	5%
ANDRE BRINK	17	58	3	4	7%
JACQUES MALHERBE	17	183	5	15	8%
LIONEL KORTE	17	79	-	-	-
WAYNE GERBER	17	46	-	-	-
JACO BANNINK	17	68	-	3	4%
JUAN JOOSTE	17	96	-	2	2%
JACOBUS NEL	17	17	-	-	-
ALAN BRUMMER	16	36	1	6	17%
EMILE VAN TONDER	16	33	-	1	3%
ARTHUR MANN	16	158	1	23	15%
URSULA OTTO	16	166	1	6	4%
CLINTON DUNK	16	83	-	3	4%
PHILIP VILJOEN	16	29	1	1	3%
ANDRE FARR	16	62	2	3	5%
DANIE OTTO	16	30	2	2	7%
EUGENE VAN DER ELST	15	26	-	1	4%
GREGORY MULLER	15	202	-	6	3%
RUDOLF TOME	15	17	2	2	12%
MARLIN KINSEY	15	149	-	8	5%
GARY THOMPSON	15	163	-	4	2%
GOOSEN LE ROUX	15	31	2	4	13%
ANDRE VAN NIEKERK	15	57	2	2	4%
WILLEM WESSELS	15	40	-	1	3%

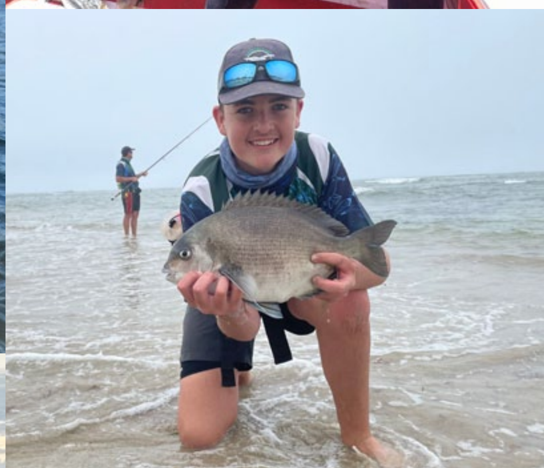
Well done to our top taggers. If you would like to view this year's leaderboard so far, please follow this link:
www.oritag.org.za/Leaderboard

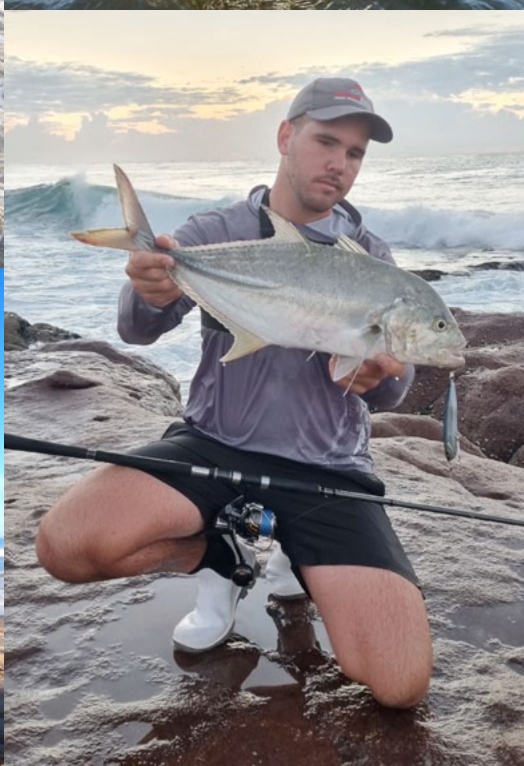














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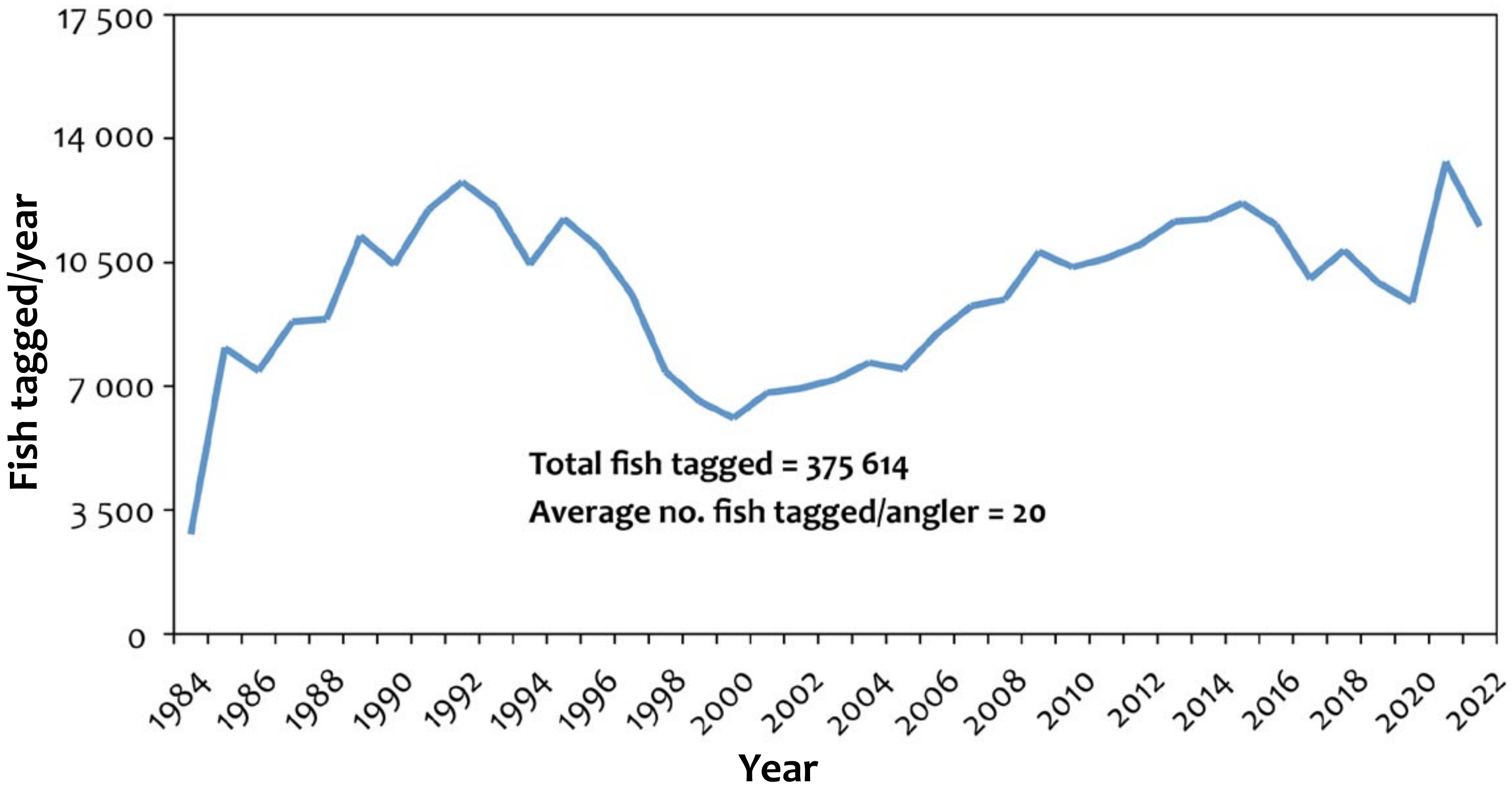
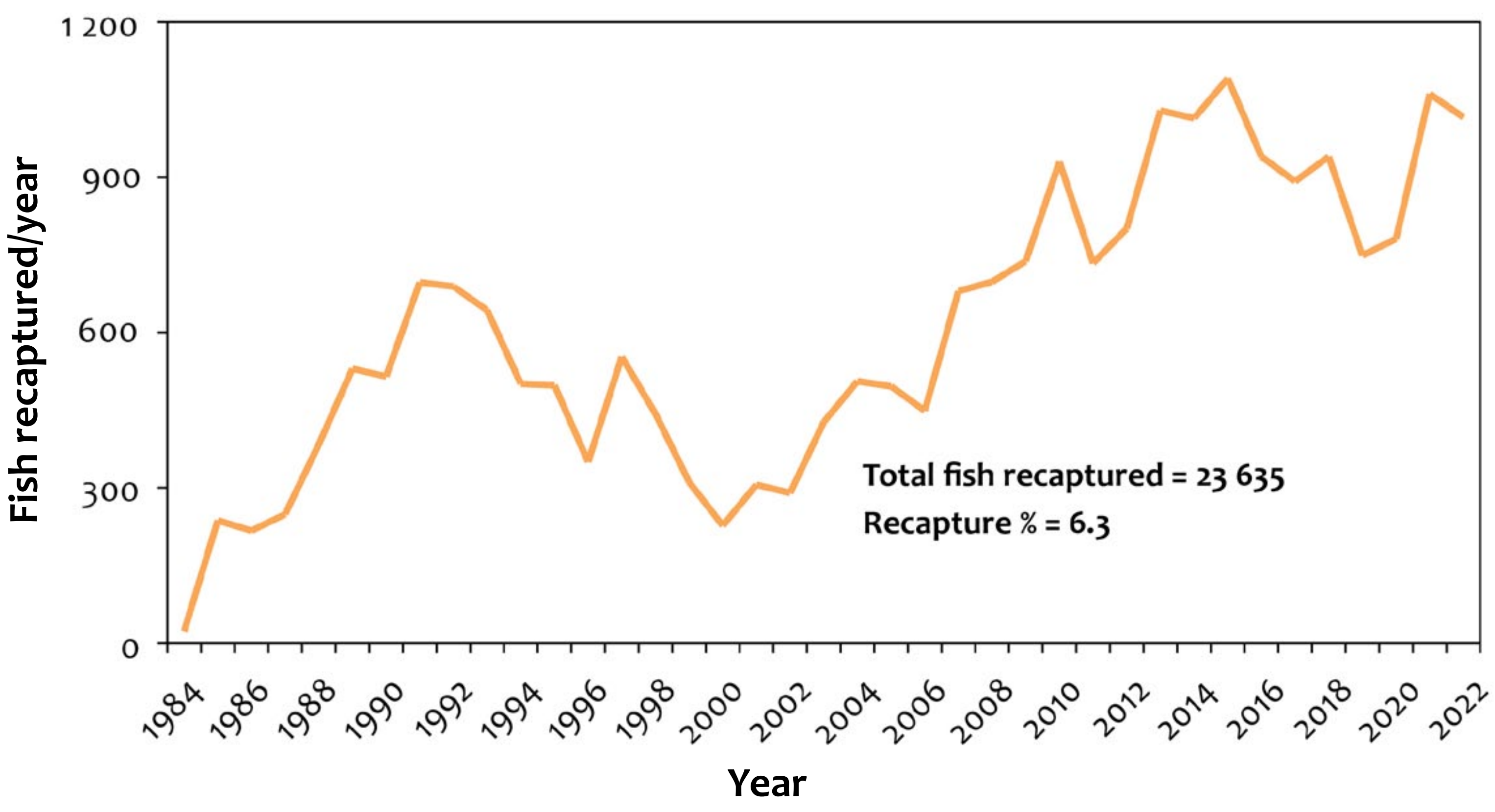
ORI Cooperative Fish Tagging Project Statistics

