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**South Africa's Annual Report to the Ecologically Related Species Working  
Group (ERSWG) of the Commission for the Conservation of Southern Bluefin  
Tuna.**

**February 2017**

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## 1. Introduction

### *Large pelagic longline fishery*

In South Africa, southern bluefin tuna (SBT) is predominantly caught in the Large Pelagic Longline fishery. The industry can be divided into two distinct groups: the local and the foreign (bi-lateral agreement) owned vessels. The local longline vessels have gear configured to target swordfish, but catch composition is split between swordfish, tropical tunas (bigeye and yellowfin tunas) and sharks (mako and blue sharks). The general method and gear used to target swordfish involves setting lines at night (to reduce seabird mortality) with squid bait using buoy - and branch lines of 20 m length. Depending on the vessel size, 700 – 1500 hooks are set per line. Stainless steel hooks are prohibited and wire traces used to be allowed on local vessels until 60% of the precautionary upper catch limit (PUCL) of 2000 t for sharks (blue and mako sharks mainly) had been reached. However, the 2017 Large Pelagic permit conditions have banned the use of wire traces. The larger, generally foreign owned, vessels that target tropical tuna are able to fish further offshore and differ slightly in their methodology. These vessels set up to 3000 hooks per set with a combination of fish and squid bait, using deeper branch lines and varying hook numbers per basket to influence the setting depth. The smaller longline vessels carry ice whereas the larger vessels have freezers. Fish are dressed at sea and no further at-sea processing is conducted. Swordfish are mainly targeted in the north west and north east of the South African EEZ and beyond in the Mozambique Channel, whereas tropical tunas are caught along the entire continental shelf edge. Southern bluefin tuna catches in South Africa have been largely incidental to date, with little to no targeting for the species due to the small (40 tons) annual quota. Within the South African EEZ, SBT is mainly caught in Statistical Area 9 and the majority of these vessels operate during the winter months (May – September).

The South African Large Pelagic Longline fishery was commercialized in 2005, with the issuing of 18 swordfish-directed and 26 tuna-directed fishing rights valid for 10 years. The fishery was restricted to 50 permits (one permit per vessel) through Total Applied Effort (TAE) control. The large pelagic longline fishery was initially split into swordfish and tuna-directed sub-sectors due to the drastic declines in swordfish catch and CPUE experienced during the period of the experimental fishery from 1997 to 2005. South Africa amended its fishery policy in 2008 after only 9 swordfish-directed longline vessels operated in 2006, resulting in the lowest annual catch since 2001. In 2005 the shark longline sector was split into a demersal shark longline component, which predominantly targets soupfin and hound sharks, and a pelagic shark longline component (seven vessels), which predominantly targets shortfin mako and blue sharks. The latter catches tunas and swordfish as bycatch. This fishery was split as a precursor to phase out the targeting of pelagic sharks due to the concern over the local stock status of some species and the poor performance on tuna and swordfish. The pelagic shark fishery operated under exemptions from 2005 until March 2011, when South Africa incorporated the pelagic shark fishery into the tuna/swordfish longline fishery. Six of the seven shark exemption holders were issued with tuna/swordfish rights in March 2011. These vessels are undergoing a phase-out period to reduce shark targeting and focus on tuna and/or swordfish catches. Pelagic sharks are currently managed as bycatch in the tuna and swordfish longline fishery.

In 2014 the decision was taken to no longer refer to the fleet as two different fishing

strategies, tuna-directed and swordfish-directed, since the fishing behaviour of the local fleet has been shifting from exclusive swordfish targeting to include tunas and sharks. The fishery is now referred to as the Large Pelagic Longline fishery and includes vessels that target tunas, swordfish and sharks as by-catch. The 10-year long-term rights granted in 2005 expired in February 2015. The new Large Pelagic Longline fishing rights were provisionally allocated in February 2017 for a period of 15 years. A total of 59 commercial fishing rights were granted (37 to new applicants), and a total of 34 vessels were authorized to fish in this fishery, however, these figures will can only be regarded as preliminary as the appeals process for the allocation has not been concluded. Previously, the fishery had been allowing an interim period for foreign vessels to charter in this sub-sector as a means of skills development and a means of acquiring suitable vessels. Foreign vessels, mainly from Japan and Chinese-Taipei, fished in South African waters through the issuing of bi-lateral agreements in the 1970s, and re-negotiated these agreements in the 1990s until 2002 (Sauer et al., 2003). Joint-venture agreements with Japan have been underway since 1995, whereby these foreign-flagged vessels are permitted to fish under a South African Rights Holder. The vessel is required to adhere to South African legislation, including but not limited to, the Marine Living Resources Act (Act No. 18 of 1998) and Regulations promulgated thereunder, including Large Pelagic Longline sector specific policy. Importantly, each foreign vessel is required to carry an observer onboard every trip. The catch from these vessels accrues to South Africa. According to the new (2017) regulations, foreign vessel owners in the tuna-directed sub-sector will be required to reflag their vessels and to transfer skills to South Africans.

### ***Pole and Line fishery, commercial linefishery***

Fishing for tunas using rod and reel and/or pole and line dates back to the 1970s in South Africa when they were caught in minimal quantities as bycatch in other fisheries, making this the oldest commercial fishery for tuna in South Africa. Interest sparked in 1979 when yellowfin tuna (*Thunnus albacares*) became available close inshore off Cape Point (Shannon, 1968). Operators from other sectors converted their vessels to ice vessels to fish for yellowfin using pole and line or purse-seine nets, resulting in catches of over 4 500 t (Penney and Punt, 1993). By 1980 the yellowfin tuna was no longer available close inshore, resulting in these vessels targeting albacore (*Thunnus alalunga*) instead on the Southwest and West coasts of South Africa. Albacore catches peaked at 6000 t in 1989, although these catches were under-reported and were probably closer to 10 000 t (Penney and Punt, 1993). The sector has continued to exploit juveniles and sub-adult albacore of between 2 and 3 years old (average of 86 cm FL) and larger yellowfin tuna (average of 133 cm FL). In addition to the tuniform target species, vessels will augment catches opportunistically with snoek (*Thyrsites atun*) and yellowtail (*Seriola lalandi*).

