

# Hake Longline Interim report for the period

**1 October 2013 to 31 January 2014**

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## **1. Introduction**

South African Hake Longline association (SAHLLA) has commissioned a Fisheries Conservation programme with the main objective of identifying and addressing some key management and conservation issues related to the fishery. The fishery targets two species of hake namely deep-water hake *Merluccius paradoxus* and shallow-water hake *M. capensis*. There are many uncertainties within the industry regarding the impacts of the fishery, which have become a challenge for market opportunities. Through the conservation project it is hope many of these challenges can be identified and appropriate management measures put in place.

## **2. The SAHLLA FCP Project**

The SAHLLA at-sea scientific data collection programme forms part of the Fisheries Conservation Project (FCP) which was implemented in October 2013. A Fisheries Improvement Plan (FIP) aimed at achieving the MSC certification remains unresolved and an alternate approach (the FCP) has been adopted with similar principles but different objectives.

The objectives of the FCP are to address the issues in the fishery with the long-term aim of meeting the MSC principles and achieving a green listing of hake and some by-catch on the WWF SASSI species category. In addition WWF SA and SAHLLA have signed an agreement to formalise and provide a framework for the relationship between the parties collaborating in a FCP and SAHLLA.

Data collected during this project will be made available to the Department of Agriculture, Forestry and Fisheries (DAFF) to be incorporated into the scientific reports presented at the Demersal Working Group meetings. There is an ongoing relationship and communication between the programme coordinators and DAFF regarding the amendment of the data collection strategy to accommodate specific requirements.

## **3. Observer coverage.**

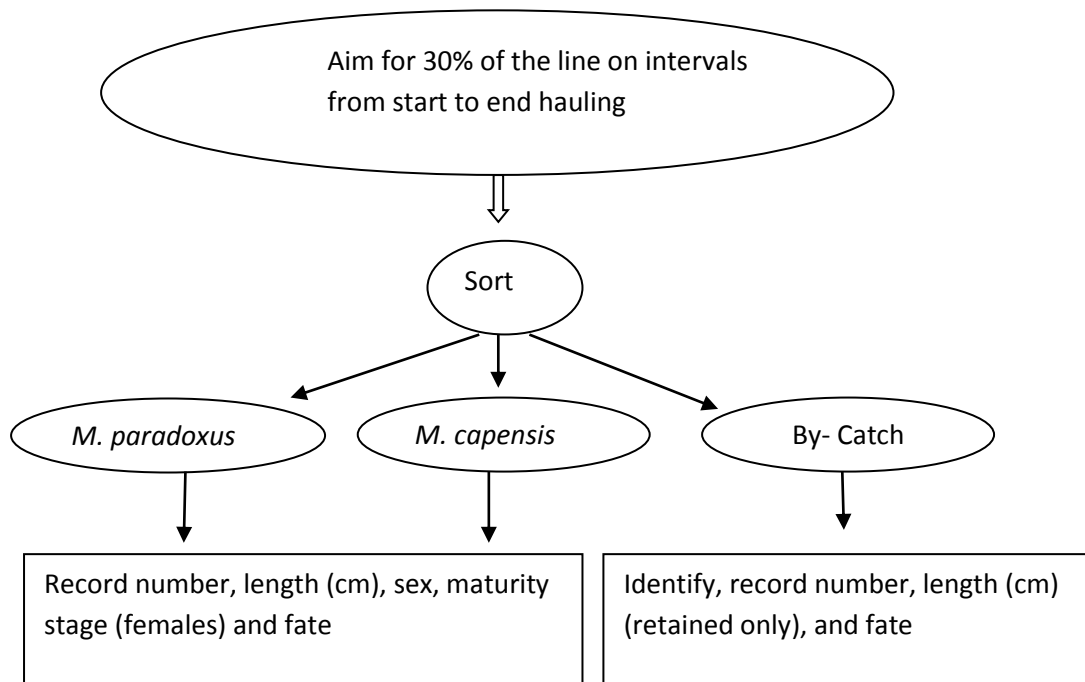
Between October 2013 and mid February 2014, a total of seven vessels were observed amounting to a total of 36 observer sea days. Observer data are collected for each fishing event and may be classified into three categories:

- Effort data – This includes the fishing location by recording the GPS coordinates, fishing depth, temperature, weather, details of the gear and details of hooks.

- Biological data – This section of the data collection includes, but is not limited to: identification of all species caught and observed, measuring length – frequency as well as verifying sex and maturity staging of the retained catches.
- Environmental interaction – a percentage of the line during hauling is reserved for observations only and a dedicated observer would be taking notes regarding the seabird abundance around the vessel, marine mammal interactions (which includes seal interactions with the fishing operations) and hook observation details.