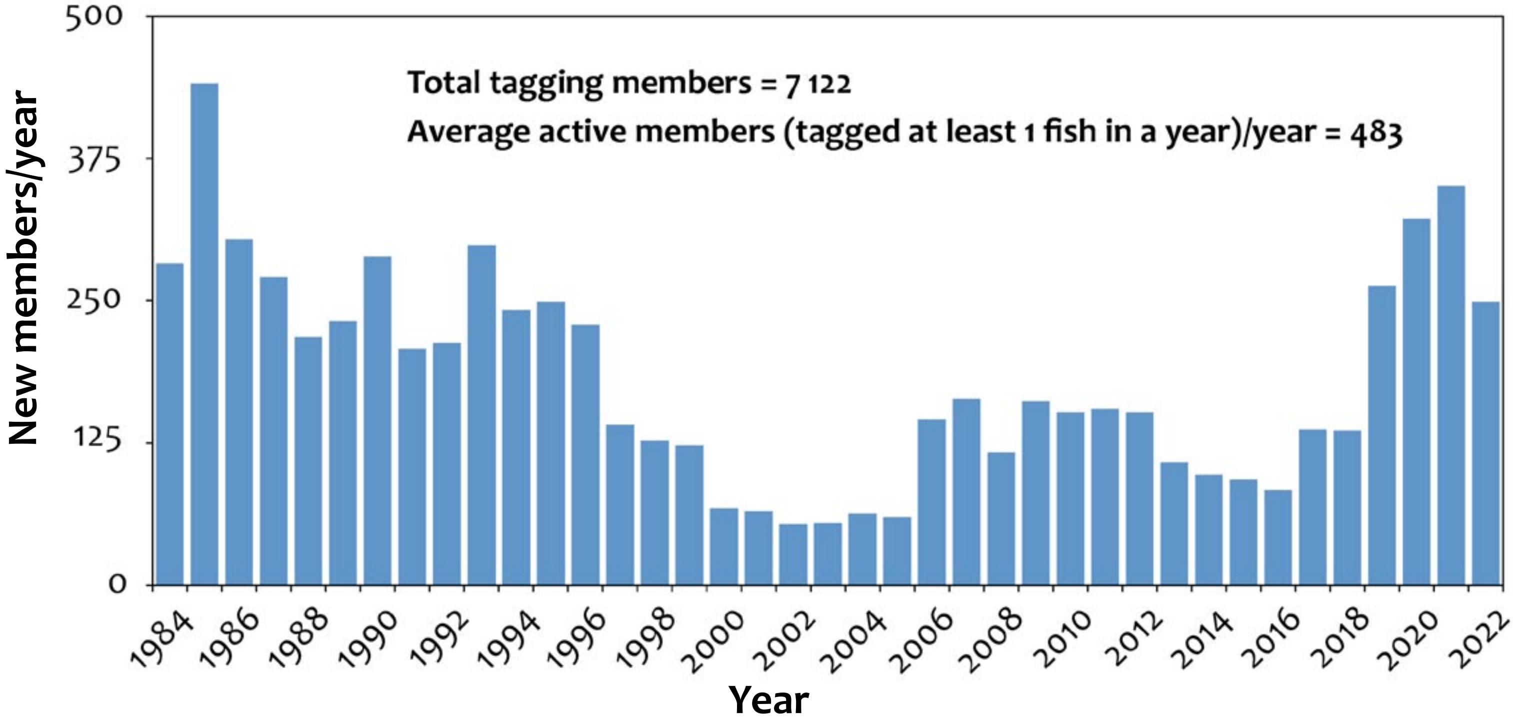
Fish tagged per year and per angler



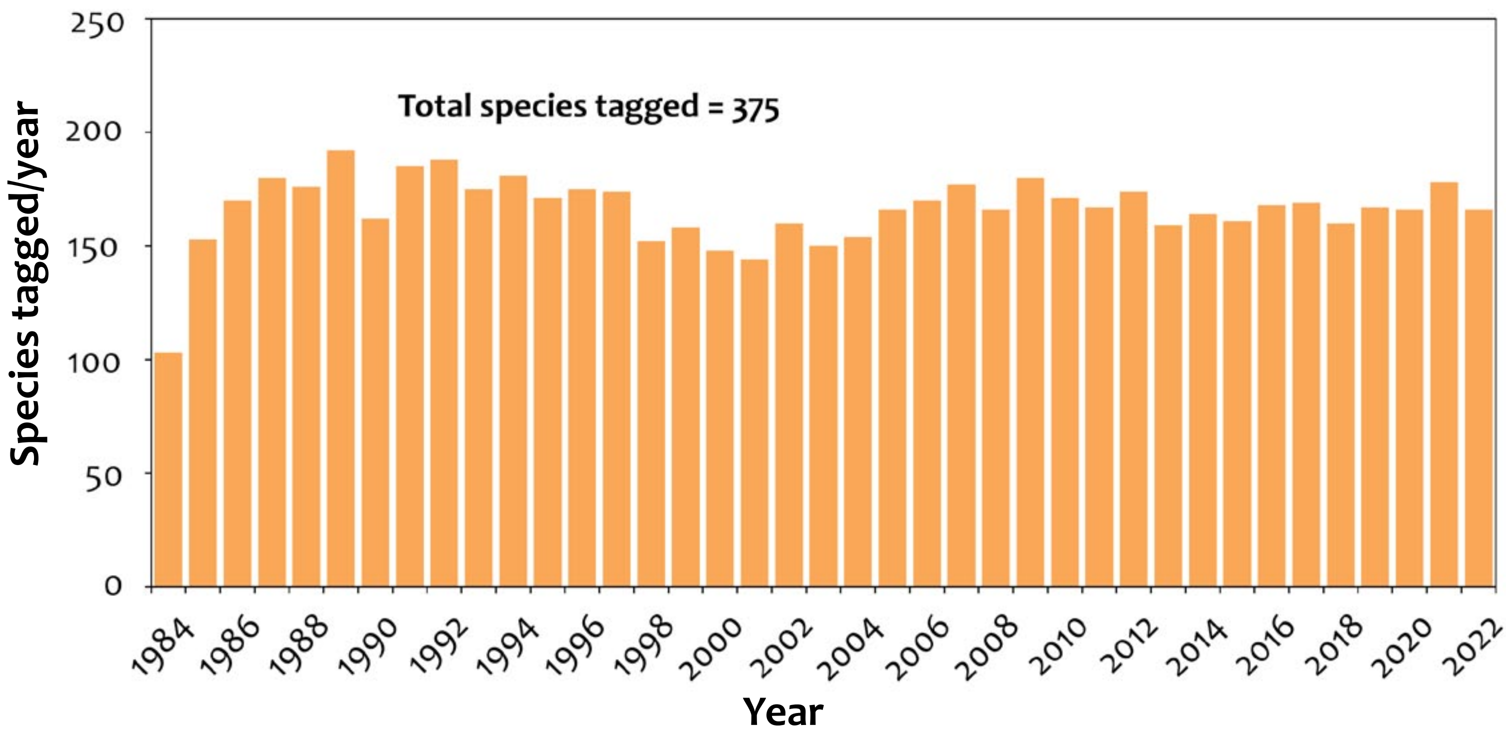
% fish recaptured per year and cumulative number of fish tagged