The sector operates along the south west and west coasts of South Africa in the Atlantic Ocean where albacore is available close inshore from October to May, but vessels make forays into the Indian Ocean depending on target species distribution. Traditionally the South African fleet has been characterized into three different categories (1) Skiboats, (2) Pole and Line and (3) Freezer vessels (Leslie et al. 2004). Skiboats are less than 25 GRT and are mostly confined to day trips within a range of 50 nm. Pole and Line boats, which represent the bulk of the fleet, are mainly older displacement-type vessels

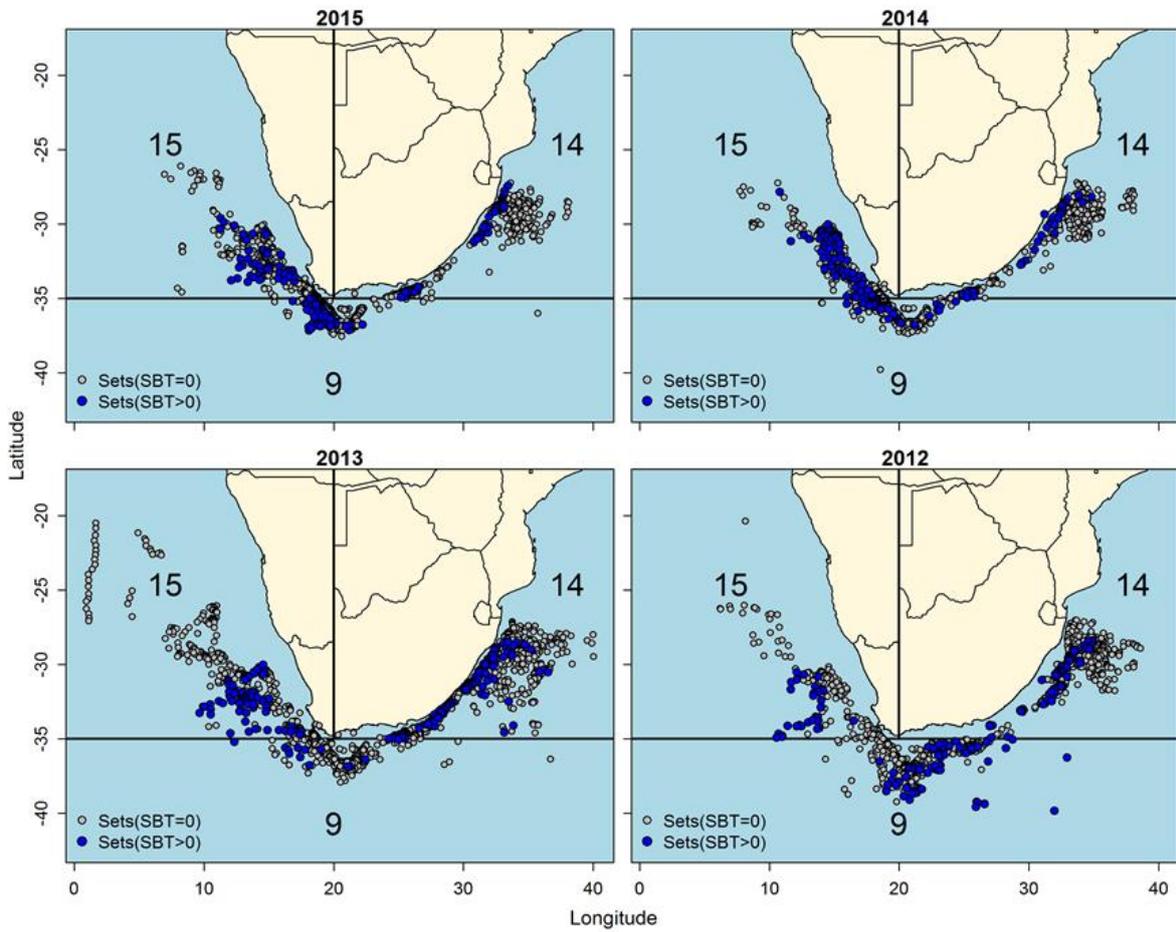
converted from other fisheries. These vessels can undertake multiday trips of limited duration and range, as the catch is kept on ice. Freezer vessels are mainly vessels up to 30 m and 230 GRT. Due to their large size and freezing facilities, these vessels can stay out at sea for long periods and reach the farthest fishing grounds (West et al., 2013). In more recent years, improvements in navigational gear, the use of live bait and sonar equipment has improved the performance of these vessels (West et al., 2013).

This sector is effort controlled, limiting the number of vessels and crew. Prior to 2006, the pole and line fishery was managed under the bracket of commercial linefishing. During the long-term rights allocation process in 2006, the commercial linefishery was divided into three separate sectors consisting of the traditional linefishery (452 vessels and 3 450 crew), the hake-handline sector (130 vessels and 785 crew) and the pole and line fishery (200 vessels and 3 600 crew) (Mann, 2013). Of the 200 vessels and 3 600 crew allocation available for 8 years, only 198 vessels and 2961 crew were allocated in 2006 (TAC/TAE, 2015). The reallocation of long-term rights in 2013 saw 130 rights (136 vessels) granted and 15% of the available effort reserved for possible allocation for appeals. Subsequent to the finalisation of the 2015 Appeals process, 34 new rights (41 vessels, 25 repeat and 15 unique) were added, resulting in a total vessel number of 151 (164 rights) which still remains. Since vessels are small and the nature of the operation requires the vessel to maximise on crew (who work in pairs to catch and haul albacore), scientific observers cannot be accommodated on the vessel and instead monitor catches in port during offloading. For the first time in 2016 the South African tuna pole-line sector starting targeting SBT. The sector has potential to expand its SBT catches, and has been allocated a TAC in 2017.

