TAGGING NEWS

SOUTH AFRICAN ASSOCIATION FOR MARINE BIOLOGICAL RESEARCH

The Tony and Lisette Lewis Foundation South Africa

Welcome to this the 21st edition of the Tagging News! There seems to be a resurgence of interest in fish tagging and whether this has been brought about by the increase in the number of fishing programmes on television, magazine articles or a subtle change in the behaviour of recreational fishermen, this is certainly good news for the fish! Overall 2007 was an excellent year for the ORI/WWF-SA Tagging Project - 177 new members joined the project, 9 139 fish were tagged and a record 676 (7.4%) recaptures were taken. This bodes well for the future of this long-term project which encourages the voluntary participation of anglers to contribute towards improving the understanding and conservation of our marine linefish resources.

Good progress has been made with converting our old tagging database into a new web-based system and we are proud to announce that, as a member of the tagging project, you can now see your own tagging efforts online! The website address is www.oritag.bluebox.co.za and to login you need to enter your tagging reference number and password (reference number again). You will be able to see all the fish you have tagged and those that have been recaptured since you joined the project. The online system allows you to change your personal contact details but you cannot enter or alter the tag and recapture data. For all tag and recapture data we request that you continue to send us the relevant information by post (PO Box 736, Durban, 4000), phone (031-3288159), fax (031-3288188) or email (ellie@ori.org.za) and Elinor Bullen our Tagging Officer will enter your data to ensure quality control. If you notice a discrepancy in your tagging data, please contact Elinor.

Another exciting new development has been the decision to produce an instructional tagging DVD for all active and new members of the tagging project. One of the weaknesses of the ORI/WWF-SA Tagging Project is that, despite providing new members with a tagging manual, we have not physically been able to teach our taggers how to handle and tag fish correctly. The DVD will show how different kinds of fish caught from both the shore and off a boat should be handled, measured and tagged, as well as how to report recaptures. This should help all our taggers do it better. We are seeking sponsorships so that these DVDs can be made available to our active members' free-of-charge. We have already had generous sponsorship from the South African Deep Sea Angling Association (SADSAA) and hope that the other recreational angling sectors will also contribute towards this worthy cause.

We continue to get numerous phone calls about fish length/weight conversions and would like to remind everyone of the fish weight calculator available on the ORI website at www.ori.org.za as well as the very useful cell phone service available (SMS *fish:speciesname:length* to 35010).

In this edition of the Tagging News we bring you an interesting article on a large-scale tuna tagging project being conducted in the Indian Ocean; promising results showing the recovery of linefish in the Pondoland MPA are highlighted and a useful article describes how to release bottom fish caught by vertical jigging. Sabine Wintner gives an update on tagging activities conducted by the Natal Sharks Board and we discuss how not to remove hooks from a fish's mouth. The recent international tagging conference held in New Zealand is discussed and we share a number of exciting recaptures with you.

A black mussel cracker is tagged in the Pondoland MPA

We would like to express our sincere gratitude to the Tony and Lisette Lewis Foundation (TLLF) and WWF-SA for providing funding for the Tagging Project and a big thank you to all of you - the members of the tagging project, for your ongoing support and contribution towards the wise use and conservation of our marine linefish resources. We sincerely hope that you enjoy this edition of the Tagging News and wish you tight lines and happy tagging!

Elinor Bullen Bruce Mann Bernadine Everett

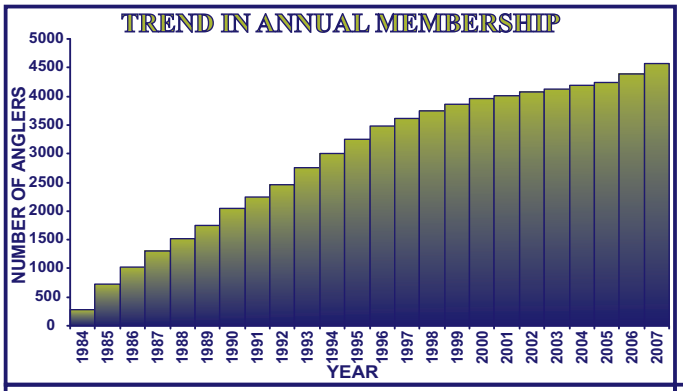
NUMBER 21
PUBLISHED JULY 2008
RESULTS FROM 2007

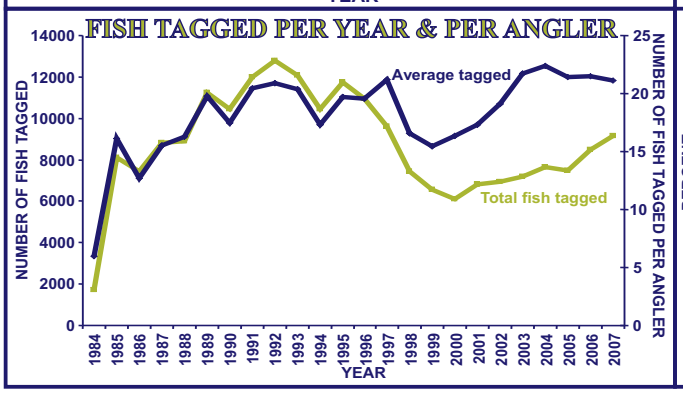
Published by: Oceanographic Research Institute, P. O. Box 736, Durban, 4000, South Africa

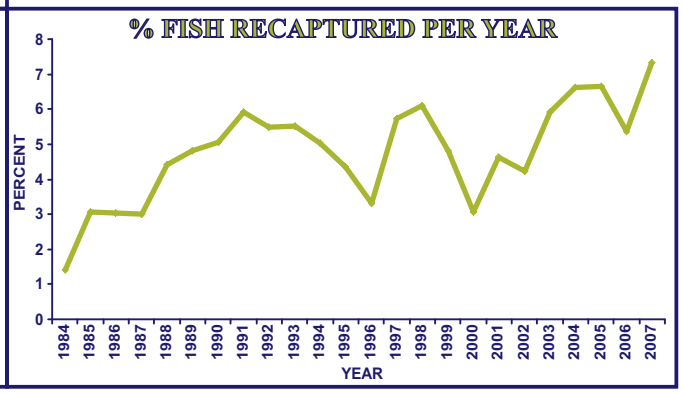
With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

PROGRESS TO DATE

Year	New Members	Active Members	Fish Tagged	Species Tagged	Recapture %	Maximum Years Free	Maximum Km Moved
1984	283	286	1710	104	1.4	0.63	723
1985	441	502	8089	156	3.05	1.06	804
1986	304	586	7436	170	3.04	2.81	1227
1987	271	569	8824	182	3	2.78	1374
1988	218	547	8896	176	4.41	4.09	1443
1989	232	569	11238	194	4.8	4.04	1016
1990	289	597	10437	164	5.05	4.04	1892
1991	208	586	11984	186	5.91	6.26	1625
1992	213	611	12777	191	5.5	6.19	1998
1993	299	591	12057	175	5.52	7.46	1606
1994	242	604	10451	180	5.02	5.98	1670
1995	249	595	11743	171	4.35	7.6	1676
1996	229	560	10942	175	3.31	7.83	1554
1997	141	453	9612	174	5.74	11	1897
1998	127	447	7420	152	6.1	8.42	1820
1999	123	426	6576	157	4.82	11.97	1186
2000	84	373	6104	148	3.07	10.06	1679
2001	65	394	6820	145	4.63	10.9	1273
2002	56	363	6943	159	4.24	12.83	1426
2003	54	331	7190	150	5.93	8.1	1751
2004	65	342	7663	153	6.61	9.82	1319
2005	53	350	7488	166	6.66	10.79	1391
2006	145	395	8477	170	5.35	10.89	1552
2007	177	434	9151	179	7.33	9.02	1405
Overall	**4568**	**3030**	**210028**	**355**	**4.97**	**12.83**	**1998**







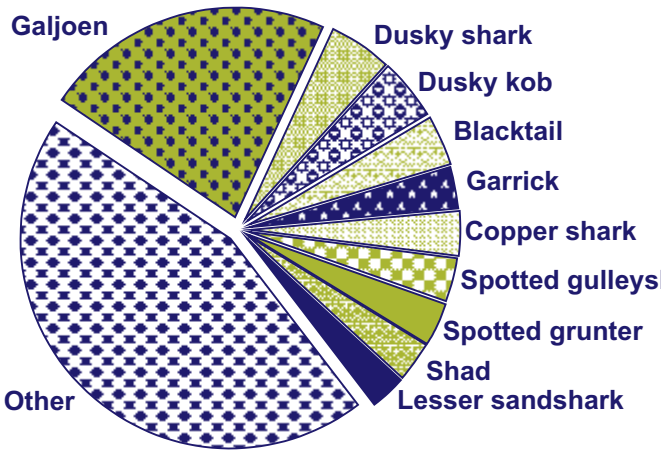
SPECIAL THANKS

The tagging project would like to thank the following company and individuals who gave us special support and donations during 2007:

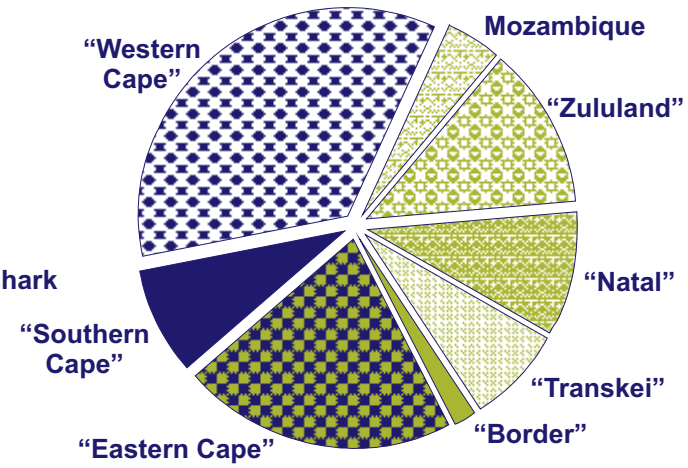
- A special thank you goes to Alan Cunningham from Purglass for making the billfish tagging poles for 30 consecutive years.
- Roelf Venter is thanked for his assistance in fitting handles to the tag applicators.
- Monetary donations were received with appreciation from the following taggers: Chris Rothmann, Grant Estman, Gawie Du Toit, John Dale, Ricky Maske and Garth Mc Gee.