New members per year



Total species tagged per year



Main fish species tagged up to 31 December 2022

Priority species for tagging are highlighted in blue

Species	No. Tagged since 1984	Recaptured since 1984		Km travelled		Days free	
		No.	%	Avg.	Max.	Avg.	Max.
Galjoen	72 265	5 071	7%	42	1 892	438	7 356
Dusky kob	25 467	1 813	7%	28	1 625	351	5 997
Leervis / Garrick	19 683	1 421	7%	216	2 060	322	3 208
Spotted grunter	16 747	435	3%	13	823	296	2 950
Dusky shark / Grey shark	16 527	1 526	9%	59	1 374	108	2 928
Copper / Bronze whaler shark	11 111	362	3%	167	1 790	428	3 981
Spotted gullyshark	10 681	777	7%	31	911	552	6 332
Elf / Shad	10 107	397	4%	275	1 676	178	1 437
White steenbras	9 472	474	5%	34	804	280	2 262
Blacktail / Dassie	9 361	224	2%	6	358	279	2 715
Blackspotted smoothhound shark	8 439	246	3%	42	582	572	4 405
Raggedtooth shark	7 349	1 171	16%	186	2 966	729	9 591
Lesser guitarfish / Sandshark	6 646	75	1%	43	726	335	2 572
Giant guitarfish / Sandshark	5 759	480	8%	32	360	390	2 816
Bronze bream	5 687	174	3%	17	799	190	1 465
Roman	5 599	377	7%	4	294	386	8 134
Slinger	5 253	209	4%	36	1 110	221	2 814
Black musselcracker / Poenskop	4 723	331	7%	30	791	588	6 809
Largespotted pom-pano	4 514	78	2%	12	270	246	1 372
Yellowbelly rockcod	4 481	736	16%	6	425	376	3 309
Giant kingfish	4 201	164	4%	15	419	366	2 226
Diamond / Butterfly ray	4 092	36	1%	165	1 756	431	2 184
Catface rockcod	3 973	946	24%	6	525	171	2 867
Broadnose sevengill shark	3 967	258	7%	64	597	503	4 332
Blue stingray	3 629	13	0%	30	234	362	1 217
Zebra / Wildeperd	3 624	79	2%	2	52	240	1 399
Sailfish	3 604	29	1%	61	1 060	150	727
White musselcracker / brusher	3 270	97	3%	56	843	588	3 499
Baardman / Belman / Tasslefish	2 908	45	2%	1	17	417	4 870
Speckled snapper	2 801	1 009	36%	3	200	292	2 662
Carpenter / Silverfish	2 603	24	1%	46	290	932	4 766
Santer / Soldier	2 519	179	7%	18	490	239	1 779
Striped catshark	2 382	220	9%	6	381	356	2 597
Red / Copper steenbras	2 081	214	10%	116	923	878	9 257
Sharpnose stingray	1 973	6	0%	6	24	198	465
Natal stumpnose / Yellowfin bream	1 864	53	3%	14	230	233	1 451
Smooth hammer-head shark	1 851	22	1%	133	384	555	3 075
Ladyfish / Springer	1 823	36	2%	21	412	376	1 426
Silver kob	1 715	72	4%	44	548	290	1 435
Perch / River bream	1 691	238	14%	1	105	352	1 583
Cavebass / Lampfish	1 657	250	15%	9	514	352	3 116
River snapper / Rock salmon	1 581	292	18%	3	391	327	2 403
Scotsman	1 572	414	26%	26	1 211	465	2 839
Albacore / Longfin tuna	1 569	36	2%	304	1 008	412	2 585

Species	No. Tagged since 1984	Recaptured since 1984		Km travelled		Days free	
		No.	%	Avg.	Max.	Avg.	Max.
Brassy kingfish	1 525	80	5%	11	757	286	1 441
Dageraad	1 506	119	8%	23	592	403	2 355
Grey grunter	1 500	88	6%	1	21	251	1 292
King mackerel / Cuda	1 424	61	4%	366	1 552	534	2 604
Cape stumpnose	1 410	10	1%	7	56	204	732
Westcoast steen-bras	1 311	78	6%	61	280	253	1 449
Duckbill ray	1 271	14	1%	42	402	648	1 427
Soupfin shark / Vaalhaai	1 222	31	3%	137	1 034	717	3 586
Blacktip shark	1 216	42	3%	86	1 288	206	1 148
Dark shyshark	1 213	288	24%	3	86	143	2 015
Leopard catshark	1 211	219	18%	8	722	327	4 431
Scalloped hammer-head shark	1 174	18	2%	121	629	329	2 943
Stonebream	1 097	9	1%	75	524	242	563
Giant yellowtail	1 066	45	4%	170	1 746	319	1 380
Skipjack tuna	1 044	2	0%	536	1 061	1 046	1 628
Yellowfin tuna	1 009	14	1%	804	5 645	319	1 314
Milkshark	983	26	3%	87	363	181	772
Geelbek / Cape salmon	956	11	1%	105	904	335	2 569
Bigeye kingfish	955	39	4%	12	163	246	2 751
Squaretail kob	950	67	7%	9	266	149	2 043
Honeycomb stingray	916	18	2%	1	8	313	2 543
Blacktip kingfish	908	29	3%	4	54	147	545
Black marlin	857	3	0%	1 382	3 633	163	240
Eagleray	808	8	1%	8	49	442	1 582
Spinner / Longnosed blacktip shark	789	27	3%	87	1 055	194	1 295
Seventy-four	758	27	4%	65	521	559	2 845
Potato bass	675	32	5%	2	22	358	2 639
Tiger shark	623	29	5%	267	4 067	379	1 823
Hardnosed smooth-hound shark	609	9	1%	87	340	344	870
Janbruin / John Brown	600	18	3%	2	15	130	502
Natal seacatfish	597	233	39%	0	22	378	2 586
Bonefish	567	4	1%	10	34	122	354
Striped marlin	564	2	0%	805	848	202	379
Halfmoon rockcod	560	100	18%	1	49	513	3 189
Bull / Zambezi shark	534	32	6%	76	539	328	2 599
Great white shark	523	17	3%	290	1 543	346	959
Brown shyshark	519	50	10%	8	102	222	997
Queen mackerel / Natal snoek	465	3	1%	4	12	376	1 044
Blue marlin	454	0	0%	0	0	0	0
Red stumpnose	446	11	2%	11	107	894	1 998
Southern pompano	442	26	6%	62	464	151	848
Puffadder shyshark	441	41	9%	1	20	234	1 363
Lemonfish	427	17	4%	4	64	230	749
Hottentot	415	16	4%	1	10	251	1 078

Main fish species tagged up to 31 December 2022

Priority species for tagging are highlighted in blue

Species	No. Tagged since 1984	Recaptured since 1984		Km travelled		Days free	
		No.	%	Avg.	Max.	Avg.	Max.
Talang / Largemouth queenfish	409	16	4%	1	10	193	630
Pickhandle barracuda	405	57	14%	2	44	273	1 856
White stumpnose	393	5	1%	3	7	245	463
Bluefin kingfish	357	15	4%	11	94	172	386
Flapnose houndshark	353	50	14%	1	43	747	3 013
Bartail flathead	343	9	3%	2	18	449	1 947
Banded galjoen	343	8	2%	70	562	232	507
Sandbar shark	341	6	2%	166	345	250	536
Eastern little tuna / Kawakawa	326	0	0%	0	0	0	0
Blackspot shark	313	8	3%	34	192	331	945
Spearnose skate	299	11	4%	0	3	223	553
St. Joseph / Elephant fish	291	1	0%	1 342	1 342	218	218
Blue emperor	285	19	7%	30	307	325	975
Bluntnose spiny dogfish	274	4	1%	189	669	615	1 476
Snapper kob	267	11	4%	18	132	187	378
Blue hottentot	261	7	3%	0	0	108	199
Malabar rockcod	253	38	15%	1	8	191	1 540
Englishman	241	9	4%	1	6	281	640
Green jobfish	217	7	3%	0	0	209	373
Whitespotted smoothhound shark	208	5	2%	6	15	678	1 627
White seacatfish	207	4	2%	14	21	595	1 895
Greyspot guitarfish / Sandshark	189	1	1%	6	6	51	51
Snoek	181	1	1%	136	136	491	491
Shorttail stingray	180	5	3%	48	231	508	2 412
Javelin grunter	178	16	9%	9	70	378	2 940
Dorado / Dolphinfish	164	2	1%	55	64	39	66
Spotted eagleray	154	3	2%	205	597	518	850
Striped threadfin	145	2	1%	5	9	51	63
Moustache rockcod	133	39	29%	33	1 200	440	2 990
Tomato rockcod	131	21	16%	2	22	208	574
Smallspotted pompano	129	4	3%	3	13	211	439
Greater yellowtail / Amberjack	124	3	2%	80	162	119	322
Grey reef shark	121	3	2%	83	166	357	697
Yellowspotted kingfish	119	0	0%	0	0	0	0
Cock grunter	116	5	4%	14	65	144	490
Thorntail stingray	113	2	2%	0	0	295	357
Longfin / Tropical yellowtail	112	3	3%	22	67	218	417
Great barracuda	109	23	21%	0	1	170	467
Whitebarred rubberlip	109	1	1%	1	1	176	176
Russell's snapper	107	3	3%	0	1	328	896
Atlantic bonito	106	0	0%	0	0	0	0
Flathead mullet	104	1	1%	738	738	738	738
Cape gurnard	97	3	3%	0	0	456	953
Eel catfish	97	1	1%	1	1	47	47
Sliteye shark	88	2	2%	291	565	1 334	2 652