The data collection is divide to two parts i.e. observation and fish sampling. The data collectors are required to observe the hauling process for environmental interactions. For 50% of the line, seabird observations and marine mammal interactions (seals in particular) are monitored for their impacts on fishing. Seabird activities during hauling are also recorded.

### 3.1 Sampling method for length and biological data collection



**Figure 1. Outline of the FCP sampling strategy.**

Table 1 below provides a breakdown on the observer coverage.

**Table 1.** Observer coverage onboard Hake Longline vessels from October 2013 to mid February 2014

Number of Vessels covered	6
Number of observers deployed during this period	5
Number of observer days	38
Number of fishing lines/sets monitored	54
Total number of hooks set	460600
Average Percentage of the line sampled per trip	35%
Average of number of fish sampled per trip	1300
Number of seabird mortality	1
Ports / harbour Covered	Cape Town, HoutBay and Gaansbaai

#### **4. Environmental Data**

The observers (or data collectors) on this project are required to cover a minimum of 50% of each line for environmental observations. During this time they are assigned to observe the seabirds and marine mammal interactions. This includes undertaking seabird counts and report on their behaviour during the discarding of offal. The fish taken by the seals from the line and the fish that was depredated by either sharks or seals were counted and recorded. One white chinned petrel (*Procellaria aequinoctialis*) was the only seabird mortality reported.

Cape fur seals (*Arctocephalus pusillus*) were the only marine mammal species reported during this period and were observed during hauling either snatching bait/fish from the line or feeding on the offal (waste discarded). A total estimation of 1020kg of fish was lost to seal depredation and most of that was discarded or processed for onboard consumption.

White chinned petrel and yellow-nosed albatross (*Thalassarche. spp*) were the dominant seabirds observed. The discards from the vessel attracts more seabirds and as a result all seabirds observed were either foraging or feeding from the vessel discards. On some occasions the small diving seabirds were observed snatching the bait from the hooks during hauling. There was no incidental catches recorded for small birds.

The table below give a seabird species composition sighted during the coverage.

**Table 2: Seabird species sighted during the observation period**

<b>Common Name</b>	<b>Species Name</b>	<b>Activity</b>
White-chinned petrel	<i>Procellaria aequinoctialis</i>	Feeding from vessel discard
Shy albatross	<i>Thalassarche cauta</i>	Feeding from vessel discard
Cape petrel	<i>Daption capense</i>	Feeding from vessel discard, bait depredation
Wilson's storm Petrel	<i>Oceanites oceanicus</i>	Feeding from vessel discard
Atlant. yellow-nosed albatross	<i>Thalassarche chlororhynchos</i>	Feeding from vessel discard
Black-browed albatross	<i>Thalassarche melanophrys</i>	Feeding from vessel discard
Antarctic giant petrel	<i>Macronectes giganteus</i>	Feeding from vessel discard
Giant petrels nei	<i>Macronectes spp</i>	Feeding from vessel discard
Cape gannet	<i>Morus capensis</i>	Feeding from vessel discard
Spectacled petrel	<i>Procellaria conspicillata</i>	Feeding from vessel discard
Shearwaters nei	<i>Puffinus SPP</i>	Feeding from vessel discard
Petrels and shearwaters nei	<i>Procellariidae</i>	Feeding from vessel discard
Petrels nei	<i>Procellaria spp</i>	Feeding from vessel discard
Great shearwater	<i>Puffinus gravis</i>	Feeding from vessel discard
South African fur seal	<i>Arctocephalus pusillus</i>	Feeding from vessel discard, fish depredation, Feeding
Skua	<i>Stercorarius skua</i>	Feeding from vessel discard, bait depredation
Indian yellow-nosed albatross	<i>Thalassarche carteri</i>	Feeding from vessel discard

## 5. Catch Composition Data

The hake longline fishery is one of the fisheries that has a low by-catch (non-retained) and generally skippers target only mature hake (note: the selectivity of hake longline gear is known to selectively fish for larger fish with a high incidence of spawning females. The fishery also fishes on “hard” of rocky habitat in areas not targeted by the trawl fleet. The tables and the charts below demonstrate the catch composition for the period covered.

A total of 93982kg of Hake (*Merluccius capensis* and *M. paradoxus*) forming 97% of the overall catch was recorded, followed by 1510kg of Kingklip (*Genypterus capensis*) Forming 2% of the catch and the balance of minor by-catch species made up the remaining one percent of the overall catch (Figures 2 and 3).