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

MAJOR SPECIES TAGGED TO DATE (1984 - 2007)



% FISH TAGGED ALONG THE SOUTHERN AFRICAN COAST IN 2007



EXCITING RECAPTURES

Slinger
Chrysoblephus puniceus
4 089 tagged, 121 recaptured = 2.93 % recapture rate
Longest distance travelled 1 059 km
Maximum days free 582 (1.59 years)

One of the most remarkable recaptures taken to date was a slinger of 375 mm FL tagged by Bruce Mann and his team off Mtentu in the Pondoland MPA in April 2006. After 582 days at liberty this little fish was recaptured in November 2007 by a line boat operating off Quissico in southern Mozambique. This shows a movement of 1 059 km for what was previously assumed to be a resident reef fish species! This exceptional recapture was reliably reported to us by Rabia Torres from Instituto de Investigação Pesqueira in Maputo and may change the whole premise of how this important commercial species is managed in future.

Scotsman
Polysteganus praeorbitalis
275 tagged, 50 recaptured = 23.17 % recapture rate
Longest distance travelled 171 km
Maximum days free 1 362 (3.73 years)

Another exciting recapture is that of a scotsman measuring 412 mm FL tagged off Mnyameni on the Pondoland coast by ORI scientist Bruce Mann during April 2006. This fish was recaptured nearly a year later by Ryan de Beer while fishing off the Bluff, Durban. The fish had travelled a distance of 171 km and was released with its tag intact.

Tiger shark
Galeocerdo cuvier
385 tagged, 21 recaptured = 5.4 % recapture rate
Longest distance travelled 1 751 km
Maximum days free 1 199 (3.28 years)

Another remarkable recapture was that of a young female tiger shark named Isabelle. This shark was originally caught off Scottburgh by Mark Addison and was placed in the Sea World shark exhibit at uShaka Marine World. After two weeks on show she was tagged and released by the aquarium staff off Durban on 15 February 2007. Amazingly she was recaught by Mark on 12 December 2007 again off Scottburgh and was once more brought back for display at uShaka Marine World! After another short stay in the shark exhibit she was again released by aquarium staff off Durban and Mark reported to us recently that he had seen Isabelle while diving on the reefs off Scottburgh!

Catface rockcod
Epinephelus andersoni
1 160 tagged, 168 recaptured = 16.76 % recapture rate
Longest distance travelled 411 km
Maximum days free 2 867 (8.85 years)

Tagging in the Pondoland MPA by ORI scientist Bruce Mann has certainly produced some interesting results on the movements of certain species. Two catface rockcod, measuring 630 and 570 mm TL, were tagged during July 2006 in the reserve. One of these fish was recaptured 288 days later, 411 km away by Len Harvey while fishing off Mapelane, while the other was recaptured 230 days later by Geoffrey Renald while fishing off Blythedale Beach, 230 km north from where it was first tagged. One can only wonder what inspired these normally resident rockcod to travel so far up the KZN north coast - was it perhaps the urge to spawn?

Sharpnose stingray
Himantura gerrardi
1 185 tagged, 3 recaptured = 0.25 % recapture rate
Longest distance travelled 24 km
Maximum days free 465 (1.27 years)

On 1 February 2006 Paul van Tonder tagged and released a sharpnose stingray of 1 100 mm disk width while fishing at Bhanga Nek, near Kosi Bay. This ray was recaptured by Bryan Rapson in May 2007 in the same vicinity. During the 1.3 years at liberty, it had grown by 20 mm in width. The ray was re-released in good health with the original tag still intact.

King mackerel
Scomberomorus commerson
1 246 tagged, 45 recaptured = 3.65 % recapture rate
Longest distance travelled 1 552 km
Maximum days free 2 604 (7.13 years)

During the past 20 years the charter boats operating around Bazaruto in Mozambique have tagged and released over 1 000 king mackerel. It is not surprising that from time to time some of these fish are recaptured in South African waters. During February 2007 an angler reported to Kevin Cox (Natal Sharks Board) that he had caught a 7 kg king mackerel while fishing off Park Rynie. This fish had been tagged by Andrew Parsons while fishing off Vilanculos, Mozambique and had travelled 1 405 km during the 447 days at liberty.

INSTITUTIONAL SCIENTIFIC TAGGING FOR 2007

INSTITUTE	AREA	2007	TOTAL	% RECAPT
Marine and Coastal Management	De Hoop Marine Reserve	1586	41274	7.14
Oceanographic Research Institute	St Lucia Marine Reserve	491	3615	10.57
	Pondoland Marine Reserve	390	833	22.21
Port Elizabeth Museum	Ngqura Harbour	275	1120	5.54
Ezemvelo KwaZulu-Natal Wildlife	Kosi Bay Estuary Reserve	233	2079	8.99
South African Institute for Aquatic Biodiversity	Tsitsikamma Marine Reserve	204	12180	4.6
Natal Sharks Board	KwaZulu-Natal Coast	56	3830	6.24

ANGLERS WHO HAVE TAGGED TEN OR MORE FISH DURING 2007

NAME OF ANGLER	Facet	PROVINCE	2007	TOTAL	% RECAPT
SPARG, BRADLEY	RS EST	WC	185	1113	3.25
WALKER, SIMON	RS EST	WC	184	4225	8.07
SCHOULTZ, CHRIS	RS EST	EC	181	234	2.57
KYLE, EWAN	RS EST	KZN	167	925	17.41
HART, CLIFFORD	RS	WC	106	1691	7.51
MARAIS, CHARL	RS	WC	105	498	3.41
DE LA HARPE, JACQUES	RS EST	EC	104	249	4.82
CARR, BRAD	DS	EC	100	408	2.94
SAVILLE, GORDON	RS EST	WC	99	498	3.21
SAGRILLO, SILVIO	RS	EC	78	151	1.32
RUDMAN, WAYNE	DS EST	EC	76	285	2.11
KRUGER, ANTHONY	DS FLY	EC	72	243	8.64
KOCKOTT, BRAD	RS	KZN	71	116	2.58
WHITE, MICHAEL	EST	EC	65	133	1.5
HUMPHREYS, KEVIN	RS	KZN	61	612	5.23
LILFORD, CHARLES	RS EST	EC	60	1819	5
HAND, RUSSELL	RS EST	KZN	54	571	13.49
SMITH, LAWRENCE	RS	KZN	54	55	9.09
PAUTZ, DONOVAN	DS EST	EC	53	149	3.36
POPE, GORDON	RS EST	EC	52	809	7.79
SCROOBY, LLEWELLYN	RS	KZN	52	361	6.37
HAAKMAN, ANTON	RS EST	WC	52	137	2.19
BOTHA, ALAN	RS	KZN	51	599	7.35
KYLE, ROBERT	RS EST	KZN	51	857	14
MARSHBANK, GRANT	RS EST	EC	51	173	2.89
HUMAN, DAVE	RS	KZN	49	225	8
BOSCH, SEAN	DS EST	EC	45	60	0
MOLENAAR, MARTIN	RS EST	EC	44	200	6.5
DE CLERCQ, CAS	RS	KZN	44	172	2.91
KELLERMANN, GREG	RS	WC	42	114	1.75
FALLOWS, CHRIS	RS DS	WC	40	1512	3.44
SCOTT, JONATHAN	RS	WC	40	340	4.12
STIPP, CHRISTO	RS	WC	39	78	8.97
WOOD, AIDAN	RS DS	EC	38	210	3.81
MIDDLETON, GARY	RS EST	WC	38	67	0
VAN WYK, BERNARD	RS EST	WC	37	238	1.68
CRONJIE, JUAN	RS	WC	36	38	2.63
EGERSDORFER, TERANCE	RS	KZN	34	492	11.18
COMBRINCK, KEVIN	RS	WC	33	118	2.54
MULLER, CHRIS	RS EST	EC	33	73	0
KYLE, KIRSTY	RS EST	KZN	33	55	3.64
TANCREL, CHARLES	RS	WC	33	70	0
DE KOCK, NIC	RS EST	WC	32	555	5.77
OLIVIER, CHARL	RS	WC	31	101	0.99
VAN EEDEN, EDLEY	RS	FS	31	41	0