Species	No. Tagged since 1984	Recaptured since 1984		Km travelled		Days free	
		No.	%	Avg.	Max.	Avg.	Max.
Maasbanker	88	0	0%	0	0	0	0
Longfin kingfish	84	1	1%	12	12	453	453
Bigeye stumpnose	83	4	5%	6	21	82	204
Oxeye tarpon	83	0	0%	0	0	0	0
Spotted spiny dogfish	82	1	1%	36	36	120	120
Swordfish	79	1	1%	9	9	1 263	1 263
Banded catshark	74	8	11%	16	55	423	1 155
Java shark	70	2	3%	14	18	67	76
Round ribbontailray	70	3	4%	3	8	47	74
Blue kingfish	68	0	0%	0	0	0	0
Striped mullet	66	1	2%	1	1	230	230
Minstrel rubberlip	61	2	3%	19	37	484	679
Sand steenbras	60	2	3%	0	0	40	79
Cape moony	59	0	0%	0	0	0	0
Sailfin rubberlip	59	0	0%	0	0	0	0
Dusky rubberlip	57	2	4%	92	183	1 495	2 345
Doublespotted queenfish	56	0	0%	0	0	0	0
Needlescaled queenfish	55	1	2%	0	0	227	227
False thornback skate	54	2	4%	0	0	194	340
Spadefish	53	1	2%	118	118	2 724	2 724
Prodigal son / Cobia	52	1	2%	36	36	479	479
Yellowtail scad	51	0	0%	0	0	0	0
Shortfin mako shark	49	5	10%	24	69	253	786
Marbled electric ray	49	0	0%	0	0	0	0
Thintail thresher shark	49	0	0%	0	0	0	0
Concertina-fish	48	0	0%	0	0	0	0
German	48	0	0%	0	0	0	0
Swallowtail rockcod	46	4	9%	0	0	7	11
Panga	46	0	0%	0	0	0	0
Yellowfin emperor	44	4	9%	0	0	441	1 187
Shortbill spearfish	42	0	0%	0	0	0	0
Koester	41	1	2%	0	0	1 176	1 176
Wreckfish	39	2	5%	4	7	231	388
Bludger kingfish	39	0	0%	0	0	0	0
Blue shark	38	0	0%	0	0	0	0
Captain Fine / Whitespotted rockcod	38	0	0%	0	0	0	0
Indian goatfish	38	0	0%	0	0	0	0
Steentjie	37	0	0%	0	0	0	0
Manta	35	1	3%	6	6	39	39
Threadfin mirrorfish	35	0	0%	0	0	0	0
Surge wrasse	33	1	3%	0	0	34	34
Tripletail	33	0	0%	0	0	0	0
Twinspot snapper	32	5	16%	2	4	139	363
Wahoo	32	1	3%	0	0	18	18
Indian mirrorfish	32	0	0%	0	0	0	0
Milkfish	31	0	0%	0	0	0	0
Mackerel	30	0	0%	0	0	0	0

Port of Ngqura:
An unexpected, artificial, sanctuary for fish.

Written by: Vivienne Dames, Matt Dicken and Tony Booth

The Port of Ngqura, called Coegha Harbour, is 20 km east of Gqeberha, South Africa. The deep waters within this port were developed by extensively dredging the mouth of the small and temporary Coegha River. Construction was completed in April 2006, and the port became operational at the end of 2009. The structure was an impressive feat of engineering that has turned what was once a tiny estuary between expanses of beach into a harbour with an industrial development zone, with one breakwater 1.3 km and the other 2.7 km long. These breakwaters were constructed from rock armoury and 26 500 concrete dolosse weighing 30 tonnes each. Several microhabitats exist in the port, including dolosse, rock armoury, shallow profile reefs, vertical quay walls and the small sandy beach, which still exists at the mouth of the Coegha River.

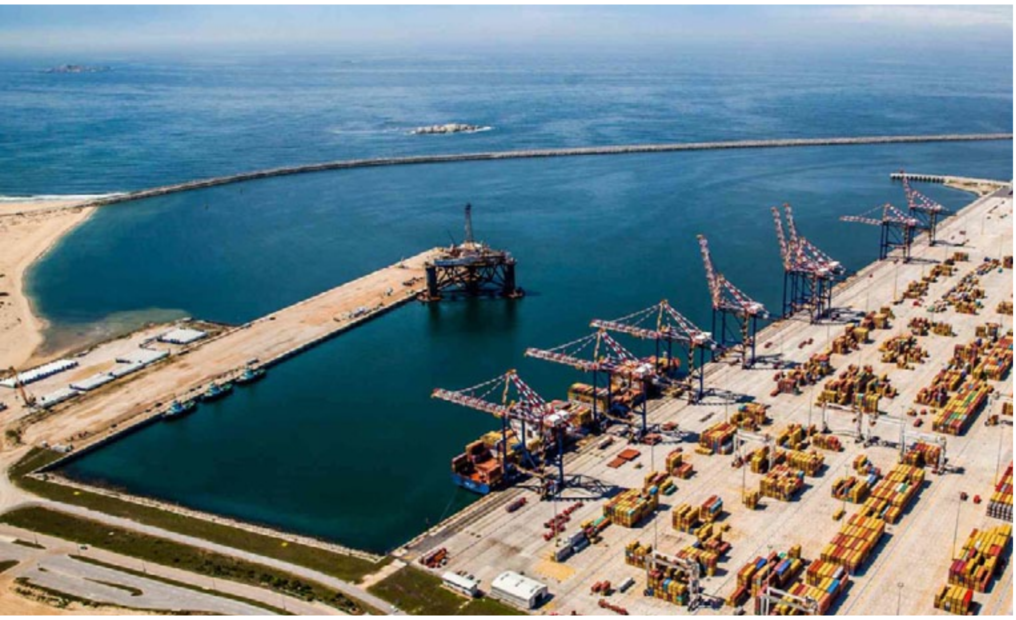


Figure 1: *The port of Ngqura, which began commercial ship operations (containers) in October 2009, is situated 20 km northeast of Gqeberha and is South Africa's 8th and latest commercial port development, situated at the mouth of the small ephemeral Coega River in Nelson Mandela Bay (Algoa Bay). Image: Oceanic Seagull Maritime*

The incredible diversity of species studied within Port Ngqura bears no resemblance to the sea life around the beach that was dredged in 2006 – and heartening to see a new suite of marine characters making lives for themselves in a man-made environment. These species are suggested to utilise the calm, deep waters of Port Ngqura, where adjacent shores are typically rough. Species, such as raggedtooth sharks, have been observed to increase in abundance during unfavourable red tides. During upwelling events in Algoa Bay, it is likely that many species, and their juveniles, will seek refuge in Port Ngqura's slightly warmer temperatures. These warmer temperatures also support a unique mix of cool-temperate and tropical species. To date, incredible sightings have been made of aggregating smoothhound sharks, gulley sharks, ladyfish/springer and garrick/leervis. Other sightings include whale sharks, bull sharks, manta rays and even great whites when there has been a whale carcass in the area. It is also not uncommon to see large pods of dolphins in excess of 200 individuals and even Bryde's whales enter the port.

In 2006 a small group of dedicated anglers spearheaded by Prof Matt Dicken established the Port Ngqura long-term biomonitoring programme. This biomonitoring programme involved Bayworld Research, KZN Sharks Board, the Oceanographic Research Institute's Cooperative Fish Tagging Project (ORI-CFTP) and the Transnet Environmental Management team based at Port Ngqura. This project aimed to document the species composition and relative abundance of fish within the port, investigate the size composition of fish within the port and the function of the port as a nursery area for juvenile fish, and identify

Figure 2: *An aggregation of spotted gulley sharks (Triakis megalopterus) along the small beach within Port Ngqura. Similar aggregations of smoothhound sharks (Mustelus mustelus) are more commonly seen, in greater numbers every summer. Image: Prof Matt Dicken.*

spatial patterns in the distribution of fish associated with different habitats within the port. It is important to note that public access to fishing is prohibited within the breakwaters of Port Ngqura.

Several years later, long-term dart tagging and monitoring has produced a massive dataset and shown the incredible biodiversity of fishes in this artificial man-made seascape, with exceptionally high densities of sharks and rays. Catches by trained teams of anglers were recorded on standardised datasheets between September 2006 and September 2007 and from December 2011 to the present, to monitor the health of the Port environment. Best handling practices (use of buckets, mats and limiting air exposure) and 100% catch-and-release are mandatory in the biomonitoring programme. The long-term biomonitoring programme is ongoing and comprises a team of 15 anglers participating all year round. Between September 2006 and September 2007, 4 559 fish were caught. From December 2011 to the present, an additional 12 643 fish (comprising 72 different species) were caught and released, of which 7 507 have been tagged with spaghetti tags via the ORI-CFTP. From dart tagging, 698 (10%) fish have been recaptured. Tagged specimens comprised 62 different species, with the dusky shark being the most commonly tagged (n = 1 451) and recaptured species (11.7%), followed by garrick with 1 277 tag releases and 8.8% recaptures. Interestingly just over half of all recaptures in Port Ngqura have been reported by members of the biomonitoring programme, indicating a strong residency of some species (e.g. dusky kob, santer, yellowbelly rockcod) and the return of mobile species (e.g. dusky shark, garrick, ladyfish).

Regarding the movement patterns of all species combined, around 7% moved within a small range of 6-10 km, 4% moved 11-20 km, and 3% moved 21-50 km. The furthest movements were accounted for by 6% of recaptures, having moved between 501-1000 km. The farthest recorded movement was 950 km, achieved by a garrick originally tagged at the Port of Ngqura on June 23 2018, measuring 790 mm in fork length (FL). This garrick was recaptured 377 days later at St Lucia Beach, KwaZulu-Natal (KZN), measuring 850 mm FL. Notably, the top three movements were all made by garrick, with an average distance of 261 km. These recaptures support previous research showing that garrick is a highly migratory species. It also implies that the Port of Ngqura (along with the surrounding estuaries) may serve as an important area for juvenile garrick before they embark on their seasonal spawning migrations to KZN as adults (for more details, refer to Dunlop et al. 2015). Other species exhibiting significant movements include raggedtooth sharks (max movement of 892 km), elf/shad (max movement of 768 km), dusky sharks (max movement of 731 km), and blacktip sharks (max movement of 455 km), all of which are known to be migratory species.