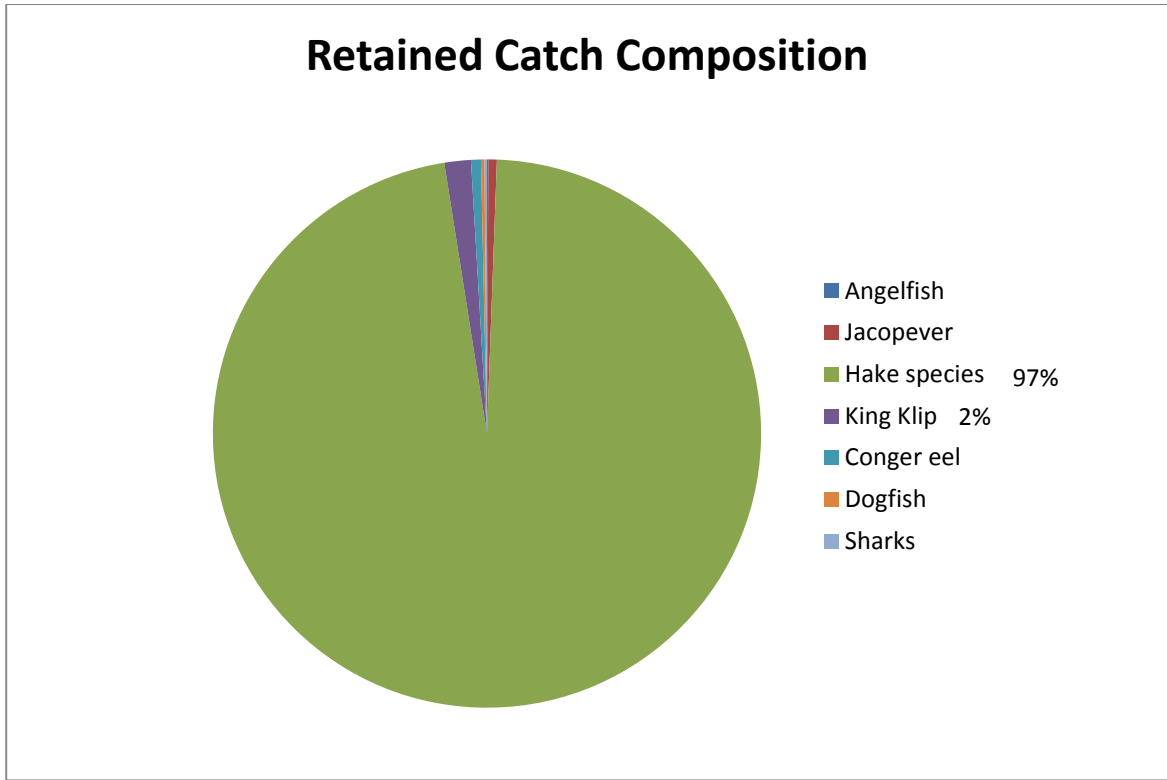


Figure 2: Summary of the catch composition (percentage) for the covered period

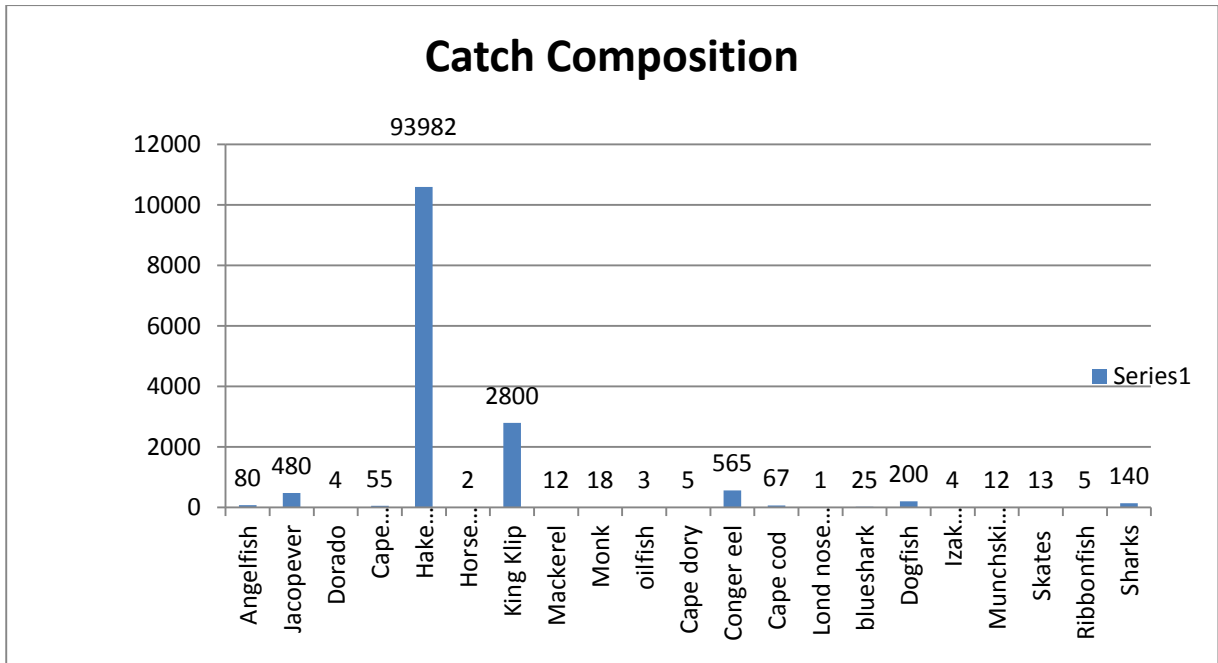


Figure 3: Weight of all species caught in (kg) for the period covered

**Table 2: All species caught on the hake longline for the period sampled**

<b>Common Name</b>	<b>Species name</b>	<b>Total KG Caught</b>	<b>KG Retained</b>	<b>KG Discard</b>	<b>KG damaged by seals</b>	<b>% of catch</b>
Angelfish	<i>Brama brama</i>	80	80	0	0	0,08
Jacopever	<i>Helicolenus dactylopterus</i>	480	60	420	0	0,49
Dorado	<i>Coryphaena hippurus</i>	4	4	0	0	0,00
Cape gurnard	<i>Chelidonichthys capensis</i>	55	55	0	0	0,06
Hake species	<i>Merluccius spp</i>	93982	92452	0	1020	95,44
Horse Mackerel	<i>Thrachurus capensis</i>	2	2	0	0	0,00
King Klip	<i>Genypterus capensis</i>	2800	2800	0	0	2,84
Mackerel	<i>Scomber scomber</i>	12	12	0	0	0,01
Monk	<i>Lophius vomerinus</i>	18	18	0	0	0,02
oilfish	<i>Ruvettus pretiosus</i>	3	3	0	0	0,00
Cape dory	<i>Zeus Capensis</i>	5	5	0	0	0,01
Conger eel	<i>Conger spp</i>	565	0	565	0	0,57
Cape cod	<i>Lepidion capensis</i>	67	0	67	0	0,07
Long nose rattail	<i>Ceolorhynchus braueri</i>	1	0	1	0	0,00
blueshark	<i>Prionace glauca</i>	25	0	25	0	0,03
Dogfish	<i>Squalidae spp</i>	200	0	200	0	0,20
Izak Catshark	<i>Holohalaelurus regani</i>	4	0	4	0	0,00
Munchskin skate	<i>Raja caudaspinosa</i>	12	0	12	0	0,01
Skates	<i>Raja spp</i>	13	0	13	0	0,01
Ribbonfish	<i>Lepidopus caudatus</i>	5	0	5	0	0,01
Sharks		140	0	140	0	0,14

The seals were the only species observed snatching the fish from the line and the hake was the targeted species. More than a ton of fish (hake) was discarded or saved as broken fish due to seal depredation.

## 6. Spatial coverage of the fishery

Vessels departed from Cape Town, Hout Bay and Gansbaai and therefore the fishing activity is predominantly around the Cape Point and west of Cape Town grounds. Fishing took place mostly in the deeper waters at an average depth of 544m. One of the main objectives for the project is to achieve full coverage of all the fishing grounds around the South African coast throughout the year.