NAME OF ANGLER	Facet	PROVINCE	2007	TOTAL	% RECAPT
POTGIETER, RALDO	RS	WC	31	64	3.12
SHEPHERD, BOB	RS EST	EC	30	224	3.12
FOWLS, ADAM	RS EST	GAU	30	133	1.5
GROENEWALD, COENIE	RS	WC	30	176	3.98
GOVENDER, DEON	RS	KZN	30	51	3.92
TYLDESLEY, MIKE	RS EST	KZN	29	312	7.26
SHAW, CAMPBELL	RS EST	KZN	29	106	1.89
FRASER, ANDREW	RS	WC	29	41	2.44
STRAUSS, JOHAN	RS EST	WC	27	99	3.03
REIMAN, CORNELIS	RS	WC	26	36	0
VAN SCHOOR, "JC"	RS DS	WC	26	118	1.69
MANNING, ANDRE	RS	WC	25	106	0
BOTBYL, MARK	RS	WC	25	42	0
MORRIS, PATRICK	RS	WC	24	444	6.98
VAN WULVEN, ALLEN	RS DS	WC	24	288	3.12
BURTON, SIMON	RS EST	EC	24	262	3.44
SCOTT, KARLIENE	RS	WC	24	49	8.16
MCINTOSH, IAN	RS	KZN	24	33	3.03
MANN, BRUCE	RS EST	KZN	23	383	5.48
KILIAN, LEON	DS EST	EC	23	445	3.82
NAICKER, ROLAND	RS	KZN	23	52	5.77
KOTZE, DEON	RS EST	WC	22	160	3.7
COETZEE, JOHAN	RS	KZN	22	113	0.88
MALAN, NIEL	RS EST	WC	22	64	0
DALE, JOHN	RS EST	KZN	21	143	5.59
LE ROUX, JOE	RS	WC	21	119	3.36
AYLWARD, RYAN	RS	WC	21	55	1.82
DRENNAN, DAVID	RS DS	EC	21	252	2.38
POTGIETER, HENDRIK	RS	KZN	20	126	2.38
VAN DEN BERG, CHRISTO	RS	WC	20	164	4.27
GROBLER, GERRIE	EST	WC	20	126	7.14
WOOD, LYNTON	RS EST	EC	20	34	2.94
KRAHTZ, ANDRE'	RS	WC	19	140	2.14
HASCHICK, KEVIN	RS	EC	19	149	5.37
MC NICOL, TORQUIL	RS EST	EC	19	27	0
YOUNG, GRAEME	DS EST	EC	18	105	1.9
OOSTHUIZEN, JACQUES	RS EST	KZN	18	61	16.39
CARY, ARTHUR	RS	KZN	18	179	5.59
LA GRANGE, JOHAN	RS	WC	18	84	2.38
BOUWER, WILHELM	RS	WC	18	79	3.8
EUSTON-BROWN, DOUGE	RS	WC	18	29	0
VIVIERS, JACQUES	RS	WC	18	23	4.35
CHETTY, DONAVAN	RS	WC	18	25	0
SNYMAN, CHRISTIAN	RS	WC	17	119	3.36
VAN VUUREN, LEON	RS	KZN	17	39	0

NAME OF ANGLER	Facet	PROVINCE	2007	TOTAL	% RECAPT
WEDDERBURN, IAN	RS	EC	17	51	1.96
HUGO, FRANCOIS	RS	WC	16	134	2.99
GILBERT, BARRY	RS	GAU	16	92	4.35
SMEDA, GARY	RS	WC	15	29	6.9
LOVELL, MICHAEL	RS EST	KZN	15	57	0
HARE, RORY	DS	EC	15	18	0
MC CARTHY, JEFF	DS EST	EC	14	185	2.7
PYBUS, JULIAN	RS	KZN	14	381	3.41
IRVINE, DAVID	RS	KZN	14	34	0
LOMBARD, ANDRIES	RS EST	WC	14	23	4.35
KRUGER, TONY	RS	WC	14	70	7.14
RAWAT, ZAHIR	RS	KZN	14	139	4.32
COATES, JOHN	EST	WC	14	135	5.19
PRETORIUS, JOHANNES	RS	GAU	14	23	4.35
TREURNICHT, DANIEL	RS	WC	14	20	0
BROWNLEE, TIMOTHY	DS	KZN	14	14	0
ASMALL, BILAL	RS	KZN	14	27	3.7
SADLER, TONY	RS	WC	13	1421	5
ERASMUS, "J J"	RS	EC	13	72	4.17
DANIELL, GLENN	RS EST	EC	13	43	0
ORMSHAW, JIM	EST	KZN	13	75	0
VORSTER, ALLAN	RS	FS	13	52	9.62
LOUW, JEAN	RS	WC	13	142	4.93
KIDD, CLIVE	RS DS	KZN	13	37	2.7
THOMPSON, GREG	DS EST	KZN	13	16	0
BOUCHER, CRAIG	RS	WC	13	13	0
KIDSON, ADAAN	RS	WC	13	37	2.7
OTTO, JOHAN	RS	WC	12	200	2.5
WOODLEY, CLINT	RS	KZN	12	36	0
HAYE, CHRIS	RS	KZN	12	27	0
GOODWIN, GAVIN	RS EST	KZN	11	58	10.34
SHEPPARD, JOHN	EST	WC	11	132	3.79
PRINSLOO, RICKY	RS DS	KZN	11	18	0
LANGE, BRIAN	DS	KZN	10	225	4.89
THOMPSON, RAY	RS	KZN	10	516	6.2
BOONZAIER, ANTON	RS DS	WC	10	34	8.82
BOSCH, CALLIE	EST	EC	10	28	3.57
BOK, ANDRE	RS	KZN	10	20	5
SINGH, RAVEEN	RS	KZN	10	26	2.86
JOHNSON, HILTON	RS EST	EC	10	20	0
DU TOIT, PHILLIP	RS	WC	10	12	0
WOODROFFE, BASIL	RS	KZN	10	14	14.29
CARR, DAVID	RS EST	EC	10	24	4.17
BEUKES, TINUS	RS DS	WC	10	14	0

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

MAIN FISH SPECIES TAGGED UP TO 31 DECEMBER 2007

Note: data on some species have changed substantially from 2006 due to the correction of erroneous data discovered during the development of the new database

