

Review of the discard information from observer data

Melanie Smith
CapFish
December 2013

Two observer datasets for the hake-directed trawl fishery exist at the CapFish offices,

1. The Offshore Resource Observer Program (OROP) data (2002 – 2011), which consists of both inshore and offshore trawl data and,
2. The South African Deep Sea Trawling Industry Association (SADSTIA) data (2005 – present) which consists mostly of offshore trawl data.

Previous discard experiment

In 2002, a dedicated discard experiment was initiated and catch-composition and length-frequency data were collected. This experiment ended in 2006 for logistical reasons but discard data were still being collected, somewhat sporadically, until 2011 (Table 1). The sampling instructions for this experiment were to collect all the discards (after the crew sorted the catch) and record the length per individual fish and total weight per species. If the total discarded catch consisted of more than 150 kg then a random sample was collected.

Table 1 Number of demersal trawls monitored for discard data (by year and fishing area) off the south and west coast of South Africa between 2002 - 2011

Fishing area		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
West Coast	Offshore	207	821	501	320	444	148	133	226	34	12
South Coast	Inshore	47	389	320	194	54	1	5	4		
	Offshore	17	271	263	95	207	3	43	41	2	
Total		271	1481	1084	609	705	152	181	271	36	12

Current observer data

Currently, observers are instructed to randomly collect 100 kg samples from the unsorted catch (before crew sorts the catch) and measure the length-frequency and weight for all species and maturity stage for female hake. These samples include both retained (target) and non-retained (discard) species.

To determine which species are being discarded, a 'pseudo' comparative analysis with the commercial catch data may be carried out since the industry only records the retained (landed) species. By removing these commercially retained species from the species list in the observer databases (OROP and SADTSIA combined), only the non-retained species remain. This method should be carried out with caution given that it does not consider any species which may be partially retained i.e. discarding only certain size groups or discarding at certain times of the year, and

therefore is likely to under-estimate the total discards. Nevertheless, an example of the types of species that are regularly discarded is presented in Table 2.

Table 2 List of species from the observer data that are not found in the commercial data. Species are represented as a percentage of the total weight (kg) and only the species that contributed more than 0.5% to the total discard catch are presented.

English name	Genus	Species	Weight (kg)	Percentage %
Rat Tail Short Nose Rough	Coelorinchus	simorhynchus	21072.10	21.04
Rat Tail Smooth	Malacocephalus	laevis	16937.74	16.91
Catshark Izak	Holohalaelurus	regini	6546.76	6.54
Crab	.	.	5505.05	5.50
Rat Tail	.	.	9276.56	9.26
Catshark Yellow spotted	Scyliorhinus	capensis	4744.08	4.74
Horse fish	Congiopodus	sp	2499.80	2.50
Black ruff	Centrolophus	niger	2019.70	2.02
Ray Unid	.	.	1736.90	1.73
Oilfish (Ruvettus)	Ruvettus	pretiosus	1620.40	1.62
Catshark pajama (striped)	Poraderma	africanum	1331.10	1.33
Ray Electric	.	.	1300.60	1.30
Cod Cape	Lepidion	capensis	1292.20	1.29
Anemone	Actiniaria	.	1248.51	1.25
Eel Cape Conger	Conger	wilsoni	1205.80	1.20
Catshark Saldanha	Apristurus	saldanha	1174.60	1.17
Barble (white sea catfish)	Galeichthys	feliceps	1120.50	1.12
Eel Conger spp.	.	.	1539.20	1.54
Cardinal (Epigonus Sp)	.	.	807.04	0.81
Jelly belly	Psychrolutes	macrocephalus	749.66	0.75
Ray Electric black spotted	Torpedo	fuscocomaculata	738.90	0.74
Cod Deepsea (Moridae)	Lepidion	.	703.20	0.70
Starfish	.	.	671.30	0.67
Ray Bulray	Myliobatis	aquila	650.90	0.65
Shark Sand shark	Rhinobatos	annulatus	596.10	0.60
Shark Shy Shark	.	.	573.90	0.57
Catshark	.	.	564.60	0.56
Rat Tail Purple Sp.	.	.	561.71	0.56
Jelly fish	.	.	551.00	0.55
TOTAL			100141.28	100.00

Potential discard experiment for the future

It has been brought to our attention that further collection of discard data may be possible as part of the SADSTIA sampling strategy. The observer would be instructed to carry out two sampling activities alternating throughout the trip, 1) the sampling of the unsorted catch and 2) the sampling

of the discards. The instructions would essentially remain the same as above except that the observer would randomly select the activity per trawl before the trip.