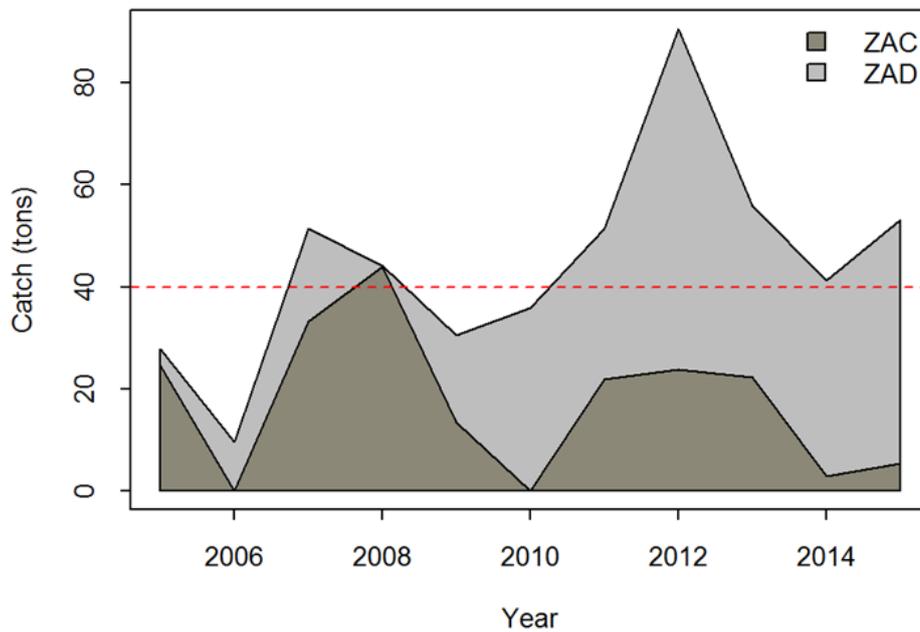
## **2. Review of SBT Fisheries**

South Africa has had a brief history in targeting SBT in the early 1960s along the west coast of South Africa where SBT was one of the most common species caught on longline. This fishery ceased by mid-1960s in favour of developing other more lucrative fisheries. Interest in longline fishing only resurfaced in the mid-1990s when joint operations with a Japanese vessel showed that tuna could be profitably exploited within South Africa's EEZ. Subsequently, 30 experimental longline permits were issued in 1997. The experimental fishery was finally closed in 2005 when 50 long-term fishing rights were made available for allocation. The 50 rights were further split between 20 swordfish-directed rights and 30 tuna-directed rights. In the allocation only 44 rights (18 swordfish vessel and 26 tuna vessels) were allocated to South African companies. Activation of the entire fleet remains a challenge due to low catch rates, increasing fuel costs and lack of suitable vessels and skilled crew.

In 2015, 22 vessels actively fished and only 14 caught SBT (Table 3). The majority of the vessels set to sea out of Cape Town and fish the area between Saldanha Bay on the west coast and Port Elizabeth on the south east coast of South Africa. Relatively few vessels operate out of Richards Bay at the east coast of South Africa. Over the period 2005 – 2015, there has been no specialized fishery for SBT in South Africa due to a small quota allocation of 40 tons per annum. As a result SBT has been caught while targeting swordfish, yellowfin tuna and bigeye tuna. Despite SBT not being directly targeted, South Africa has regularly caught its full quota since 2007 and in many years the fishery was forced to close before the end of the fishing season.



**Figure 1:** Distribution of effort and catch of southern bluefin tuna in the South African Large Pelagic Longline fishery for the period 2012 - 2015. Numbers indicate the designated statistical areas.



**Figure 2:** Southern bluefin tuna catch trends, in tons, for the South African Large Pelagic Longline fishery from 2005 to 2015. The catch trends are split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

**Table 1:** Catch, in weight and number of fish, of southern bluefin tuna in the South African Pelagic Longline fishery according to the designated statistical areas 9, 14 and 15 for the period 2012-2015. The catch is split by fleet, indicating the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| Year | Area | Domestic (ZAD) |         | Chartered (ZAC) |         |
|------|------|----------------|---------|-----------------|---------|
|      |      | Weight (kg)    | Numbers | Weight (kg)     | Numbers |
| 2015 | 9    | 27612.2        | 328     | 165.6           | 3       |
| 2014 | 9    | 13853.8        | 196     | 0               | 0       |
| 2013 | 9    | 4376.5         | 80      | 560.05          | 7       |
| 2012 | 9    | 18923.6        | 219     | 16129.9         | 342     |
| 2015 | 14   | 6229.6         | 75      | 5216.4          | 63      |
| 2014 | 14   | 5621.2         | 71      | 2907.2          | 35      |
| 2013 | 14   | 11812.8        | 144     | 21697.05        | 243     |
| 2012 | 14   | 38489.9        | 380     | 7737.2          | 76      |
| 2015 | 15   | 13864.3        | 210     | 0               | 0       |
| 2014 | 15   | 18828.7        | 321     | 0               | 0       |
| 2013 | 15   | 17474.2        | 226     | 0               | 0       |
| 2012 | 15   | 9288.4         | 266     | 0               | 0       |

**Table 2:** Effort, described per 1000 hooks, of the South African Pelagic Longline fishery according to the designated statistical areas 9, 14 and 15 for the period 2012-2015. The effort is reported as all hooks set (Total Effort), hooks set when a southern bluefin tuna was encountered in the set (SBT>0) and the number of hooks that encountered a southern bluefin tuna as a percentage of total effort (% SBT). The effort is split by fleet, indicating the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| Year | Area | Domestic (ZAD)   |              |       | Chartered (ZAC)  |         |       |
|------|------|------------------|--------------|-------|------------------|---------|-------|
|      |      | Effort (SBT > 0) | Total Effort | % SBT | Effort (SBT > 0) | Numbers | % SBT |
| 2015 | 9    | 99.6             | 869          | 11.5  | 6.6              | 244.9   | 2.7   |
| 2014 | 9    | 73.6             | 679          | 10.8  | 0                | 283.2   | 0.0   |
| 2013 | 9    | 11.5             | 399          | 2.9   | 14.7             | 798.4   | 1.8   |
| 2012 | 9    | 39.2             | 552          | 7.1   | 90.0             | 1515.8  | 5.9   |
| 2015 | 14   | 41.8             | 417          | 10.0  | 103.0            | 732.7   | 14.1  |
| 2014 | 14   | 33.7             | 412          | 8.2   | 85.3             | 981.5   | 8.7   |
| 2013 | 14   | 46.7             | 741          | 6.3   | 286.4            | 2114.9  | 13.5  |
| 2012 | 14   | 98.1             | 692          | 14.2  | 67.9             | 1140.1  | 6.0   |
| 2015 | 15   | 82.4             | 583          | 14.1  | 0                | 0       |       |
| 2014 | 15   | 122.2            | 675          | 18.1  | 0                | 0       |       |
| 2013 | 15   | 100.0            | 605          | 16.5  | 0                | 120.1   | 0.0   |
| 2012 | 15   | 34.8             | 246          | 14.1  | 0                | 14.8    | 0.0   |

**Table 3:** A description of the South African Pelagic Longline fishery fleet. The fleet is reported according to the number of active vessels operating, number of vessels that caught southern bluefin tuna, number of fish caught and the cumulative weight in each designated statistical areas 9, 14 and 15 for the period 2005-2015. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| Year | Active Vessels |     | Vessels caught SBT |           | SBT Numbers |     | SBT (kg) |         |
|------|----------------|-----|--------------------|-----------|-------------|-----|----------|---------|
|      | ZAD            | ZAC | ZAD                | ZAC       | ZAD         | ZAC | ZAD      | ZAC     |
| 2015 | 18             | 4   | 10 (55.6%)         | 4 (100%)  | 613         | 66  | 47706.0  | 5382.0  |
| 2014 | 17             | 4   | 11 (64.7%)         | 4 (100%)  | 588         | 35  | 38303.7  | 2907.2  |
| 2013 | 16             | 9   | 10 (64.7%)         | 9 (100%)  | 450         | 250 | 33663.4  | 22257.1 |
| 2012 | 16             | 11  | 11 (68.8%)         | 9 (81.8%) | 865         | 418 | 66701.8  | 23867.1 |
| 2011 | 16             | 14  | 15 (93.3)          | 14 (100%) | 362         | 349 | 29525.6  | 21897.2 |
| 2010 | 14             | 9   | 14 (100%)          | 9 (100%)  | 568         | 3   | 35858.9  | 100.1   |
| 2009 | 15             | 9   | 14 (93.3%)         | 9 (100%)  | 204         | 188 | 17003.8  | 13559.7 |
| 2008 | 11             | 12  | 11 (100%)          | 12 (100%) | 3           | 787 | 282.9    | 43902.4 |
| 2007 | 17             | 11  | 17 (100%)          | 11 (100%) | 227         | 653 | 18368.5  | 33154.5 |
| 2006 | 15             |     | 15 (100%)          |           | 141         |     | 9709.5   |         |
| 2005 | 9              | 11  | 9 (100%)           | 11 (100%) | 36          | 303 | 3177.7   | 24664.1 |