Figure 3: *A close up of a raggedtooth shark (Carcharias taurus) in clear visibility. Clear visibility is common in the Port environment during summer when water temperature ranges between 22 and 25°C. This picture also shows the established reefs found along the breakwalls of Port Ngqura. Image: Vivienne Dames.*

Analysis of the 2006-2007 dataset has produced two scientific publications. One was primarily focused on dusky sharks and showed the Port was a critical summer habitat for juveniles, with population size estimates of approximately 552 juveniles in the port during the summer months. Catch per unit effort (CPUE) was greatest between October and February, peaking in November at 0.51 sharks/angler/hour (see Dicken 2011 for more information). The 2006-2007 dataset had at the time recorded 52 species. A second publication analysed habitat use and catch composition between shore and boat angling. Shore-angling was shown to have a CPUE of 2.3 fish/angler/h and boat-based angling 2.8 fish/angler/h. Catches included species representative of both estuarine and shore fisheries. Catch composition differed significantly between the dolosse, quay wall and sandy shore habitats. Of these three micro-habitats, the dolosse were shown to support the greatest abundance and diversity (See Dicken 2010 for more information).

The biomonitoring programme has recently branched out to include a study using underwater video surveys. The surveys are conducted using baited-remote underwater video systems (BRUVs). Two cameras are mounted in a metal frame, with an arm extending forward and holding a bait cannister containing crushed sardine. These systems are then deployed overboard for one hour before being retrieved. The systems are deployed within all the Port habitats, at various depths and throughout the year. This research aims to provide another method for collecting data on fish species diversity, abundance and size data while also looking at

Figure 4: *A close up of a resident yellowbelly rockcod (Epinephelus marginatus) on an established reef in winter, when the water in Port Ngqura has lower visibility. Image: Vivienne Dames.*

habitat complexity. It will be interesting to see how the fish communities recorded on the BRUVs differ from those in the catch-and-release portion of the project. So far, 120 BRUV deployments have been completed since August 2022.

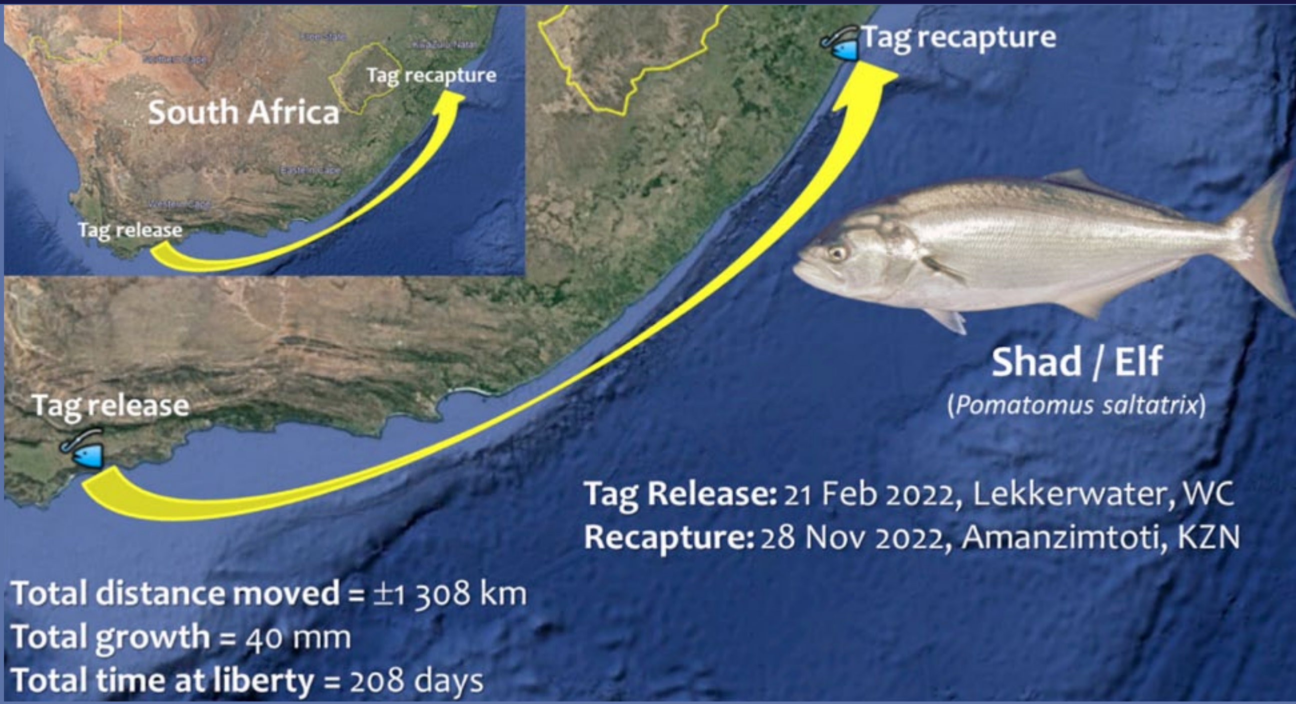
Although not formally analysed, this footage shows numerous, fully established reef ecosystems along the breakwalls. These reefs are covered in sponges, bryozoans, algae and are teaming with fish life. With these videos, we have discovered a diverse array of small tropical species utilising the Port in the summer months as a unique ecosystem. Several species which catch data has yet to document have also been added to the extensive species list in Port Ngqura. Added species include roman, dageraad, black and white musselcracker, galjoen and white stumpnose populations. In summer, high abundances of smoothhound, dusky sharks, raggedtooth sharks and diamond rays frequent these camera systems. It is without a doubt that this new angle of research will greatly contribute to our understanding of how fish communities utilise Port Ngqura, what their reasons are and what role the artificial reef structure plays in forming these unique communities. We would like to make special mention of the Save Our Seas Foundation (SOSF) and the South African Institute for Aquatic Biodiversity (SAIAB) for making this exciting research possible.

Figure 5: *Underwater picture of a tagged garrick (Lichia amia) in Port Ngqura, a popular recreationally targeted species. This is the second most caught, tagged and released fish in Port Ngqura with 1 842 caught, 1 277 tagged and 8.8% recaptures. Image: Vivienne Dames.*

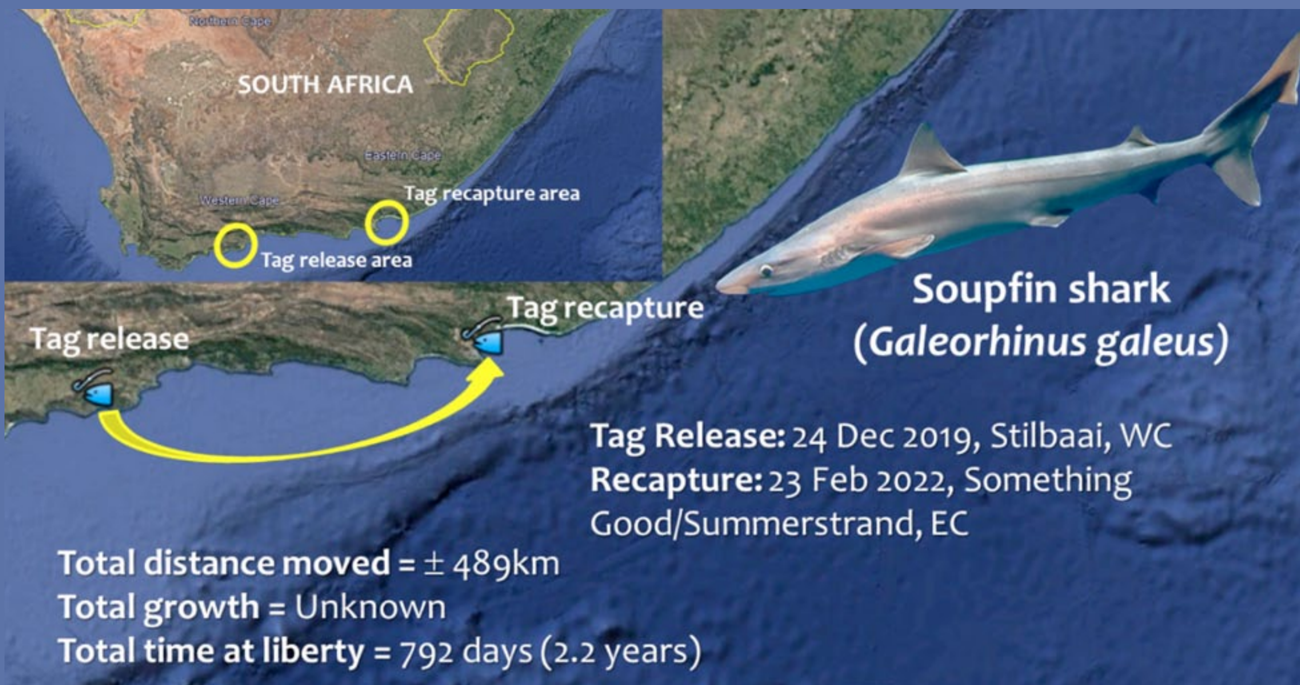
Although the port's primary objective is not as a recreational fishery, we hope that management will attempt to retain the biological potential of the Port by using design and construction features that provide enhanced fish habitat. Retention of the nursery function of the Port to many juvenile fish and shark species is essential considering the continued degradation of many estuaries, which are vital in the life histories of so many overexploited linefish species. The diversity and abundance of fish recorded within the Port of Ngqura suggests the potential use of ports and other artificial structures for enhancing the conservation potential of man-made seascapes for local fisheries in South Africa. We build defences against the ocean's power to keep our cities safe and dig out harbours to facilitate trade. In some developed countries, such as the UAE for example, more than half the coastline is artificial. To ensure that we keep these existing man-made structures fish friendly, we need to find out how animals adapt to them and shape their lives around them. In a man-made marine environment, this could prove crucial to their conservation.