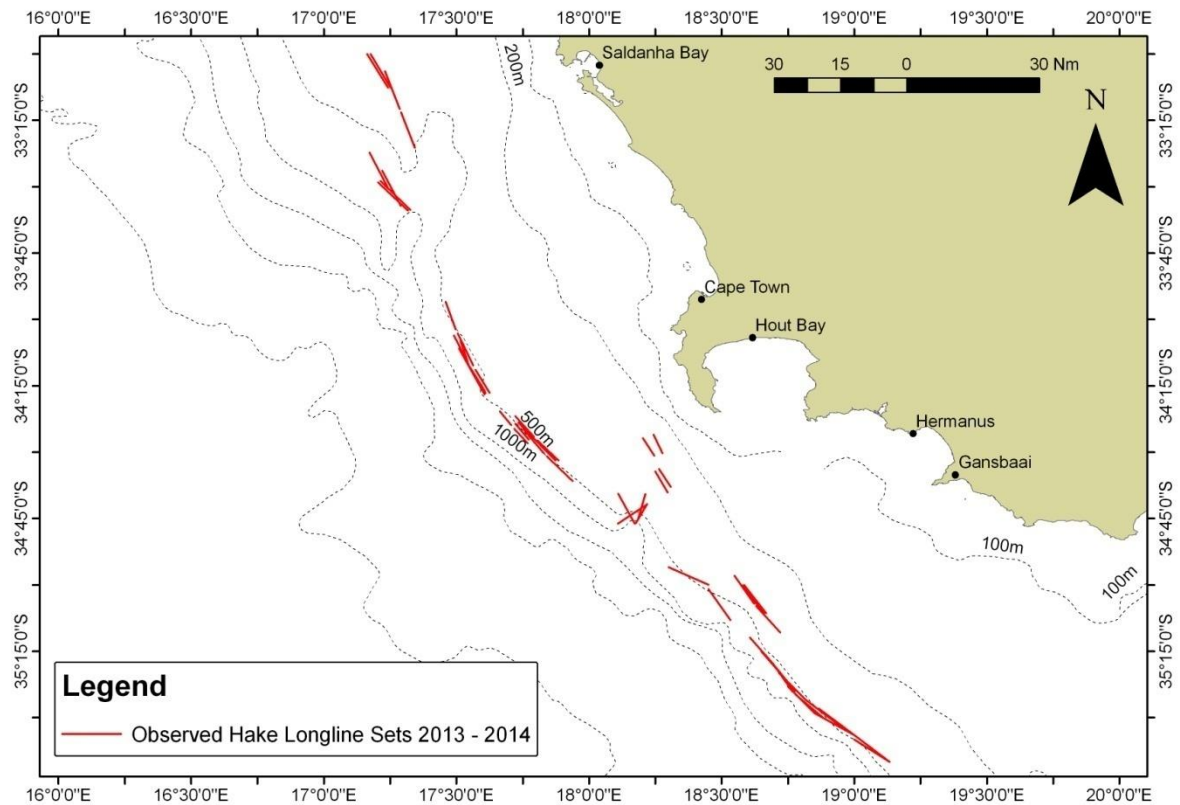


Figure4. FCP data collector's coverage (lines set) from October 2013 to February 2014

## 7. Length frequency and Hake species split

Depth is a significant factor in the hake species distribution. The catch was predominantly *M. paradoxus* and the average fishing depth for the period covered was 544m. A total number of 6333 hake individuals were sampled. The graphs below give a clear indication of both hake species length-frequency.

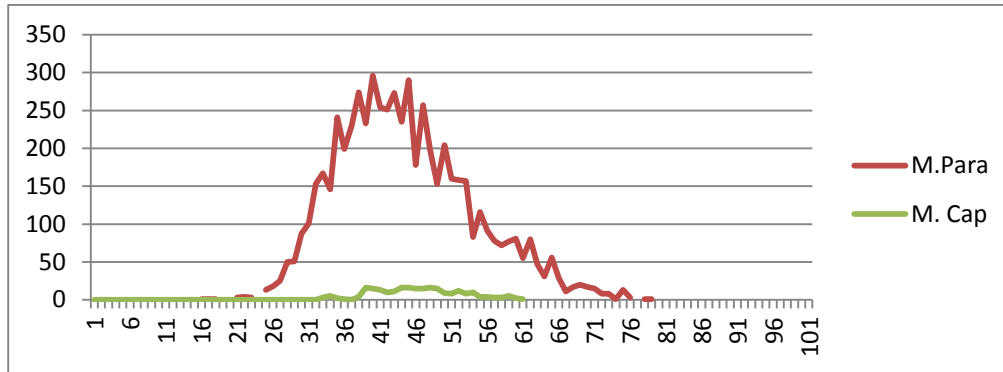


Figure 5: Length frequency of both hake species sampled (unsexed)

## 8. Conclusions

The programme is still at the beginning stages, nevertheless it was agreed that a minimum of three deployments per month would be conducted. The programme has so far completed seven deployments in five months. It is aimed to complete at least seven more trips in the next two months and to increase the sampling frequency (with the support of SAHLLA).

There were a couple of challenges during this period and most of them were resolved. The association and the parties involved in the project are holding regular meetings to address the stumbling blocks. Further, sampling procedures are being tightened and data quality improving. No inference is made at this early stage in the FCP programme regarding issues in the fishery. As the programme progresses, data shall be consolidated and a clearer more data-robust picture shall develop.

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