### 3. Fisheries Monitoring for Each Fleet

#### *Observer programme*

The South African Pelagic Longline Observer Programme was established in 1998, at the start of the experimental phase of the pelagic longline fishery, and a minimum 20% observer coverage was stipulated. The Offshore Resources Observer Programme (OROP) began in March 2002 and to date it still requires 100% observer coverage on foreign-flagged vessels. Up until March 2011, 11- 20% observer coverage was achieved on local vessels per year based on the total effort (number of hooks) deployed. The observer programme contract expired in March 2011, and the Department is in the process of re-establishing the programme, for implementation in the near future. The observer programme for joint-venture (Japanese-flagged) vessels has continued with 100% of fishing trips observed. Furthermore, increased inspections and sampling of pole-line vessels is conducted during offloading in port by South Africa Fisheries Compliance Officers and Fisheries Monitors.

The observers collect all operational, catch (retained and discard), effort and length frequency data, and as well as biological material when required. The observers record data on the following forms:

- Form 1: Vessel and trip information sheet
- Form 2D: Pelagic longline gear and operation information
- Form 3D: Fishing effort pelagic long-line
- Form 4: Marine mammal, sea turtle, and seabird incidental take form
- Form 6: Depredation
- Form 7: Fish biological sampling

### ***Logsheets data collection and verification***

Vessels in the Large Pelagic Longline fishery and Tuna Pole-line fishery have been required to complete daily logs of catches since 1997 and 1985, respectively. The data are verified by comparing logs of catches with landing declarations that are overseen by South African Fisheries Compliance Officers and Fisheries Monitors. Rights Holders are required to submit these logsheets on a monthly basis. Records of by-catch are required in the skipper logbooks.

### ***Vessel Monitoring System***

The Vessel Monitoring System (VMS) was implemented in 1998 for Large Pelagic Longline vessels and was subsequently followed by the Tuna Pole-line vessels. All longline and pole-line vessels are required to have a functional VMS system on board that transmits directly to the Department's VMS OPS Room. It is the Permit Holder's responsibility to ensure that the VMS transmits data continuously and uninterrupted prior to and throughout the duration of the trip.

### ***Unloading/Transshipment***

Unloading or discharging of fish from a longline vessel can only be undertaken in the presence of a monitor or a South African Fisheries Control Officer. Transshipment of fish is not permitted at sea. Transshipments of fish in port requires pre-authorisation. South Africa is striving towards 100% monitoring of tuna pole-line discharges in port. These measures have been in place since 1998.

**Table 4:** Total fishing and observed effort for South Africa in 2012-2015 in the pelagic longline fishery, only summarizing sets that had caught SBT

| Country/Fishing Entity | Calendar Year | Fishery   |            | CCSBT Statistical Area | Total effort | Total observed effort | Observer coverage (%) | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|------------------------|---------------|-----------|------------|------------------------|--------------|-----------------------|-----------------------|---|---------|---------|--------------|-----|
|                        |               | Gear code | Fleet code |                        |              |                       |                       | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| ZA                     | 2015          | LL        | ZAD        | 15                     | 82434        | 0                     | 0.00                  | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2015          | LL        | ZAD        | 14                     | 41750        | 0                     | 0.00                  | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2015          | LL        | ZAD        | 9                      | 99553        | 0                     | 0.00                  | 0   | 0       | 0       | 1            | 0   |
| JP                     | 2015          | LL        | ZAC        | 14                     | 97704        | 94844                 | 97.07                 | 0   | 0       | 0       | 1            | 0   |
| JP                     | 2015          | LL        | ZAC        | 9                      | 6622         | 6622                  | 100.00                | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2014          | LL        | ZAD        | 15                     | 122234       | 3700                  | 3.03                  | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2014          | LL        | ZAD        | 14                     | 33660        | 0                     | 0.00                  |   |         |         |              |     |
| ZA                     | 2014          | LL        | ZAD        | 9                      | 73620        | 11900                 | 16.16                 | 0   | 0       | 0       | 1            | 0   |
| JP                     | 2014          | LL        | ZAC        | 14                     | 85332        | 79836                 | 93.56                 | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2013          | LL        | ZAD        | 15                     | 99999        | 0                     | 0.00                  | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2013          | LL        | ZAD        | 14                     | 46660        | 0                     | 0.00                  |   |         |         |              |     |
| ZA                     | 2013          | LL        | ZAD        | 9                      | 11457        | 0                     | 0.00                  |   |         |         |              |     |
| JP                     | 2013          | LL        | ZAC        | 14                     | 286436       | 242037                | 84.50                 | 0   | 0       | 0       | 1            | 0   |
| JP                     | 2013          | LL        | ZAC        | 9                      | 14710        | 14710                 | 100.00                | 0   | 0       | 0       | 1            | 0   |
| ZA                     | 2012          | LL        | ZAD        | 15                     | 39750        | 0                     | 0.00                  |   |         |         |              |     |
| ZA                     | 2012          | LL        | ZAD        | 14                     | 98100        | 0                     | 0.00                  |   |         |         |              |     |
| ZA                     | 2012          | LL        | ZAD        | 9                      | 46100        | 0                     | 0.00                  |   |         |         |              |     |
| JP                     | 2012          | LL        | ZAC        | 14                     | 67934        | 29323                 | 43.16                 | 0   | 0       | 0       | 1            | 0   |
| JP                     | 2012          | LL        | ZAC        | 9                      | 89997        | 78782                 | 87.54                 | 0   | 0       | 0       | 1            | 0   |

#### **4. Seabirds**

Capture incidents of seabirds during SBT targeting as reported from the South African Observer programme in 2014 and 2015 were restricted to 8 individuals, all of which were Atlantic yellow-nosed albatross, *Thalassarche chlororhynchos*. In 2014, six Atlantic yellow-nosed albatross were caught in Statistical Area 9 and in 2015 two Atlantic yellow-nosed albatross were caught in Statistical Area 14 (Tables 5&6). There were no observed mortalities, and all of these birds were released alive. All seabird by-catch reported for CCSBT is derived from lines that encountered a SBT in South African waters, as a subset of all lines set. Non-observer data (skipper logbooks) for 2015 is presented in Table 7.