Figure 6: *An adult scalloped hammerhead (Sphyrna lewini), a critically endangered species. Aggregations are commonly seen in Port Ngqura during the peak summer months, mostly consisting of juveniles. This species is handled with particular care, not being taken out of the water and released as quickly as possible. Image: Vivienne Dames.*

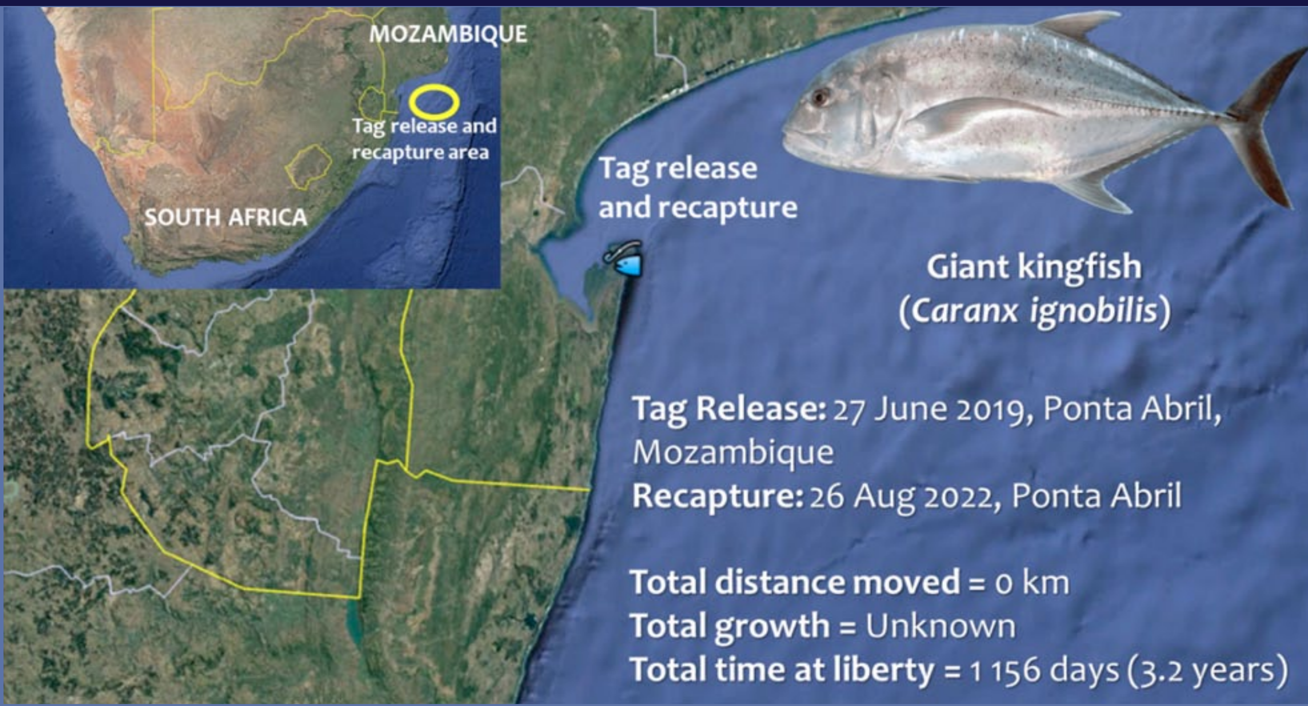
Exciting Recaptures From 2022



On the 26th October 2022 the ORI Cooperative Fish Tagging Project (ORI-CFTP) had its 399th elf/shad tag recapture! This fish was originally tagged by a team of citizen scientists at Lekkerwater, Western Cape (WC), during a field trip in the De Hoop Marine Protected Area (MPA), on the 21st February 2022, measuring 600 mm total length (TL). It was recaptured by Amith Kanthapersad having travelled an incredible 1 308 km north at Amanzimtoti / Nyoni Rocks, KwaZulu-Natal (KZN), just 208 days later, measuring 640 mm TL. It was recaptured during the closed season, so it was released again, hopefully to contribute to spawning that takes place at this time of year. This species is considered to be overexploited in South African waters and because of their compromised stock status, there is a strict daily bag limit of 4-per-person-per-day, a minimum size limit of 30 cm TL, and a closed season from the 1 October until the last day of November each year.

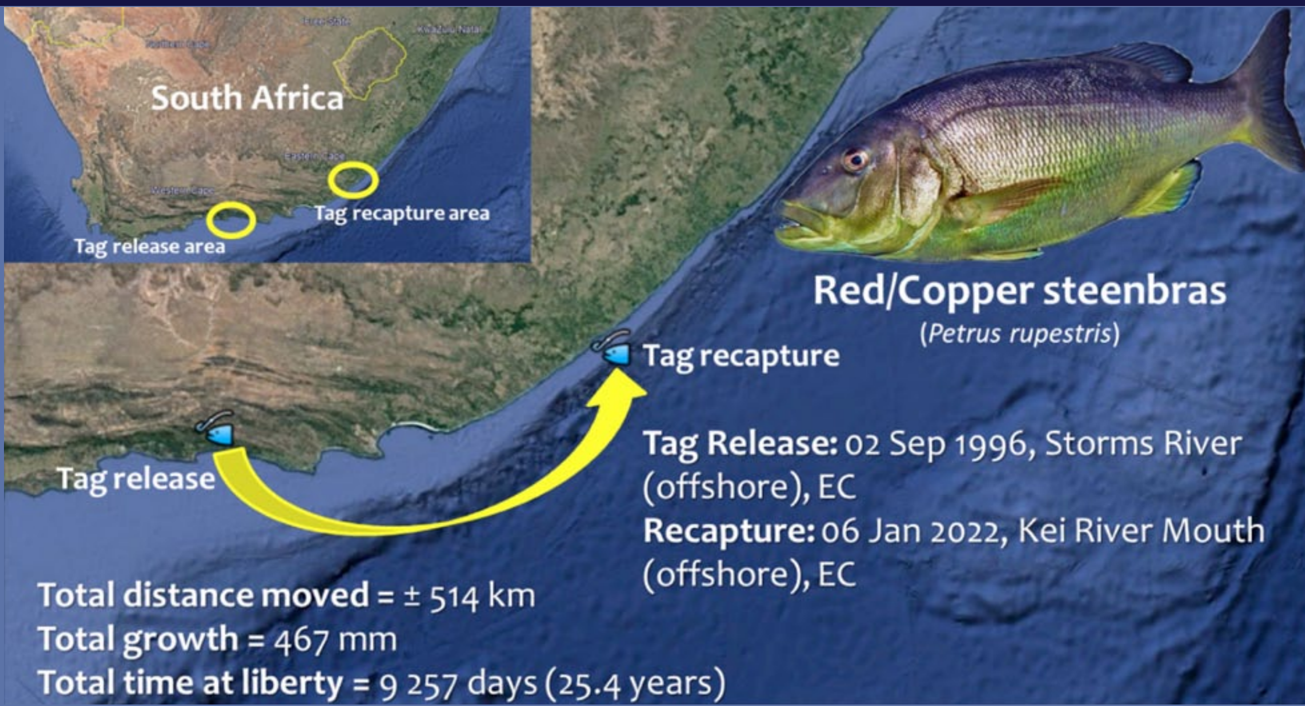


On the 23rd February 2022 we had our 38th soupfin shark (vaalhaai) tag recapture for the ORI Cooperative Fish Tagging Project (ORI-CFTP)! This soupfin shark was originally tagged by Jan Pieterse on the 14th December 2019 in Stilbaai, Western Cape (WC); unfortunately no measurement was taken. This shark was recaptured 792 days (2.2 years) later by Chris Burley in Summerstrand near the Something Good restaurant, Eastern Cape, measuring 112 cm pre-caudal length and having moved about 489 km up the coast. Unfortunately, no growth rate could be derived from this recapture. A recent stock assessment from 2019 indicated that this species is severely overexploited in South African waters and that current commercial catches are not sustainable. They have been evaluated as Critically Endangered on the IUCN Red List (2020).