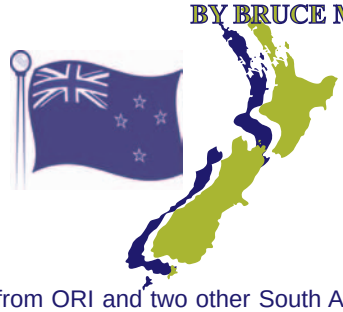
Species	Number Tagged	Recaptured Number	Recaptured %	Km Travelled Mean	Km Travelled Max	Days Free Mean	Days Free Max
galjoen	47170	3382	7.16	47	1892	333	3940
dusky/grey shark	10046	632	6.44	69	1374	78	2772
dusky kob/daga salmon	10003	592	5.95	30	1625	282	4370
blacktail/dassie	7788	205	2.62	6	358	231	2715
garrick/leervis	7230	497	6.81	252	1670	325	2563
copper shark/bronze whaler	7217	212	3.01	144	1790	398	3981
spotted gulleyshark	6936	371	5.3	32	911	453	3085
spotted grunter	6890	208	3.02	14	823	231	2860
shad/elf	6308	232	3.69	213	1676	99	1106
lesser sandshark/guitarfish	6063	71	1.17	41	726	324	2572
slinger	4089	121	2.93	9	1059	49	582
white steenbras	4083	205	5.02	49	620	284	2262
blackspotted smooth houndshark	3904	89	2.28	56	582	486	2425
giant sandshark/guitarfish	3780	189	5	32	360	281	1945
roman	3619	243	6.75	3	273	226	3549
spotted ragged-tooth shark	3199	257	8.07	243	1897	718	4685
sailfish	3065	28	0.9	63	1060	154	727
cow/broadnose sevengill shark	2776	132	4.77	61	597	367	4332
carpenter/silverfish	2432	18	0.78	54	290	670	3121
giant kingfish	2252	80	3.5	14	272	326	1921
diamond/butterfly ray	2221	13	0.61	263	1577	462	1890
zebra/wildeperd	2193	54	2.45	3	52	194	1399
blue stingray	2059	4	0.19	67	234	439	1059
black musselcracker/poenskop	1946	131	6.84	5	272	303	3295
largespot pompano	1905	35	1.83	8	114	195	1236
white musselcracker/brusher	1763	55	3.1	67	843	540	2313
bronze bream	1627	80	4.89	16	799	120	1465
springer/ladyfish	1494	29	1.94	25	412	360	1426
baardman/tasselfish	1465	17	1.16	2	17	289	679
longfin tuna/albacore	1362	34	2.57	312	1008	403	2585
perch/river bream	1342	198	14.71	0	42	342	1583
smooth hammerhead shark	1305	20	1.53	142	384	603	3075
westcoast steenbras	1279	81	6.33	57	280	227	1449
king mackerel/cuda	1246	45	3.65	365	1552	455	2604
sharpnose brown stingray	1185	3	0.25	8	24	221	465
catface rockcod	1160	186	16.76	8	411	136	2867
Natal stumpnose	1081	34	3.12	10	230	160	653
skipjack tuna	1009	1	0.1	1061	1061	464	464
yellowbelly rockcod	918	128	15.91	2	68	122	2220
Cape stumpnose	918	5	0.54	13	56	231	732
santer/soldier	909	34	4	17	136	316	1683
milk shark	868	29	3.32	78	363	161	772
brassy/greenspot kingfish	855	54	6.71	0	13	214	737
speckled snapper	827	252	30.07	2	63	85	1147
blacktip shark	797	35	4.36	85	1288	142	1070
river snapper/rock salmon	775	151	19.62	3	391	276	2403
soupfin shark/vaalhaai	772	22	2.82	144	1034	772	3586
striped/pyjama catshark	761	39	5.22	13	381	365	2096
duckbill ray	730	6	0.93	22	123	596	1427
yellowfin tuna	709	11	1.55	26	280	190	548
dageraad	648	20	3.08	38	592	432	1568
red/copper steenbras	620	46	7.22	253	923	1179	4392
squaretail kob	617	33	5.29	2	27	89	274
scalloped hammerhead shark	579	12	2.04	148	421	170	832
blacktip kingfish	575	24	4.15	1	11	114	416
honeycomb stingray	511	8	1.55	1	8	502	2543
grey grunter	500	28	5.7	0	5	167	1080
spinner shark	494	20	3.98	68	1055	84	472
stonebream/stinker	478	5	1.04	30	149	221	563
black marlin	461	2	0.43	4	8	80	159
geelbek/Cape salmon	460	2	0.42	109	218	78	138
hardnose smooth houndshark	456	6	1.54	89	307	281	870
great white shark	451	14	3.06	342	1548	366	959
queen mackerel/Natal snoek	413	3	0.7	4	12	376	1044
bigeye kingfish	404	19	4.63	18	163	146	765
john brown/janbruin	397	11	2.74	0	0	119	279
tiger shark	385	21	5.4	217	1751	358	1199
eagle ray	375	3	0.79	18	49	261	635
Zambezi/bull shark	365	27	7.28	53	539	259	2599
cavebass/lampfish	356	32	9.43	3	90	235	933
leopard catshark	338	23	6.76	40	722	660	4431
sandbar shark	322	6	1.86	166	345	250	536
eastern little tuna	312	0	0	0	0	0	0
white seacatfish/barbel	305	15	4.92	4	21	307	1895
seventy-four	303	5	1.53	110	521	723	2845
bonefish	286	1	0.35	6	6	17	17
largemouth queenfish	283	13	4.79	1	10	170	630
scotsman	275	50	23.17	3	171	167	1362
southern pompano	274	23	8.3	61	464	132	848
striped marlin	271	1	0.37	762	762	25	25
bluntnose spiny dogfish	264	4	1.52	188	669	615	1476
hottentot	241	12	4.94	1	10	154	792
potato bass	228	14	6.06	1	14	163	518
elephantfish/St Joseph	225	1	0.44	1342	1342	218	218
banded galjoen	214	7	3.15	80	562	218	507
white stumpnose	212	4	1.88	2	3	298	463
brown shyshark	203	6	2.96	2	10	445	933
blackspot shark	196	5	2.45	4	10	241	708
pickhandle barracuda	192	33	18.75	50	1737	227	1398
snapper kob	186	9	4.84	132	1487	378	805
red stumpnose	181	4	2.12	3	13	543	1233
bartail flathead/sand gurnard	181	5	2.66	4	18	273	796
halfmoon rockcod	160	21	14.69	4	45	202	2511
blue marlin	154	0	0	0	0	0	0
malabar rockcod	154	24	15.58	0	3	143	491
Cape snoek	153	1	0.65	136	136	491	491
flapnose houndshark	152	9	5.73	5	43	257	1147
javelin/mof grunter	152	16	10.53	9	65	173	2940
spearnose skate	144	2	1.35	0	1	136	270
whitespotted smooth houndshark	143	4	2.74	5	15	478	1627
dorado/dolphinfish	142	1	0.7	64	64	66	66

Species	Number Tagged	Recaptured Number	Recaptured %	Km Travelled Mean	Km Travelled Max	Days Free Mean	Days Free Max
greyspot sandshark	139	1	0.72	6	6	51	51
bluefin kingfish	125	2	1.48	1	2	109	218
blue hottentot	124	3	2.33	0	0	126	199
spotted eagleray	115	1	0.85	15	15	70	70
puffadder shyshark	113	10	8.77	0	0	79	483
flathead mullet	101	1	0.99	738	738	738	738
cock grunter	99	5	5.05	14	65	144	490
lemonfish	89	4	4.67	0	2	227	749
maasbanker/horse mackerel	88	0	0	0	0	0	0
sliteye shark	85	3	3.53	194	565	890	2652
broadbill swordfish	78	1	1.28	9	9	1263	1263
spotted spiny dogfish	74	1	1.35	36	36	120	120
smallspotted pompano	73	7	9.59	40	270	281	1218
russell's snapper	72	2	2.7	0	1	44	77
oxeye tarpon	69	0	0	0	0	0	0
great barracuda	67	16	23.53	0	0	179	467
thorntail stingray	65	2	3.03	0	0	295	357
banded catshark	64	8	12.5	16	55	423	1155
eeltail catfish/barbel	64	1	1.56	1	1	47	47
Cape gurnard	61	1	2.38	0	0	207	377
sailfin rubberlip	58	0	0	0	0	0	0
Java shark	55	2	3.64	14	18	67	76
yellowtail scad	51	0	0	0	0	0	0
doublespotted queenfish	50	1	2	0	0	537	537
striped mullet	47	1	2.04	1	1	230	230
green jobfish/kaakap	46	1	2.17	0	0	31	31
blue/ferdy kingfish	46	0	0	0	0	0	0
brown catshark	44	1	2.27	0	0	34	34
sand steenbras	44	1	2.22	0	0	79	79
Cape moonfish/moony	44	0	0	0	0	0	0
englishman	43	1	1.96	6	6	91	91
marbled electric ray	42	0	0	0	0	0	0
longfin kingfish	42	1	2.38	12	12	453	453
needlescaled queenfish	41	1	2.38	0	0	227	227
shortfin mako shark	40	4	9.76	19	69	294	786
panga	38	0	0	0	0	0	0
wreckfish	38	2	5.26	4	7	231	388
concertina fish	37	0	0	0	0	0	0
yellowspotted kingfish	36	0	0	0	0	0	0
bigeye stumpnose	36	2	5.41	2	3	33	38
blackfin reef shark	35	1	1.92	0	0	697	697
lyretail/swallowtail rockcod	35	0	0	0	0	0	0
Atlantic bonito	34	0	0	0	0	0	0
black seacatfish/barbel	33	9	37.5	0	0	29	353
thintail thresher shark	32	0	0	0	0	0	0
manta ray	32	0	0	0	0	0	0
short-tail stingray	32	2	6.25	0	0	39	77
blue emperor	32	2	5	0	0	162	280
silver kob	32	2	3.64	26	51	57	76
milkfish	31	0	0	0	0	0	0
steentjie	30	0	0	0	0	0	0
chub mackerel	30	0	0	0	0	0	0
whitebarred rubberlip	29	1	3.45	1	1	176	176
yellowfin emperor	28	1	7.14	0	0	0	181
koester	27	0	0	0	0	0	0
moustache rockcod	27	6	20.59	175	1200	1024	2990
thornfish	26	0	0	0	0	0	0
blue shark	25	0	0	0	0	0	0
prodigal son/cobia	25	1	3.85	36	36	479	479
thornback skate	24	0	0	0	0	0	0
brindlebass	24	2	8.33	0	0	80	149
tripletail/Lobotes	24	0	0	0	0	0	0
torpedo scad	23	0	0	0	0	0	0
spadefish	22	1	4.55	118	118	2724	2724
king soldierbream	22	1	4.35	0	0	29	29
shark remora	21	2	9.52	1	2	56	110
german	21	0	0	0	0	0	0
silver sillago/smelt	21	0	0	0	0	0	0
Indian mirrorfish	21	0	0	0	0	0	0
bludger kingfish	21	0	0	0	0	0	0
strepie/karanteen	20	0	0	0	0	0	0
blackspotted catshark	20	2	10	14	28	126	146
tomato rockcod	20	2	9.52	3	6	250	269
southern mullet	20	0	0	0	0	0	0
white-edged rockcod	20	0	0	0	0	0	0
cutlass/ribbon fish	18	0	0	0	0	0	0
devilray	18	0	0	0	0	0	0
bluespotted stingray	17	0	0	0	0	0	0
twotone fingerfin	17	0	0	0	0	0	0
false thornback skate	17	0	0	0	0	0	0
twinspot/bohar snapper	16	0	0	0	0	0	0
round ribbontail ray	16	1	6.25	0	0	74	74
rainbow runner	16	2	12.5	0	0	18	34
blueskin/trawl soldier	15	1	6.67	64	64	372	372
redspot emperor	15	0	0	0	0	0	0
Natal moony/kitefish	15	0	0	0	0	0	0
striped/oceanic bonito	15	0	0	0	0	0	0
Galapagos shark	14	0	0	0	0	0	0
threadfin mirrorfish	14	1	7.14	0	0	1	1
minstrel rubberlip	14	0	0	0	0	0	0
snubnose pompano	13	0	0	0	0	0	0
African angelshark	12	0	0	0	0	0	0
shortbill spearfish	12	0	0	0	0	0	0
grey reef shark	12	1	8.33	0	0	16	16
surge wrasse	12	0	0	0	0	0	0
barred needlefish	11	0	0	0	0	0	0
fransmadam	11	0	0	0	0	0	0
shortnose blacktail shark	10	0	0	0	0	0	0
yellow needlefish	10	0	0	0	0	0	0
white karanteen	10	1	9.09	0	0	0	0
dusky rubberlip	10	0	0	0	0	0	0