**Table 5:** Observed interactions between seabird species and the South African Pelagic Longline fishery in 2014. Capture and mortality rates are given as per thousand hooks. Note: data are only from sets where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2014)            |            |         |              | Observed              |                   |          |              |             |                |               | Estimate                              | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|--------------------------------|------------|---------|--------------|-----------------------|-------------------|----------|--------------|-------------|----------------|---------------|---------------------------------------|---|---------|---------|--------------|-----|
| Species                        | Fleet code | Stratum | Total Effort | Total observed effort | Observer Coverage | Captures | Capture rate | Mortalities | Mortality rate | Live releases | Estimated total number of mortalities | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| NIL                            | ZAC        | 15      | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| Atlant. yellow-nosed albatross | ZAC        | 14      | 85332        | 79836                 | 93.56             | 6        | 0.075        | 0           | 0              | 6             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAC        | 9       | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                            | ZAD        | 15      | 122234       | 3700                  | 3.0               |          |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAD        | 14      | 33660        | 0                     | 0.0               |          |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAD        | 9       | 73620        | 11900                 | 16.2              |          |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |

**Table 6:** Observed interactions between seabird species and the South African Pelagic Longline fishery in 2015. Capture and mortality rates are given as per thousand hooks. Note: data are only from sets where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2015)            |            |         |              | Observed              |                   |          |              |             |                |               | Estimate                              | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|--------------------------------|------------|---------|--------------|-----------------------|-------------------|----------|--------------|-------------|----------------|---------------|---------------------------------------|---|---------|---------|--------------|-----|
| Species                        | Fleet code | Stratum | Total Effort | Total observed effort | Observer Coverage | Captures | Capture rate | Mortalities | Mortality rate | Live releases | Estimated total number of mortalities | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| NIL                            | ZAC        | 15      | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| Atlant. yellow-nosed albatross | ZAC        | 14      | 97704        | 94844                 | 97.1              | 2        | 0.021        | 0           | 0              | 2             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAC        | 9       | 6622         | 6622                  | 100.0             | 2        | 0.302        | 0           | 0              | 2             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAD        | 15      | 82434        | 0                     | 0.0               |          |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAD        | 14      | 41750        | 0                     | 0.0               |          |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                            | ZAD        | 9       | 99553        | 0                     | 0.0               |          |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |

**Table 7:** Skipper logbook (non-observer data) interactions between seabird species and the South African Pelagic Longline fishery in 2015. Capture and mortality rates are given as per thousand hooks. Note: data are only from trips (as opposed to sets, as in observer data) where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2015) Logbooks |            |              |          |              |             |                |               |
|------------------------------|------------|--------------|----------|--------------|-------------|----------------|---------------|
| Species                      | Fleet code | Total Effort | Captures | Capture rate | Mortalities | Mortality rate | Live releases |
| Shy albatross                | ZAC        | 418956       | 2        | 0.005        | 2           | 0.005          | 0             |
| White-chinned petrel         | ZAC        | 418956       | 25       | 0.060        | 25          | 0.060          | 0             |
| Albatrosses nei              | ZAD        | 187912       | 4        | 0.021        | 4           | 0.021          | 0             |

## 5. Other Non-target Fish

**Table 8:** Observed interactions between non-target shark and fish species and the South African Pelagic Longline fishery in 2014. Capture and mortality rates are given as per thousand hooks. Note: data are only from sets where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2014) |            |         |              | Observed              |                   |          |              |             |                |               | Estimate                              | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|---------------------|------------|---------|--------------|-----------------------|-------------------|----------|--------------|-------------|----------------|---------------|---------------------------------------|---|---------|---------|--------------|-----|
| Species             | Fleet code | Stratum | Total Effort | Total observed effort | Observer Coverage | Captures | Capture rate | Mortalities | Mortality rate | Live releases | Estimated total number of mortalities | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| NIL                 | ZAC        | 15      | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| Thresher            | ZAC        | 14      | 85332        | 79836                 | 93.6              | 1        | 0.013        | 0           | 0              | 1             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Blue shark          | ZAC        | 14      | 85332        | 79836                 | 93.6              | 131      | 1.641        | 84          | 1.052          | 47            | 90                                    | 0   | 0       | 0       | 1            | 0   |
| Bigeye thresher     | ZAC        | 14      | 85332        | 79836                 | 93.6              | 1        | 0.013        | 0           | 0              | 1             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Silky shark         | ZAC        | 14      | 85332        | 79836                 | 93.6              | 3        | 0.038        | 3           | 0.038          | 0             | 3                                     | 0   | 0       | 0       | 1            | 0   |
| Pelagic stingray    | ZAC        | 14      | 85332        | 79836                 | 93.6              | 27       | 0.338        | 0           | 0              | 27            | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Crocodile shark     | ZAC        | 14      | 85332        | 79836                 | 93.6              | 18       | 0.225        | 0           | 0              | 18            | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Shortfin mako       | ZAC        | 14      | 85332        | 79836                 | 93.6              | 129      | 1.616        | 93          | 1.165          | 36            | 99                                    | 0   | 0       | 0       | 1            | 0   |
| Lancetfish          | ZAC        | 14      | 85332        | 79836                 | 93.6              | 40       | 0.501        | 36          | 0.451          | 4             | 2246                                  | 0   | 0       | 0       | 1            | 0   |
| Dolphinfish         | ZAC        | 14      | 85332        | 79836                 | 93.6              | 18       | 0.225        | 15          | 0.188          | 3             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                 | ZAC        | 9       | 0            | 0                     |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| Blue shark          | ZAD        | 15      | 122234       | 3700                  | 3.0               | 335      | 90.541       | 68          | 18.378         | 267           | 2246.463                              | 0   | 0       | 0       | 1            | 0   |
| Pelagic stingray    | ZAD        | 15      | 122234       | 3700                  | 3.0               | 9        | 2.432        | 0           | 0              | 9             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Shortfin mako       | ZAD        | 15      | 122234       | 3700                  | 3.0               | 462      | 124.865      | 462         | 124.865        | 0             | 15262.732                             | 0   | 0       | 0       | 1            | 0   |
| Thresher sharks nei | ZAD        | 15      | 122234       | 3700                  | 3.0               | 15       | 4.054        | 0           | 0              | 15            | 0                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                 | ZAD        | 14      | 33660        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |
| Blue shark          | ZAD        | 9       | 73620        | 11900                 | 16.2              | 646      | 54.286       | 206         | 17.311         | 440           | 1274.43                               | 0   | 0       | 0       | 1            | 0   |
| Pelagic stingray    | ZAD        | 9       | 73620        | 11900                 | 16.2              | 3        | 0.252        | 0           | 0              | 3             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Shortfin mako       | ZAD        | 9       | 73620        | 11900                 | 16.2              | 321      | 26.975       | 321         | 26.975         | 0             | 1985.884                              | 0   | 0       | 0       | 1            | 0   |
| Thresher sharks nei | ZAD        | 9       | 73620        | 11900                 | 16.2              | 9        | 0.756        | 0           | 0              | 9             | 0                                     | 0   | 0       | 0       | 1            | 0   |