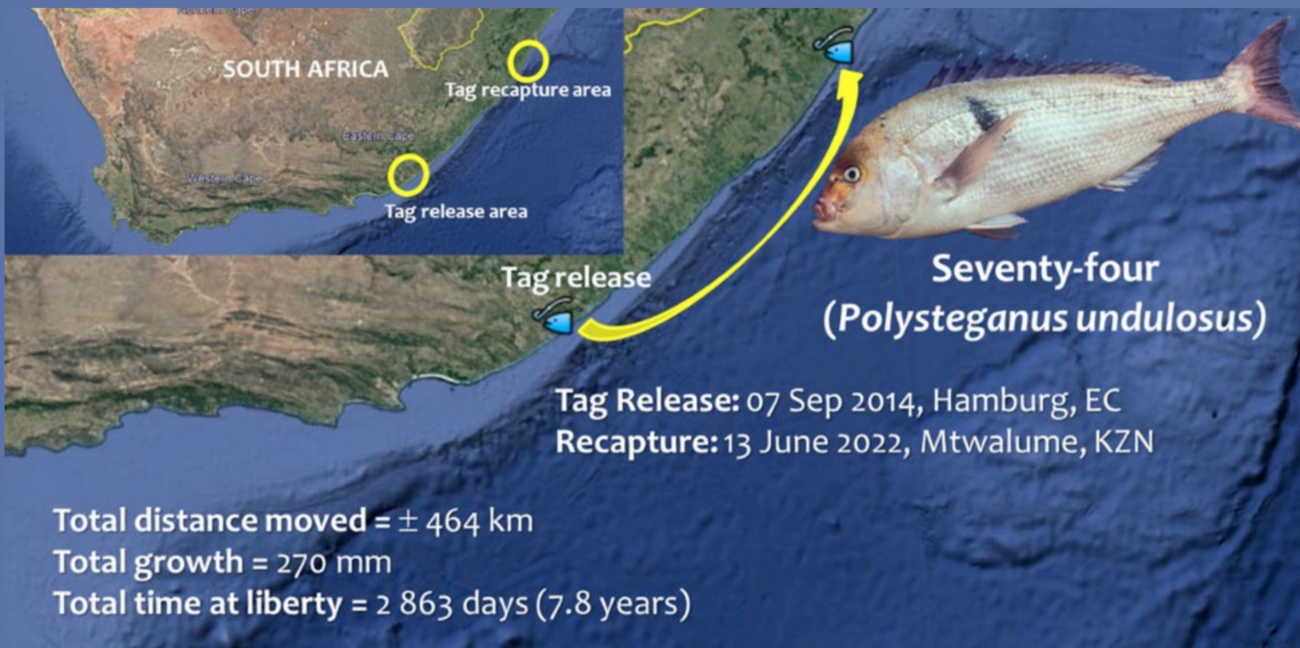


On the 26th August 2022 the ORI Cooperative Fish Tagging Project (ORI-CFTP) had its 166th giant kingfish (also known as GT or giant trevally) tag recapture! This fish was originally tagged by Peter Stewart whilst out on a charter trip with Mozambique Angling Adventures on the 27th June 2019 at a reef near Ponta Abril (Santa Maria/Hells Gate), Mozambique, measuring 900 mm fork length (FL). It was recaptured by Barry De Beer around the same reef in Ponta Abril 1 156 days (3.2 years) later. Unfortunately, no measurement was taken, but it was estimated to be about 105 cm and was released again to fight another day. Giant kingfish receive protection from capture in several no-take Marine Protected Areas (MPAs) along the east coast of southern Africa such as within the Maputo, iSimangaliso, Aliwal Shoal and Pondoland MPAs. Particularly sensitive areas include the Mtentu Estuary within the Pondoland MPA and an area within the Maputo National Park MPA where seasonal spawning aggregations take place.

On the 11th February 2022 we had only our 15th duckbill ray tag recapture for the ORI Cooperative Fish Tagging Project (ORI-CFTP)! This ray was originally tagged by Hansie Pretorius on the 3rd January 2020 at Bluewater Bay/Swartkops, Eastern Cape, measuring 117 cm disc width (DW). It was recaptured by Wian Bloem 770 days (2.2 years) later at the Klein Brak River, Western Cape, having moved about 402 km west, now measuring 128 cm DW having grown 11 cm. Duckbill rays are mainly found inshore down to depths of 150 m. They are sometimes seen at the surface leaping out of the water to rid themselves of parasites or suckerfish/remoras. They are extremely powerful fish and well respected by shore anglers. There is limited tag recapture data from this species, but what we have seen is that this ray is relatively mobile with an average distance moved of 41.2 km and a maximum distance moved of 402 km. A study using acoustic telemetry is now being conducted on this species.



On the 6th January 2022 we had a red steenbras tag recapture, which turned out to be a record teleost (bony fish) recapture for the ORI-CFTP! This fish was originally tagged at Middlebank off Storms River, EC, on the 2nd September 1996 by Dr Steve Brouwer (then with Rhodes University) during a research tagging field trip in the Tsitsikamma National Park. The fish originally measured 563 mm FL. It was recaptured an astonishing 25.4 years later offshore of the Kei River Mouth by Gary Thompson (with the same tag still intact - thanks to our ever-reliable tag suppliers, Hallprint©, Australia), measuring 1030 mm FL, and having moved about 514 km. According to David Hall, Managing Director of Hallprint, this is the second longest record time at liberty for a teleost fish amongst all the tagging programs that they supply tags to. The record is currently held by a southern bluefin tuna tagged off southern Australia that was at liberty for 9 639 days (26.4 years)!



On the 13th June 2022 we had our 26th seventy-four tag recapture for the ORI-CFTP, and our first one since 2017! This seventy-four was originally tagged by Brendan Croney on 7th September 2014 at Keiskama Point/Hamburg, EC measuring 500 mm FL. It was recaptured 2 863 days (7.8 years) later by Alan Fraser off Mtwalume, KZN measuring 770 mm FL. This individual moved about 464 km north and grew 270 mm during its time at liberty. The fish was re-released again hopefully to be able to spawn and contribute to population recovery. The Dwesa-Cwebe, Amathole and Addo MPAs likely play an important role in providing protection for juvenile seventy-four. The Pondoland, Protea Banks, Aliwal Shoal and Thukela MPAs will likely play a role in the protection of adults. In particular, the northern extension of the Aliwal Shoal MPA to include part of the Illovo Banks (which was one of the historic spawning grounds of seventy-four) will hopefully assist in protecting spawning aggregations of this species and help to ensure its recovery.

[Acoustic] Tag, you're it!

By: Taryn Murray

The Oceanographic Research Institute's Cooperative Fish Tagging Project (ORI-CFTP) is one of a few citizen science programmes worldwide worth boasting about. Not only has it been running for almost 40 years, which in itself is incredible, but the information collected by the ORI-CFTP over the past (almost) 4 decades has proven absolutely invaluable, allowing researchers to learn so much about the movements of multiple fishes, sharks and (to a lesser extent) rays.

Duckbill ray on PVC sheet – Matt Parkinson

Another method, whose data can complement the broad-scale nature of the ORI-CFTP data, is acoustic telemetry. This method essentially makes use of two pieces of equipment, which work via sound:

1) an acoustic receiver which is deployed in rivers, estuaries or at sea, and

2) an acoustic transmitter or tag, which is externally attached onto or surgically inserted into an animal, and can have a battery life of up to 10 years.

By placing the receivers in strategic locations, researchers can use the fine-scale high resolution data collected by the receivers to learn more about how much time tagged animals spend in certain places (residency), whether they return to certain areas (site fidelity), whether they undertake annual migrations, and so much more.

Receiver with floats in the sea – Ryan Daly

Acoustic telemetry is currently the most popular method globally to study the movements of aquatic animals. This popularity has led to the development of several large-scale acoustic receiver networks, spanning hundreds to thousands of kilometres, and situated in multiple different countries around the world. These include Australia's Integrated Marine Observing System's Animal Tracking Facility, the European Tracking Network, the global Canadian-based Ocean Tracking Network (OTN), and South Africa's very own Acoustic Tracking Array Platform (ATAP). This acoustic receiver array, which was formalised in 2011 and is currently made up of 300+ receivers, covers ~2200 km of the South African coastline, from False Bay in the Western Cape, to Ponta do Ouro at the South Africa-Mozambique border. The entire network is collaborative in nature, meaning that receivers belong to many different organisations including universities, research institutions and non-government organisations, but all the data collected on these receivers are placed into ATAP's central database, and is freely available to the various tag owners. This is a win-win situation for researchers in that they benefit from the nationwide infrastructure, and it opens doors for potential collaboration.

Mtentu receiver – Ryan Daly

While the ATAP is now considered a 'mature' network, it had humble beginnings with a single study that started in the West Kleinemonde Estuary in the Eastern Cape, where one large dusky kob, affectionately named 'Walter', was tagged and manually tracked for a week in 2002 (one fish, one species, one estuary). This then led to work on dusky kob and spotted grunter in the Great Fish Estuary between 2003 and 2004 (many fish, two species, one estuary).

Catface surgery – Bruce Mann

Eventually this work was expanded to include other estuary-dependent (and important fishery) species such as white steenbras, leervis/garrick and Cape stumpnose, and receivers were placed in a number of Eastern Cape estuaries (many fish, many species, many estuaries). A partnership was then struck (and formalised) with the OTN, which saw the ATAP receive a loan of 100 acoustic receivers in 2011. These receivers were initially placed in large coastal bays such as False Bay, Mossel Bay and Algoa Bay, but as more equipment was bought, other important coastal regions, such as Gansbaai, Port Alfred, Port St Johns and Sodwana Bay, received acoustic coverage too. And so the ATAP came to be, and has steadily expanded since, with many researchers incorporating their localised receiver arrays into the greater network (e.g. Shark Spotters' array in False Bay, Western Cape, and the Oceanographic Research Institute's array along the Wild Coast and KwaZulu-Natal coastlines).

The ATAP currently monitors the movements of 800+ individual animals comprising 38 species. These include important fishery species such as dusky kob and spotted grunter, large predatory sharks such as bull sharks and bronze whalers, Critically Endangered species such as whitespotted wedgefish (formerly giant guitarfish) and the common eagle ray, commercially important sharks such as soupfin and smoothhound sharks, prized sport fish such as giant kingfish and leervis/garrick, small endemic species such as flapnose houndshark and blue stingray, and rehabilitated turtles including green, hawksbill and loggerhead turtles. Overall, the ATAP database has more than 25 million detections, meaning that tagged animals have been recorded moving past a deployed receiver that many times.