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

INTERNATIONAL CONFERENCE HELD IN NEW ZEALAND ON "ADVANCES IN FISH TAGGING & MARKING TECHNOLOGY"

BY BRUCE MANN (ORI) AND PAUL COWLEY (SAIAB)



Bruce Mann from ORI and two other South Africans, namely Paul Cowley (SAIAB) and Malcolm Smale (Bayworld), were fortunate to be able to attend this exciting conference held at the University of Auckland from 24 - 28 February 2008. Twenty years ago (1988) a similar landmark conference was held in Seattle, USA and the proceedings led to the famous book "Fish Marking Techniques". This publication has guided the use of tagging in fisheries science for the past two decades and it was time to bring together the world's leading experts to share their visions for the future and to document some of the amazing discoveries of recent times.

The conference focused on five key areas including: investigating new technology; biological markers; innovative uses of traditional methods; developments in modelling and data analysis; and applications in fisheries management and conservation. The advances in tagging technology over the past few years are truly incredible and we have gone from simple fin clipping, coded wire and plastic "spaghetti" tags to a whole array of new innovations including passive integrated transponder tags, radio telemetry (freshwater only), acoustic tags, archival tags, satellite tags and even genetic and chemical isotope tags! To give an understanding of what these different tags can do, a very brief description of each has been provided below:

- Fin clipping – the removal of one or part of a fin (e.g. the adipose fin in salmonids) to enable future detection of a previously caught and clipped individual. Mainly used for stock size determination.
- Spaghetti tags – an externally visible, plastic dart or T-bar tags with a unique number and address (e.g. like those used in the ORI/WWF-SA Tagging Project). Allows for the determination of fish movement, growth, mortality and stock size.
- Coded wire tags (CWT) – is a very small stainless steel wire tag 0.25mm in diameter and 1.1mm long. Tag can be injected into small fish with little effect on the fish and high retention rates. CWTs can now be injected automatically and electronically detected without the need to do it by hand.
- Passive integrated transponder (PIT) – is a very small electronic tag injected into the fish. The tag has a unique code but cannot be detected externally and the fish needs to be electronically scanned. Some PIT tags are now encapsulated in plastic and are harmless if swallowed. PIT tagging and recording can also be automated (see CWT).
- Acoustic tags – are small transmitters with limited battery life attached externally or internally. Transmitter tags emit a unique signal and can be tracked using a directional hydrophone or by stationary listening stations. Listening stations can be set in arrays to monitor localised movements and even longshore migrations.
- Archival tags – are mini-computer type data-logging tags which are either attached externally or internally. These tags can measure and record water temperature, depth and light intensity. The latter provides information on the geographic position of a fish by using known time of sunrise and sunset at any location. With limited battery life these tags must be physically retrieved from the fish to download the relevant information. However, a new development of these tags, called pop-up archival tags (PAT) enables an externally attached tag to release from the fish after a pre-set period of time and float to the surface. A further development of these tags allows the PAT to download information to a satellite once reaching the surface (i.e. pop-up satellite archival transmitter - PSAT).
- Satellite tags – are large tags attached externally (normally to the dorsal fin) of large fish and sharks. These tags need to be out of the water to enable satellite communication (at least for a few seconds) and offer the ability to accurately track an animal's movement (similar to the satellite tracker placed on a car). These tags are often used on marine mammals.
- Genetic tags - the genetic makeup of each individual animal is unique and sophisticated genetic techniques using microsatellite DNA can be used to describe the genotype of that individual from a small tissue sample. This genetic signature can therefore be used as a "tag" to look at population structure and connectivity.
- Chemical isotope tagging – fish are known to incorporate chemical signatures into the make-up of their otoliths (ear-bones). Otolith chemistry can therefore be used as a natural marker to identify the origin and environmental history of a fish.

A number of speakers at the conference mentioned that the rapid increase in tagging technology has outstripped our ability to use and model the resulting information adequately, thus providing a direct challenge for fisheries scientists and modellers. Yet other speakers highlighted that even with the improvements in technology there was still no replacement for large-scale conventional tagging, especially when using the resultant data for stock assessment purposes. The solution, at least in the short term, appears to be to use integrated approaches where both conventional tagging and newer electronic methods are used together.

It was certainly a fascinating conference and much of the content of this symposium is to be published in the next book by the American Fisheries Society - keep a good look out for it!

COMMERCIAL CHARTER GROUPS

NAME	GROUP	AREA	FACET	2007	TOTAL	% RECAPT
Adrian Westraadt	Linene Island Resort	Linene Island, Mozambique	DS RS FLY	81	219	0.46
Guy Ferguson	Azura Lodge	Benguerua Island, Mozambique	DS BF FLY	58	378	1.32
Andrew Parsons	Benguera Lodge	Benguerua Island, Mozambique	DS BF FLY	50	1586	4.1
Glanville Heydenrych	Benguera Lodge	Benguerua Island, Mozambique	DS BF FLY	45	432	3.01
Antony Diplock	Intrepid Gamefish Charters	Inhassoro, Mozambique	DS BF FLY	32	296	2.03
Duarte A. M. Ratio	Rani Africa Dev., Indigo Bay	Bazaruto Island, Mozambique	DS BF	25	508	0.21
Sean Amor	Hooked On Africa	Cape Town, Western Cape	DS	17	44	9.9
Kas van der Merwe	Black Watch Gamefish Charters	Richards Bay, KwaZulu-Natal	DS BF	4	26	0
Tom Bradfield	Lynski Deepsea Boat Charters	Durban, KwaZulu-Natal	DS BF	1	102	1.96

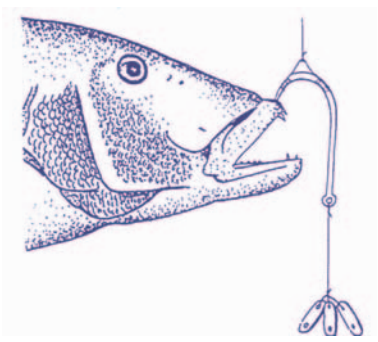
With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

VERTICAL JIGGING AND HOW TO RELEASE FISH CAUGHT AT DEPTH

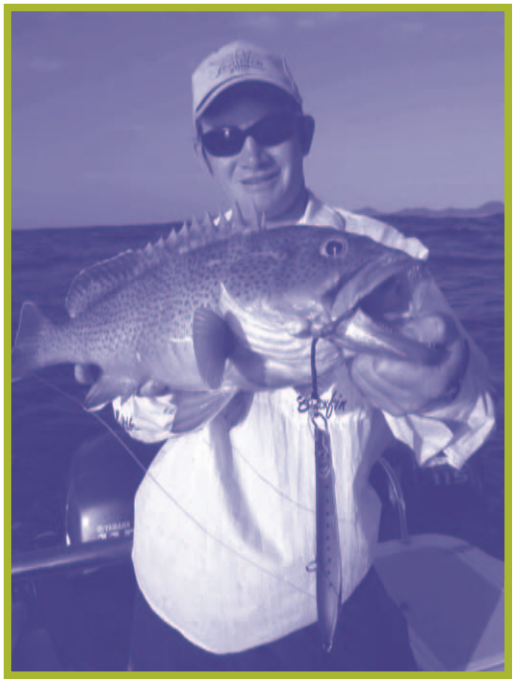
BY BRUCE MANN AND ROB KYLE

The relatively new technique of “vertical jigging” has made a profound impact on South African anglers and many are scrambling to acquire the tackle needed to practice this form of fishing. The basic requirements are a short, stout jigging rod and a reel with adequate line capacity and an extremely powerful drag system. The key to this technique is the modern high strength, low diameter braided lines and the jigs themselves. The jigs are basically heavy metal spoons up to 0.5 kg in weight and shaped so that they sink quickly through the water column. The “assist hooks” are attached using dacron to a solid stainless steel ring, onto which the jig itself is attached by means of a heavy duty split-ring. Either one or two hooks can be used and they can be placed on the top of the jig or at the bottom. Experience has shown however, that one heavy duty hook on the top of the jig is all that is required in most circumstances.