**Table 9:** Observed interactions between non-target shark and fish species and the South African Pelagic Longline fishery in 2015. Capture and mortality rates are given as per thousand hooks. Note: data are only from sets where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line(2015) |            |         |              | Observed              |                   |          |              |             |                |               | Estimate                              | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|--------------------|------------|---------|--------------|-----------------------|-------------------|----------|--------------|-------------|----------------|---------------|---------------------------------------|---|---------|---------|--------------|-----|
| Species            | Fleet code | Stratum | Total Effort | Total observed effort | Observer Coverage | Captures | Capture rate | Mortalities | Mortality rate | Live releases | Estimated total number of mortalities | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| NIL                | ZAC        | 15      | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| Blue shark         | ZAC        | 14      | 97704        | 94844                 | 97.1              | 155      | 1.634        | 76          | 0.801          | 79            | 78                                    | 0   | 0       | 0       | 1            | 0   |
| Pelagic stingray   | ZAC        | 14      | 97704        | 94844                 | 97.1              | 90       | 0.949        | 18          | 0.19           | 72            | 19                                    | 0   | 0       | 0       | 1            | 0   |
| Shortfin mako      | ZAC        | 14      | 97704        | 94844                 | 97.1              | 132      | 1.392        | 78          | 0.822          | 54            | 80                                    | 0   | 0       | 0       | 1            | 0   |
| Dolphinfish        | ZAC        | 14      | 97704        | 94844                 | 97.1              | 33       | 0.348        | 33          | 0.348          | 0.0           | 34                                    | 0   | 0       | 0       | 1            | 0   |
| Thresher           | ZAC        | 9       | 6622         | 6622                  | 100.0             | 1        | 0.151        | 0           | 0              | 1             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| Blue shark         | ZAC        | 9       | 6622         | 6622                  | 100.0             | 93       | 14.044       | 38          | 5.738          | 55            | 38                                    | 0   | 0       | 0       | 1            | 0   |
| Pelagic stingray   | ZAC        | 9       | 6622         | 6622                  | 100.0             | 6        | 0.906        | 6           | 0.906          | 0             | 6                                     | 0   | 0       | 0       | 1            | 0   |
| Shortfin mako      | ZAC        | 9       | 6622         | 6622                  | 100.0             | 9        | 1.359        | 9           | 1.359          | 0             | 9                                     | 0   | 0       | 0       | 1            | 0   |
| Dolphinfish        | ZAC        | 9       | 6622         | 6622                  | 100.0             | 6        | 0.906        | 6           | 0.906          | 0             | 6                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                | ZAD        | 15      | 82434        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                | ZAD        | 14      | 41750        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                | ZAD        | 12      | 99553        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |

**Table 10:** Skipper logbook (non-observer data) interactions between non-target shark and fish species and the South African Pelagic Longline fishery in 2015. Capture and mortality rates are given as per thousand hooks. Note: data are only from trips (as opposed to sets, as in observer data) where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2015) Logbooks |            |              |          |              |             |                |               |
|------------------------------|------------|--------------|----------|--------------|-------------|----------------|---------------|
| Species                      | Fleet code | Total Effort | Captures | Capture rate | Mortalities | Mortality rate | Live releases |
| Bigeye thresher              | ZAC        | 418956       | 20       | 0.048        | 2           | 0.005          | 18            |
| Bull shark                   | ZAC        | 418956       | 3        | 0.007        | 1           | 0.002          | 2             |
| Silky shark                  | ZAC        | 418956       | 1        | 0.002        | 0           | 0.000          | 1             |
| White-chinned petrel         | ZAC        | 418956       | 25       | 0.060        | 25          | 0.060          | 0.0           |
| Scalloped hammerhead         | ZAC        | 418956       | 2        | 0.005        | 0           | 0.000          | 2             |
| Hammerhead sharks nei        | ZAC        | 418956       | 12       | 0.029        | 2           | 0.005          | 10            |
| Thresher sharks nei          | ZAC        | 418956       | 49       | 0.117        | 6           | 0.014          | 43            |
| Silky shark                  | ZAD        | 187912       | 83       | 0.442        | 48          | 0.255          | 35            |
| Oceanic whitetip shark       | ZAD        | 187912       | 4        | 0.021        | 1           | 0.005          | 3             |
| Hammerhead sharks nei        | ZAD        | 187912       | 4        | 0.021        | 0           | 0.000          | 4             |
| Smooth hammerhead            | ZAD        | 187912       | 2        | 0.011        | 2           | 0.011          | 0             |
| Thresher sharks nei          | ZAD        | 187912       | 18       | 0.096        | 5           | 0.027          | 13            |

**Table 11:** Observed interactions between marine mammal and marine reptile species and the South African Pelagic Longline fishery in 2014. Capture and mortality rates are given as per thousand hooks. Note: data are only from sets where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2014) |            |         |              | Observed              |                   |          |              |             |                |               | Estimate                              | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|---------------------|------------|---------|--------------|-----------------------|-------------------|----------|--------------|-------------|----------------|---------------|---------------------------------------|---|---------|---------|--------------|-----|
| Species             | Fleet code | Stratum | Total Effort | Total observed effort | Observer Coverage | Captures | Capture rate | Mortalities | Mortality rate | Live releases | Estimated total number of mortalities | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| NIL                 | ZAC        | 15      | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| Loggerhead turtle   | ZAC        | 14      | 85332        | 79836                 | 93.56             | 2        | 0.025        | 0           | 0              | 2             | 0                                     | 0   | 0       | 0       | 1            | 0   |
| NIL                 | ZAC        | 9       | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                 | ZAD        | 15      | 122234       | 3700                  | 3.0               | 0        |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                 | ZAD        | 14      | 33660        | 0                     | 0.0               | 0        |              |             |                |               |                                       |   |         |         |              |     |
| NIL                 | ZAD        | 9       | 73620        | 11900                 | 16.2              | 0        |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |

**Table 12:** Observed interactions between marine mammal and marine reptile species and the South African Pelagic Longline fishery in 2015. Capture and mortality rates are given as per thousand hooks. Note: data are only from sets where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2015) |            |         |              | Observed              |                   |          |              |             |                |               | Estimate                              | Proportion of observed effort with specific mitigation measures |         |         |              |     |
|---------------------|------------|---------|--------------|-----------------------|-------------------|----------|--------------|-------------|----------------|---------------|---------------------------------------|---|---------|---------|--------------|-----|
| Species             | Fleet code | Stratum | Total Effort | Total observed effort | Observer Coverage | Captures | Capture rate | Mortalities | Mortality rate | Live releases | Estimated total number of mortalities | TP + NS   | TP + WB | NS + WB | TP + WB + NS | NIL |
| NIL                 | ZAC        | 15      | 0            |                       |                   |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                 | ZAC        | 14      | 97704        | 94844                 | 97.1              | 0        |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                 | ZAC        | 9       | 6622         | 6622                  | 100.0             | 0        |              |             |                |               |                                       | 0   | 0       | 0       | 1            | 0   |
| NIL                 | ZAD        | 15      | 82434        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                 | ZAD        | 14      | 41750        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |
| NIL                 | ZAD        | 9       | 99553        | 0                     | 0.0               |          |              |             |                |               |                                       |   |         |         |              |     |

**Table 13:** Skipper logbook (non-observer data) interactions between marine mammal and marine reptile species and the South African Pelagic Longline fishery in 2015. Capture and mortality rates are given as per thousand hooks. Note: data are only from trips (as opposed to sets, as in observer data) where SBT were caught. The fleet is split according to the domestic fleet (ZAD) and the foreign-flagged vessels under bi-lateral agreements (ZAC).

| SA Long-Line (2015) Logbooks |            |              |          |              |             |                |               |
|------------------------------|------------|--------------|----------|--------------|-------------|----------------|---------------|
| Species                      | Fleet code | Total Effort | Captures | Capture rate | Mortalities | Mortality rate | Live releases |
| NIL                          | ZAC        | 418956       |          |              |             |                |               |
| Leatherback turtle           | ZAD        | 187912       | 4        | 0.021        | 0           | 0.000          | 4             |
| Loggerhead turtle            | ZAD        | 187912       | 13       | 0.069        | 0           | 0.000          | 13            |
| Marine turtles nei           | ZAD        | 187912       | 3        | 0.016        | 0           | 0.000          | 3             |

## **6. Marine Mammals and Marine Reptiles**

The South African Observer Programme recorded two loggerhead turtle (*Caretta caretta*) captures in 2014 from the Statistical Area 14 (Tables 11&12). Both turtles were released alive. There are no observer records of marine mammal captures. All turtle by-catch reported for CCSBT is derived from lines that encountered a SBT tuna in South African waters, as a subset of all lines set. Non-observer data (skipper logbooks) for 2015 is presented in Table 13.

## **7. Mitigation Measures to Minimise Seabird and Other Species Bycatch**

### ***Current Measures***

The World Wildlife Fund South Africa (WWF-SA) Responsible Fisheries Programme, now the WWF Sustainable Fisheries, has worked since 2007 to facilitate the implementation of an Ecosystem Approach to Fisheries management (EAF) in Southern Africa. An Ecological Risk Assessment (ERA) was conducted in 2007 to identify the issues (e.g. ecological wellbeing, human wellbeing and ability to achieve) in the pelagic longline, shark longline and Tuna Pole-Line fisheries (Petersen, 2007). The Performance Report identified the gaps amongst research, management, compliance and industry and has been used – and has continued relevance – as a tool to guide work plans and the implementation of EAF considerations in permit conditions. Furthermore, all mitigation measures have been included in permit conditions which fishers have to adhere to. Contravening any of the applicable regulations can lead to prosecution and loss of permit.

### ***Sharks***

The permit conditions are amended regularly to include shark mitigation measures. A precautionary upper catch limit (PUCL) of 2000 t dressed weight of Chondrichthyans was enforced in 2012. Foreign-flagged fleets may not land Chondrichthyans that exceed 10% of the total dressed weight of tuna species per season. South African-flagged vessels are limited by a PUCL. When the PUCL has been reached the entire fishery will close.

Thresher sharks belonging to the genus *Alopias*, hammerhead sharks (belonging to genus *Sphyrna*), oceanic whitetip sharks (*Carcharhinus longimanus*) and silky sharks (*Carcharhinus falciformis*) shall not be retained on board any vessel. Rights holders are encouraged to release live requiem sharks by cutting the line as close to the jaw as possible once the shark is alongside and all releases should be noted on the logbooks. Significant progress regarding stricter permits conditions to decrease shark by-catch was made in 2017. Specifically, the use of wire traces is now prohibited in the Large Pelagic Longline fishery, and shark fins must remain naturally attached to the body of a landed shark.

### ***Seabirds***

South Africa has introduced a number of bird mitigation measures through permit conditions since the start of its fishery, including the compulsory flying of tori-lines, no daylight setting, and the use of thawed bait to improve sink rates, in the tuna fishery (Table 14). South Africa does not consider the use of line shooters or offal discard management to be useful in reducing seabird incidental mortality. Furthermore, South Africa (with the Albatross Task Force of

BirdLife South Africa) developed a management plan in 2008 to reduce seabird by-catch in its longline fishery. This plan includes two seabird bycatch limits per vessel per year. The first limit stipulates that once a vessel reaches 25 birds killed in a year, it must adopt additional mitigation measures; it has to fly a second tori line and it has to place additional weights on to each branchline. If the vessel reaches the second limit of 50 seabird mortalities, the Department will review compliance with mitigation measures before deciding whether to permit further fishing by that vessel.

Since the implementation of seabird mitigation measures and the stringent monitoring thereof, seabird mortality has been reduced by more than an order of magnitude. For South Africa's entire coastline, the seabird mortality rate has declined from a maximum of 1.85 seabirds/1000 hooks-1 in 2011 to 0.38, 0.37 and 0.37 for 2012, 2013 and 2014, respectively, the lowest mortality rates achieved to date. The absence of an observer programme to monitor the local pelagic longline vessels has made it challenging to obtain reliable and accurate data on all seabird encounters in the fleet. That said, the implementation of mitigation measures remains high. All South African vessels, or vessels operating under a bi-lateral agreement with South Africa, are required to employ a combination of bird scaring lines, line weighting and night setting as bird bycatch mitigation measures.