When animals are dart tagged (such as volunteer anglers do in the ORI-CFTP), and hopefully recaptured further down the line, there are only two data points for that animal – time and location of capture and tagging, and time and location of recapture. This allows researchers to get a better idea of species' distributions, broad-scale movement information and growth rates. While the usefulness of dart tagging data such as that collected by the ORI-CFTP cannot be doubted, acoustic telemetry data have provided greater insights into the movements of fishes, sharks and rays, and more recently, turtles. This is mostly due to the larger volume of data collected per animal, as well as on a (much) finer scale. For example, the ORI-CFTP rarely reports on fish tagged and recaptured in estuaries, but rather groups these records into one of the designated ORI-CFTP localities along the coastline. In contrast, a telemetry study conducted in an estuary can provide information on hourly, daily and seasonal movements. These movements can also be linked to changes in water temperature or tide, time of day or moon phase. Telemetry has also significantly improved our understanding of the importance of estuaries to juveniles and even adults of important fishery species, such as dusky kob, spotted grunter, white steenbras and leervis/garrick. Another added bonus of acoustic telemetry is gaining a better idea of how much protection marine protected areas (MPAs), in which fishing is generally not allowed, afford different species. This is because receivers can be positioned within MPAs, and on putting the pieces of the movement puzzle together, we can get a better idea of how connected these places are, and how much time certain species might be spending in these areas relative to unprotected areas.

Grey reef shark release – Ryan Daly

Another added, yet unexpected and sometimes scary, benefit of acoustic telemetry is learning more about the fishing mortality of tagged animals. As far as we are aware, most tagged fish that have been recaptured have been reported due to a REWARD sticker being stuck onto the transmitter prior to tagging an animal. For example, of 10 juvenile dusky kob tagged in the Breede Estuary, nine, or 90% have been caught and kept. At least 100 leervis/garrick have been tagged during the past decade, and of these, 21% have been caught and kept, including a recent recapture of a fish eight years later that was tagged in 2015 at a length of 90 cm. But, thanks to acoustic telemetry, we know that this fish undertook its annual spawning migration to KZN every

Green turtle tagged with an acoustic and satellite tag – Linda Ness

single year since tagging – something we would never have known with dart tagging.

Ultimately, each method provides a huge amount of movement information about numerous different species, but when combining both dart tagging and acoustic telemetry, that is when we really begin to learn and understand so much more.

For more information on the ATAP, the research we do, and some exciting movements, be sure to follow us on social media!

Facebook: ATAP – Tracking fish movements
Twitter: @ATAP_ZA
Instagram: @atap_za

How to report the recapture of a tagged fish

This video below provides all the information that you need to correctly report tag recapture information. Tag recaptures are one of the most important and exciting aspects of the Oceanographic Research Institute's Cooperative Fish Tagging Project (ORI-CFTP). Recaptured fish allow us to investigate movement patterns, growth rates and population dynamics of the fish species tagged along the southern African coastline and ultimately contribute towards their conservation. What makes the ORI-CFTP so interesting and exciting is seeing where a recaptured fish was originally tagged; how far it has travelled; who originally tagged it and how much it has grown. As anyone who is fishing in the sea stands a chance of catching a tagged fish, it is very important to know exactly what information to record and how to send it to ORI.

Focus species
Catface rockcod
(*Mycteroperca [Epinephelus] andersoni*)

Movement: A recent study has identified that this species is likely to be a temporary resident on shallow inshore reefs. Catface rockcod show high residency and occupy relatively small home ranges (a few 100 m^2 in extent) for short periods often less than 12 months, whereafter they abandon their home ranges and make ranging-type movements in search of new habitat. Adults >400 mm are more mobile than juveniles, with distance moved increasing with fish size. There are anecdotal reports that they form spawning aggregations, suggesting that they may migrate for this purpose.

Total number tagged: 3 973

Number recaptured: 946 (24%)

Longest time free: 2 867 days or 7.9 years (1992 – 2000)

Longest distance moved: 525 km (Bats Cave [Mission Rocks, KZN] to Praia do Xai Xai, Mozambique)

Growth: They mature at 43 – 49 cm total length (TL) at an age of 3 – 4 years. Generally, males mature earlier than females, and some females may change sex to male.

Max size: 87 cm TL; 9 kg

Max age: 11 years

Breeding season: Spring to Summer (September to February)

Breeding location: In the northern parts of their distribution. There is little evidence of spawning south of Durban.

Feeding: They feed on crustaceans, small fish and squid.

Distribution: Endemic to the eastern seaboard of southern Africa, found from Quissico in southern Mozambique to Knysna in the Western Cape. However, some individuals have recently been caught as far south as the De Hoop Marine Protected Area.

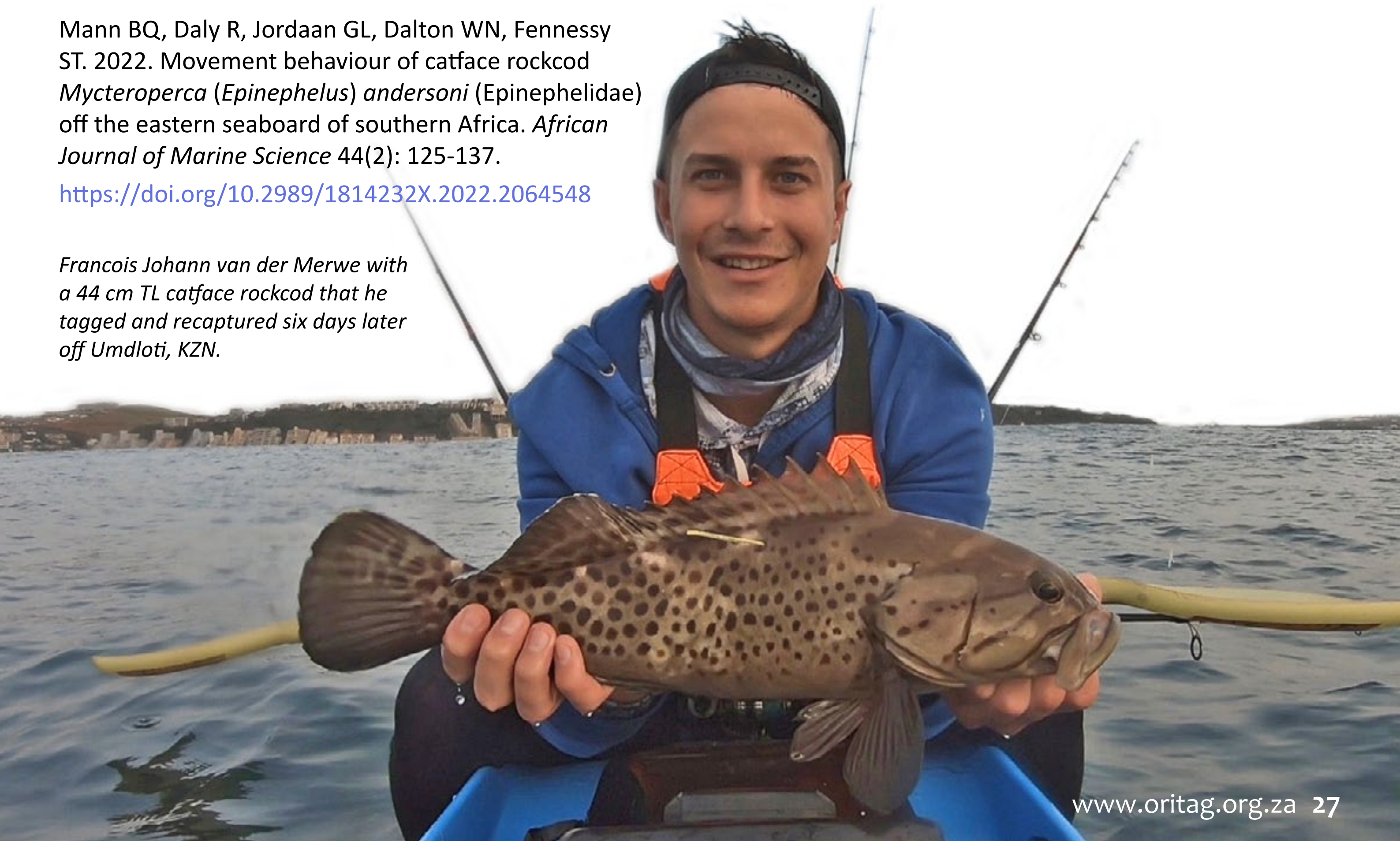
IUCN Red List status: Near Threatened (2018)

SASSI List: Orange (think twice)

Recent Publications:

Mann BQ, Daly R, Jordaan GL, Dalton WN, Fennessy ST. 2022. Movement behaviour of catface rockcod *Mycteroperca* (*Epinephelus*) *andersoni* (Epinephelidae) off the eastern seaboard of southern Africa. *African Journal of Marine Science* 44(2): 125-137.

https://doi.org/10.2989/1814232X.2022.2064548



Francois Johann van der Merwe with a 44 cm TL catface rockcod that he tagged and recaptured six days later off Umdloti, KZN.

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Resources for Anglers

Oceanographic Research Insitute (ORI)

Cell: +27 79 529 0711. Tel: +27 31 328 8159. Fax: +27 31 328 8188
Email: oritag@ori.org.za
Postal address: PO Box 736, Durban, 4000

The Tagging News is edited by Gareth Jordaan, Bruce Mann and Di Martin

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