The way that the assist hook works is pretty simple. If you can imagine how most large predatory fish feed, they get close to their prey and then simply “suck” them into their mouths. Now, imagine a fish sucking at a heavy metal jig! Because the jig is heavy, it isn't going to move much towards the fish, but the assist hook, which is light and hanging freely, will be sucked straight into the fish's mouth and a positive hookup generally results. This technique enables the angler to fish at incredible depths, well exceeding 100 m, even when there is a bit of a current. Essentially, once you have found the fish on the sounder, the jig is free-spooled down until it hits the bottom where after it is worked up rapidly in the water column and allowed to flutter back down again. This type of fishing is hard work but the rewards have been impressive. Large amberjack (greater yellowtail) and even dogtooth tuna have been caught in deep water off KwaZulu-Natal and these fish have seldom previously been caught in our waters. The reason for this is that although these fish have probably always been there, these technological advancements have finally allowed us to fish effectively in this depth of water and provide access to these species.



A worrying aspect of this type of fishing is that a large number of bottom or reef-associated fish are also frequently taken while vertically jigging. These include a number of rockcod species such as yellowbelly and captain-fine, as well as fish such as seventy-four. Clearly, when fishing in a marine protected area such as the St Lucia and Maputaland Marine Reserves, or in the case of prohibited species such as seventy-four, it is essential that these fish are returned unharmed to the water. Bringing up fish from great depth results in a phenomenon known as barotrauma whereby the swim-bladder expands because of the reducing pressure and often forces the fish's stomach to invert and be forced out the mouth of the fish. Returning a fish in this condition is easier said than done as the large volume of air in the swim-bladder creates great buoyancy which prohibits the fish from swimming down again. A lot of people mistakenly think that by puncturing the stomach, they are saving the fish. This is far from the truth, and instead they are basically sentencing it to a slow death by infection. The method we recommend of returning fish in this condition is known as the “reverse hook method”. A large hook is required and the barb must be completely squashed or filed off. As the fish caught by vertical jigging are often large specimens over 10 kg, it is essential that the weight used to get the fish down is heavy enough to overcome the fish's buoyancy. A large >5 kg weight is attached by a short length of line to the eye of the hook (a down-rigger ball is ideal) and a thin rope (>50 m in length) is tied to the bend of the hook. Once the hooks of the jig have been removed from the fish's mouth (if possible this should be done without removing the fish from the water), the procedure involves gently placing the reversed hook in the top lip of the fish (hook pointing downwards) and allowing the weight to carry the fish down. Be careful that the hook is firmly in the lip and clear of your hand before you let go the weight! The first 10 m are the most critical but depending on the depth the fish was caught at, you should let the fish down to at least 50 m which will be sufficient to have recompressed most of the air in the swim bladder. The rope is then given a sharp tug to remove the hook from the top lip allowing the fish to descend unimpeded to the bottom and the weight can be recovered. Keeping the release rope on a large bottom reel allows for quick retrieve and easy stowage on the boat. In situations when we have been caught without a made up release rig, the anchor has been used in the place of the weight and we tied a big barbless hook onto the rope to operate the same way as described above. It is also a good idea to carry a spare weight in the boat on the off-chance that you catch a really big bottom fish that has too much air to be taken down by a single weight or in case you lose a weight.



If you have any further queries on vertical jigging or how to make up the reverse hook rig, please contact Rob Kyle on 0824532778 and he will be happy to be of assistance.

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

THE REGIONAL TUNA TAGGING PROJECT – INDIAN OCEAN

BY TERESA ATHAYDE, MICHAEL STOCKWELL & JEAN-PIERRE HALLIER

Indian Ocean Tuna Commission

Regional Tuna Tagging Project - Indian Ocean

Indian Ocean Commission

European Union

Around 900 000 tonnes of yellowfin, bigeye, skipjack and albacore tunas are fished from the Indian Ocean each year. This represents just over 20 % of the worldwide catch of tunas. For more than 3½ years, the Regional Tuna Tagging Project – Indian Ocean (RTTP-IO) has been conducting an ambitious experiment to learn more about the state of the Indian Ocean's tuna stocks and answer the burning question "are the region's precious tuna resources in good health or are they being over-fished?"

RTTP-IO is a 9th European Development Fund (EDF) project coordinated through the Inter-Regional Coordination Committee (IRCC) which includes the institutions of COMESA, IGAD, EAC, SADC and IOC. The Indian Ocean Commission (IOC), based in Mauritius, is the Contracting Authority for this project, while technical supervision is executed by the Indian Ocean Tuna Commission (IOTC), based in the Seychelles. The IOTC is responsible for the conservation and management of tuna and tuna-like species in the Indian Ocean. It has 27 Member States and its headquarters are based in the Seychelles. South Africa is a "Co-operating Non-Contracting Party" to the IOTC. The European Commission signed a Financing Convention with IRCC in December 2003, agreeing to be the sole financial donor for this project to the value of €14 million.

The project is simple: hire some fishing boats, capture, tag and release as many tunas as possible. Then retrieve as many tags back from the fishers when they catch the tagged fish, and finally analyse the results to better understand how many fish there are.

September 2007 marked the end of RTTP-IO's 2½ years of tag release activities. The release phase of the project was a resounding success and surpassed all expectations. The original target, to tag a minimum of 80 000 tuna fish with a broad spread in species composition, was exceeded in August 2006, fifteen months after commencement of the project. The final figure was 168 163 tuna tagged (32 % yellowfin, 21 % bigeye and 47 % skipjack). With more than 50 % of the fish tagged being yellowfin and bigeye, RTTP-IO also managed to give priority to these two species according to the recommendations of IOTC's Scientific Committee. The releases occurred in a wide area of the western Indian Ocean, from the northern Arabian Sea to the Mozambique Channel, including Oman, Kenya, Tanzania, Seychelles, Madagascar, Comoros and international waters.

So far 25 138 tagged fish (15 %) have been recovered and reported to the IOTC's secretariat in the Seychelles thanks to the help of local governments, research institutions, tuna fishing/processing companies, and purse-seine, artisanal, longline and sport fishermen.

Recovery systems are in place and are yielding good returns in the large majority of the countries of the region and in other non-regional countries that operate large "distant water" fishing fleets in the Indian Ocean such as France, Spain, Japan, Korea and China. Recoveries are being reported every day. As originally expected, the distribution of the recoveries between the different fleets shows the overwhelming dominance and co-operation of the purse-seine fleet, providing RTTP-IO with 96 % of its total recoveries.

However, targeting and broadcasting the message to the extensive artisanal fleets operating in the Indian Ocean is extremely difficult. Yet countries with these fleets such as Comoros, Tanzania, Maldives, Iran, Sri Lanka and Kenya are returning more and more tags. Recoveries from artisanal fleets make up 2 % of total recoveries.

Only 0.3 % of total recoveries so far have been reported by longliners. This is indicative of the difficulties the project faces in trying to communicate with these fleets. Nevertheless, it remains of great importance for longliners to report their recoveries and so the project continues to try to reach them. Beyond a certain size, almost all bigeye and some yellowfin tuna stop being caught by purse-seine fisheries and start occuring in the longliners' catches. Since RTTP-IO has released 54 663 yellowfin and 34 570 bigeye, many of these fish are likely to be caught by longline, artisanal and sport fishermen. RTTP-IO, therefore, needs everyone involved with these fisheries to participate in the large effort of recovering and returning IOTC tags and associated information (see below for further details).

In July 2008, the RTTP-IO entered its final stage. The IOC and the IOTC, invited fisheries scientists from around the globe to the Seychelles to analyse and report on the data that the project has been painstakingly collecting. The project is set to continue its activities for another 1½ years and more recoveries are expected. The data collected by the project will be made available to the scientific community, further rigorous

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

assessments will be carried out, and the results will be published. Ultimately it is expected that the tagging data will greatly improve the certainty of information available to fisheries managers and contribute to the long-term sustainability of tuna stocks.

JOIN THE EFFORT AND WIN REWARDS

Help the Regional Tuna Tagging Project – Indian Ocean to recover tuna tagged with yellow, white or red tags and win a reward. If you catch a tuna with a tag on its back with "IOTC VICTORIA SEYCHELLES- REWARD" written on it you need to keep the tag and collect the following information:

1. Name of the tuna species (yellowfin, bigeye or skipjack)
2. Length of the tuna from the nose to the middle of the tail (in cm)
3. Date and position where you caught the tuna
4. Your name and address

For a YELLOW tag you will receive a RTTP-IO T-shirt or US $10 reward.