**Table 14:** Summary of amendments to seabird bycatch mitigation measures in South African permit conditions for Foreign-flagged and South African within the South African EEZ (Taken from Rollinson et al. in press).

| Mitigation measure                                | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|------|------|------|------|------|------|------|------|
| <i>Foreign-flagged vessels</i>                    | -    | -    | -    | -    | -    | -    | -    | -    |
| Night setting only                                | NA   | Yes  |
| Bird-scaring line                                 | NA   | Yes  |
| Line weighting (achieving 0.3 m.s <sup>-1</sup> ) | NA   | Yes  | Yes  | Yes  | No   | No   | No   | No   |
| Line weighting (60 g < 2m of hook)                | NA   | No   | No   | No   | Yes  | Yes  | Yes  | Yes  |
| Thawed bait before setting                        | NA   | Yes  |
| Reduced lighting                                  | NA   | Yes  |
| Offal management                                  | NA   | Yes  | Yes  | Yes  | No   | No   | No   | No   |
| 25 bird bycatch limit per year                    | NA   | No   | Yes  | Yes  | Yes  | Yes  | Yes  | Yes  |
| <i>South African vessels</i>                      | -    | -    | -    | -    | -    | -    | -    | -    |
| Night setting only                                | No   |
| Bird-scaring line                                 | Yes  |
| Line weighting (achieving 0.3 m.s <sup>-1</sup> ) | Yes  | Yes  | Yes  | Yes  | No   | No   | No   | No   |
| Line weighting (60 g < 2m of hook)                | No   | No   | No   | No   | Yes  | Yes  | Yes  | Yes  |
| Thawed bait before setting                        | Yes  |
| Reduced lighting                                  | Yes  |
| Offal management                                  | Yes  | Yes  | Yes  | Yes  | No   | No   | No   | No   |
| 25 bird bycatch limit per year                    | No   | No   | Yes  | Yes  | Yes  | Yes  | Yes  | Yes  |

### *Marine Turtles*

The South African government has worked closely with WWF to educate skippers on release procedures for turtles. Skippers are provided with guidelines/instructions in their permit conditions on how to safely handle and release caught turtles. The use of circle hooks is encouraged as stated in the permit conditions, as well as the release of turtles using a de-hooker.

As of 2014, skippers were required to record interactions with turtles, including the fate of the turtle, in the catch statistic logbooks on board the vessel. Although the absence of an observer programme to monitor the local pelagic longline vessels has made it challenging to obtain reliable and accurate data on all turtle encounters in the fleet, there is high awareness among skippers on handling protocols and release mortalities are thought to be low.

### *Other ecologically related species (e.g. marine mammals, whale sharks)*

South Africa encourages vessels to take cognisance of sustainable fishing practices and impacts of tuna longline operations on the ecosystem. A specific concern is the impact of lost “strops” (cords used to hang fish during freezing) during discharge procedures. Marine animals subsequently become entangled in these strops, resulting in mutilation and potential mortality of entangled animals. In order to solve this problem the Permit Holder is to ensure that “strops” used during freezing and discharge do not exceed the stipulated 80 mm stretched length.

### *Measures under Development/Testing*

Further mitigate seabird catches, a number of ‘hook shielding devices’ have been, or are currently being tested in South Africa. Currently the Conservation of Albatrosses and Petrels (ACAP) recognizes two such devices, both of which continue to be tested in South Africa as part of the evidence base for the devices’ effectiveness.

## **8. Public Relations and Education Activities**

### *Information*

The Department of Environmental Affairs published the National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries in 2008.

-NPOA-Seabirds. 2008. South African National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries. Department of Environmental Affairs and Tourism. Published August 2008.

The Department of Agriculture, Forestry and Fisheries published the National Plan of Action for the Conservation and Management of Sharks in 2013.

-NPO-Sharks. 2013. South African National Plan of Action for the Conservation and Management of Sharks. Department of Agriculture, Forestry and Fisheries. Published November 2013.

The Department of Environmental Affairs is currently working on a Biodiversity Management Plan for Sea Turtles in South Africa.

### *Education*

Port-based outreach project in Cape Town under the Common Oceans Tuna Project - A pilot port-based outreach project with pelagic tuna longline vessel captains is being conducted under the FAO Common Oceans Tuna Project, targeting internationally-flagged vessels fishing the high seas when they call at Cape Town harbour. An outreach officer, together with an interpreter speaking the vessel captain’s home language visit vessels while in port and engage the captain on seabird bycatch mitigation measures to exchange information and increase

awareness of the regulations for vessels fishing in Indian and Atlantic Ocean waters below 25°S. Ten outreach sessions have been undertaken to date since October 2016 and are planned to continue until mid-2018.

### ***Information Exchange***

South Africa is a member of three Regional Fisheries Management Organisations (RFMOs): The Indian Ocean Tuna Commission (IOTC), The International Commission for the Conservation of Atlantic Tunas (ICCAT) and The Commission for the Conservation of Southern Bluefin Tuna (CCSBT). As such, South Africa is required to provide information to each of these RFMOs, generally in the form of data submissions and reports. In terms of Ecologically Related Species, South Africa is required to submit an annual report to each RFMO indicating by-catch trends and statistics. In addition, South Africa is required to submit numerous species-specific data submissions that detail catch and effort of our Large Pelagic Longline fishery and send delegates to attend ERSWG meetings.

### **9. Information on other ERS (non-bycatch) such as prey and predator species**

On several occasions killer whales and pilot whales have been observed mauling fish caught on the longline, and these depredations are recorded in the skipper logbooks.

### **10. Others**

Not Applicable.

### **11. Implementation of the IPOA-Seabirds and IPOA-Sharks**

South Africa has been collecting data on seabird interaction with its longline fishery since 1998 and the NPOA for seabirds was published in 2008 (NPOA-Seabirds, 2008). The NPOA-Seabirds specifies a maximum mortality rate of 0.05 birds/1000 hooks, and lays out bycatch mitigation measures for use in longline fishing. The National Plan of Action (NPOA) for sharks was published in 2013 in Cape Town, South Africa. Shark-related issues discussed in the NPOA-Sharks have been categorised into clusters with proposed actions by the responsible unit within a time frame (NPOA-Sharks, 2013). A task-team of relevant stakeholders is required to achieve the tasks set out in the NPOA-Sharks.

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### 13. Appendices.

**Appendix 1:** List of Scientific names and species codes.

| Species code | Scientific name                    | Common name                    |
|--------------|------------------------------------|--------------------------------|
| ALX          | <i>Alepisaurus ferox</i>           | Long snouted lancetfish        |
| BSH          | <i>Prionace glauca</i>             | Blue shark                     |
| BTH          | <i>Alopias superciliosus</i>       | Bigeye thresher                |
| DCR          | <i>Thalassarche chlororhynchos</i> | Atlant. yellow-nosed albatross |
| DOL          | <i>Coryphaena hippurus</i>         | Common dolphinfish             |
| FAL          | <i>Carcharhinus falciformis</i>    | Silky shark                    |
| OCS          | <i>Carcharhinus longimanus</i>     | Oceanic whitetip shark         |
| PLS          | <i>Dasyatis violacea</i>           | Pelagic stingray               |
| PSK          | <i>Pseudocarcharias kamoharai</i>  | Crocodile shark                |
| SMA          | <i>Isurus oxyrinchus</i>           | Shortfin mako                  |
| SPZ          | <i>Sphyrna zygaena</i>             | Smooth hammerhead              |
| THR          | <i>Alopias spp</i>                 | Thresher sharks nei            |
| TTL          | <i>Caretta caretta</i>             | Loggerhead turtle              |