WHITE tags will be rewarded with US $30 if you also return the fish head. RTTP-IO needs to recover the fish head for the collection of biological samples. The fish's otoliths (ear-bones) will be examined under a microscope for growth and ageing analyses.

If the tag is RED, check for an electronic device inside of the fish's belly - there should be an antenna protruding out of the fish. This device is an archival tag and records information such as depth, temperature and the position of the fish. If you find the archival tag you get the largest reward - US $250. As for the white tag, please keep the fish's head so that the otoliths can also be examined.

In order to return the tag and the required information please contact one of your country's project representatives: CapFish (chris@capfish.co.za), WWF-SA (spetersen@wwf.org.za) in Cape Town, ORI/WWF-SA Tagging Project (bruce@ori.org.za), or EKZN Wildlife (nairg@kznwildlife.com) in Durban. Alternatively, you can complete the online tag recovery form (www.rttp-io.org) and email the tag info directly to RTTP-IO's headquarters in the Seychelles.

In the case of a white or red tag, please contact the project (rttp@iotc.org) for information about forwarding the fish head and/or the archival tag. All tag finders will also be entered into the RTTP-IO's annual lottery draw with prizes of over US $2 000. For further information contact:

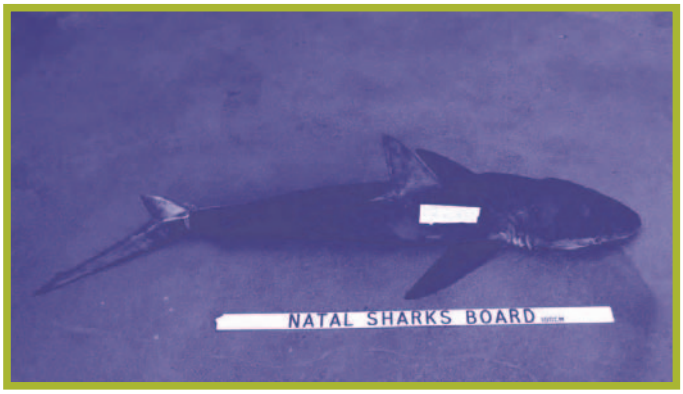
Regional Tuna Tagging Project – Indian Ocean
35-37 Kingsgate Travel Centre
Independence Avenue
C/o IOTC
PO Box 1011
Victoria, Seychelles

Tel: +248.610.846
Fax: +248.610.841
Email: rttp@iotc.org

ARE YOU A CULPRIT?

BY ELINOR BULLEN (ORI)

We all know how expensive fishing tackle is nowadays even down to the smallest swivel, so it is quite understandable that anglers often do not wish to leave even a hook in a fish's mouth when they are going to set it free. However, as far as we know, only a small percentage of anglers tagging for us actually squash the barb of their hooks to enable them to remove the hook more easily from the mouth of a fish. We encourage all anglers who intend releasing their fish to do this as it reduces damage to the fish's mouth, increases the speed and ease of hook removal and improves the fish's chance of survival after release. If the fish has swallowed the hook, we recommend that anglers do not try to remove the hook but rather cut the line as close to the eye of the hook as possible. If the hook is barbless, it will come out much more easily and either be spat out by the fish or pass through the fish's digestive system.



Unfortunately, there are some anglers who are not so considerate towards the well being of the fish they catch. Recently a sad example of this came to light when a small dusky shark was reported caught up in the shark nets off Durban. The shark weighing 29 kg was first tagged off Umhlanga Rocks; 21 days later it was recaptured in the same area, retagged and released again. A further 20 days later it was recovered in the shark nets off Durban, barely alive. It was noticed that the sharks jaw had been cut through on one side by an angler so that he could remove his hook more easily. This action resulted in the shark not being able to feed as it could no longer open or close its mouth. The cut on the jaw had become infected and the animal was in very poor condition. It was taken back to the Natal Sharks Board H/Q where it was weighed and found to be only 21 kg.

During its 40-day ordeal the shark had been unable to feed and had lost 8 kg in weight since it was first tagged.

Please handle fish you wish to release very carefully and use barbless hooks whenever possible!

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

MONITORING THE EFFECTIVENESS OF THE NEW PONDOLAND MARINE PROTECTED AREA IN PROTECTING OUR LINEFISH STOCKS

BY BRUCE MANN (ORI) AND MARC LANGE (NSB)

Following the proclamation of the Pondoland Marine Protected Area (MPA) in June 2004, which included a large 40 x 10 km no-take zone (i.e. no boat fishing) between the Sikombe River and the Mbotyi River, a project was established by ORI to monitor the recovery of reef fish populations. Four 2 km^2 reef areas were selected (Fig. 1), two inside the no-take zone (i.e. off Mkambati and Mtentu) and two in the adjacent exploited area (i.e. off Mnyameni and Mzamba). The reef type in all four areas selected was similar to enable a statistically valid comparison to be made between all four areas. The depth of the selected reef areas was limited to 30 m to reduce the stress associated with barotrauma (i.e. expanding of a fish's swim bladder when it is brought up from depth) and to enable SCUBA diving to be conducted on the reefs to count fish underwater.

Figure 1. Map showing the four 2 km^2 sampling sites used to compare catches within and adjacent to the no-take area in the Pondoland MPA.

The Natal Sharks Board agreed to make their skiboat based at Port Edward and a skipper available for this project and catch and release fishing has been conducted in all four areas on a quarterly basis since April 2006. During each two-day field trip, each area is fished for approximately three hours by three anglers and all fish are carefully landed on a wet foam mattress, measured and released. Barbless circle hooks are used to minimize hook damage and swallowing of hooks. Fish that show signs of barotrauma are pricked using a hypodermic needle which is inserted into the swim bladder through the body wall to release gas. Important linefish species greater than 30 cm fork length are tagged and released with ORI tags and the exact locality of each fish tagged is recorded using a GPS.

To date this project has revealed some extremely interesting results. The catch per unit effort (i.e. the number of fish caught per angler per hour), has been nearly double in the no-take areas compared to the adjacent exploited areas (Fig. 2) implying a greater abundance of linefish in the protected area.

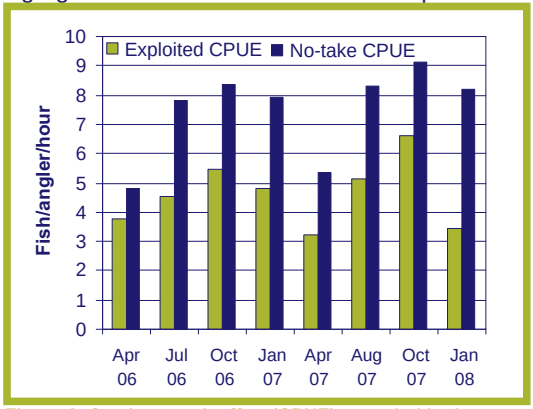


Figure 2. Catch per unit effort (CPUE) recorded in the no-take areas of the Pondoland MPA compared to the adjacent exploited areas.

The average size of fish caught in the no-take areas is also generally larger than those caught in the exploited areas (Fig. 3). These results have been confirmed by undertaking an underwater visual census of the numbers and size of fish in the four reef areas and provide strong evidence for the value of no-take MPAs in protecting resident linefish species.

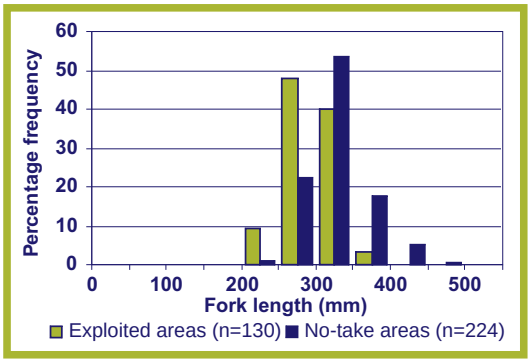


Figure 3. The length frequency histogram of slinger caught in the no-take areas of the Pondoland MPA compared with the adjacent exploited areas (notice the greater number caught in the no-take areas)

The tagging study has also shown remarkable results with an overall recapture rate of 22 %. The main species tagged, including scotsman, catface rockcod, yellowbelly rockcod and black musselcracker, have shown a high degree of residency, and, with time, we will be able to plot the home range size of these species. Despite the high degree of residency, a number of tagged fish have moved out of the no-take area into the adjacent exploited area (see Exciting Recaptures). This so called "spillover" is one of the ways in which MPAs can improve fishing in adjacent exploited areas.

A number of anglers from local skiboat clubs have been invited to participate on this project to convince them of the effectiveness of the MPA i.e. "seeing is believing"! Hopefully the experience witnessed by these anglers has helped to strengthen support for the Pondoland MPA as such areas are critical to the conservation and long-term future of our linefish stocks.

Please remember that if you catch a tagged fish you should record the following information: fish species, tag number, date of capture, locality of capture, fish length (indicate measurement type e.g. fork length or total length), whether the fish was kept and the anglers name and contact details. This information should be forwarded as soon as possible to: The Tagging Officer, Oceanographic Research Institute, PO Box 736, Durban, 4000. Tel: 031-3288159, Fax: 031-3288188, Email: ellie@ori.org.za.

Marine and Coastal Management and the South African Association for Marine Biological Research are gratefully acknowledged for providing funding for the project.

A catface rockcod has gas removed from its swim bladder to minimise barotrauma.

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

NATAL SHARKS BOARD 1984 - 2007 TAGGING REPORT

BY SABINE WINTNER, NSB

Staff tagged a total of 51 sharks, 19 of which were additionally injected with tetracycline for ageing purposes (Table 1). The majority of these animals (36) was caught in the nets or on drumlines and comprised mainly dusky and tiger sharks. None of the 51 sharks tagged this year have been recaptured to date.

Table 1: Number of sharks tagged and released from the nets/drumlines.

SPECIES	TAGGED	INJECTED
Blacktip	2	1
Dusky	14	6
Great white	1	1
Mako	2	1
Raggedtooth	4	2
Spinner	1	1
Tiger	12	3
TOTAL	**36**	**15**

Of the total of 51 sharks, 15 were tagged after being captured by means other than the nets or drumlines. Four tiger sharks were tagged while feeding on a humpback whale carcass off Margate in July. Two houndsharks were tagged by staff during private outings and three raggedtooth sharks were tagged underwater at Leven Point using of a modified spear gun. In August, Sea World at uShaka Marine World extended an invitation to NSB researchers to tag three raggedtooth sharks prior to their release. The sharks, which had been at Sea World for about 10 months, were sedated, tagged and injected with tetracycline before being transported to Port Edward, where they were successfully released. Three Zambezi sharks were tagged during a fieldtrip to the Wild Coast. The purpose of this trip was to establish if there were newborn Zambezi sharks present in the various estuaries/rivers and to tag them. Overall shark fishing time was 39 hours with a total of four captures: two newborn (between 4 and 6 weeks old) female Zambezi sharks of 57 and 60 cm PCL (both tagged with A-tags) and one two year old male of 92 cm PCL (caught twice), which was injected with tetracycline.

The 19 sharks that were injected with the chemical tetracycline are part of the TETRACYCLINE TAGGING PROGRAM, which was started in 1993 to assist with the ageing of sharks. Sharks can be aged by counting growth rings in their backbone, very much like ageing a tree. When the shark is injected with the chemical tetracycline an “artificial growth ring” is created which can be used as a time reference. Injected sharks are tagged with an orange spaghetti tag labeled "Tetracycline" and the tag number is prefixed with "BT", in contrast with the normal yellow spaghetti tag with a "B" number. Please remember that we are dependent on anglers to make recaptured tetracyclined sharks available to our research department. The NSB is offering a "reward" of R100 to the angler who makes the shark or a 20 cm long piece of the backbone AND the tag available, i.e. we will collect the shark or the backbone and the tag. The backbone should be wrapped in tin foil or newspaper and stored frozen, in darkness so that the chemical does not fade.

The tagging of rays and guitarfish caught in the nets continued and three giant guitarfish and two bullrays were tagged. Three black musselcracker and one scotsman were tagged by staff during private outings.

Of the 36 sharks tagged, 15 were caught on drumlines. As reported last year, in February 2007, the NSB introduced drumlines into service. At each beach between Hibberdene and Port Edward approximately half the nets were replaced with drumlines at a ratio of four drumlines to 213 m of net. Each drumline has a single 14/0 shark hook baited with fish that are caught as bycatch in the hake trawls. The advantage of drumlines is that they are more selective than nets, taking a greatly reduced catch of non-shark animals such as dolphins, rays and turtles and also of certain shark species.

For more information about drumlines and how they work visit the NSB website http://www.shark.co.za/nets.htm or the Queensland website http://www2.dpi.qld.gov.au/fishweb/2920.html

BILLFISH TAGGED BETWEEN 1976 AND 2007

AREA	SWORDFISH	SAILFISH	STRIPED	BLACK	BLUE	WHITE	SHORTBILL	TOTAL
UNITED ARABIC EMIRATES								
Dubai	0	122	0	0	0	0	0	**122**
INDIAN OCEAN ISLANDS								
Mauritius	0	2	1	2	55	0	0	**60**
Seychelles	0	19	0	0	0	0	0	**19**
Madagascar	0	40	1	0	0	0	0	**41**
KENYA								
Malindi to Pemba	30	1216	85	19	10	0	1	**1361**
MOZAMBIQUE								
Carbo Delgado to Beira	0	10	1	0	0	0	0	**11**
Bazaruto to Pomeni	0	1055	1	97	7	0	0	**1160**
Morrungulo to Pta. Do Ouro	0	120	2	20	3	0	0	**145**
SOUTH AFRICA								
Kosi Bay to Sodwana Bay	0	112	46	168	44	0	5	**376**
Cape Vidal to Mapelane	0	247	12	59	5	0	2	**326**
Richards Bay	0	10	17	22	23	0	2	**74**
Durban	0	100	104	73	6	0	2	**285**
Park Rynie	0	9	0	1	0	0	0	**10**
Cape Point	48	0	0	0	0	0	0	**48**
WEST & NORTH AFRICA								
Bom-Bom	0	1	0	0	1	0	0	**2**
Algiers	0	1	0	0	0	2	0	**3**
Tanzania	0	1	1	0	0	0	0	**2**
GRAND TOTAL	**78**	**3065**	**271**	**461**	**154**	**2**	**12**	**4045**

With thanks to the Tony and Lisette Lewis Foundation South Africa for generous sponsorship

REGISTER OF BILLFISH TAGGED DURING 2007

BOAT NAME	BOAT CAPTAIN	NUMBER OF BILLFISH TAGGED
Big Time	Francois Erasmus	**1** sailfish
Black Magic	Lappies Labuschagne	**4** blue marlin, **2** black marlin, **2** striped marlin, **2** shortbill spearfish
Bob Hope	Guy Ferguson	**2** black marlin
Brokie	Brandon Brokensha	**2** sailfish, **1** black marlin
Canta Libre	Gerhard Breedt	**3** sailfish
C - Angel	Willem Meintjies	**1** blue marlin
C - Breeze	Henk Du Plessis	**1** black marlin, **1** sailfish
Cobra Cat	A. Smith	**1** blue Marlin
Cool Runnings	Herman Olivier	**3** black marlin, **2** blue marlin
Dolos	Louis Fourie	**1** striped marlin
Droom Vanger	Attie Botes	**1** sailfish
Enforcer	P. A. Feuilherda	**1** sailfish
Fish Therapy	Andrew Parsons	**26** sailfish, **1** black marlin
F M Charlie	Johan van Den Berg	**1** sailfish
Gaffit 2	Grant Estman	**1** black marlin
Garfield 4	Jon Lindsay	**2** sailfish
Intrepid	Antony Diplock	**19** sailfish
Ivanhoe 4	Dick Pratt	**2** sailfish
Jolanda	Chris Steenberg	**1** sailfish
Lady Rose	Andre' Strydom	**1** blue marlin, **1** striped marlin
Lauriska	Danie Visser	**1** black marlin, **1** sailfish
Little Joey	Chris Rothman	**1** black marlin, **1** blue marlin
Live Wire	P D 'Offay	**1** sailfish
Longfin	Andre Kieviet	**2** sailfish
Lynski	Tom Bradfield	**2** sailfish
Magwana	Mark Warner	**1** sailfish
Makhalimpi	John Chubb	**4** sailfish
Malachite	David Royston	**1** sailfish
Mala Mala	Pieter Vorster	**1** black marlin
Maxsea	Kevin Hojem	**2** sailfish
Megaladon	Rhys Griffiths	**1** sailfish
Mia	Johan van Vureen	**1** sailfish
Mnumzane	Graham Bennett	**1** sailfish
No Tom	Phillip Irving	**1** sailfish
Optimistic	Clive Kidd	**1** sailfish
Pelagic	Brent Craig	**3** sailfish
Piromero	Robin Vermaak	**1** blue marlin
Quick Silver	Trevor Dubber	**1** black marlin
Quirimbu	Duarte AM Ratio	**4** black marlin
Reel Time	Darren Gray	**1** sailfish
Salt Water	Graham Hodgson	**1** black marlin
Sea Ducer	Garth Mc Gee	**4** black marlin
Sea Quest	Dankie De Villers	**2** sailfish
Seevarkie	Johan Smith	**3** black marlin, **1** blue marlin
Shawski	Peter Rindl	**3** sailfish
Skybird	Dave Knudsen	**1** black marlin, **1** blue marlin
Stephe	Phillip Marx	**1** black marlin, **1** blue marlin
Sugar Stick	Grant Harrison	**2** sailfish
The Don	Donovan Wadeley	**1** sailfish
The Gap	John Marshall	**4** sailfish
The Full Monty	Monty Montgomery	**1** blue marlin
Top Cat	Andre Kieviet	**1** sailfish
Vamizi	Indigo Bay Skippers	**22** sailfish
Wave Walker	Neels Cornelius	**1** black marlin
Yolanda	Chris Steenberg	**1** blue marlin
Zambezi	Jan Strydom	**1** striped marlin