Monitoring the proportion of directed sardine catch west and east of Cape Agulhas

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Introduction

The initial recommendation of the Small Pelagic Scientific Working Group for the sustainable management of small pelagic resources for the season 2014 (FISHERIES/2013/DEC/SWG-PEL/68) included the following statement:

> "Industry associations request their members to spread their combined effort such that
> the overall directed sardine catch is in proportion to the observed biomass distribution
> in November 2013. For 2014 we would encourage them not to exceed catching 70% of
> the directed sardine TAC west of Cape Agulhas (west of 20˚ E)."

This document considers the proportions of directed sardine catch west and east of Cape Agulhas taken up to 30th April 2014.

Historic catch proportions

Figure 1 shows the annual cumulative proportions of directed sardine caught west of Cape Agulhas since 2005. On average, the proportion west of Cape Agulhas increases from January to March and then levels off with a small decrease between April/May and December.

The average cumulative proportions of directed sardine caught west of Cape Agulhas from January to April/May are 0.65/0.59 and 0.71/0.67 over the periods 2005-2013 and 2008-2013, respectively, with the final annual average proportions west of Cape Agulhas being 0.55 and 0.63, respectively.

On average, the cumulative proportion caught west of Cape Agulhas up to the end of April is 1.11[1] (over 2008-2013) of the total annual proportion (Table 1).

Catch proportions in 2014

The cumulative proportion of directed sardine catch west of Cape Agulhas up to the end of April is 0.85 (FISHERIES/2014/APR/SWG-PEL/29 with further updates). Thus if fishing effort continued in the same manner as that in the past few years, it would be expected that the total proportion of directed sardine caught west of Cape Agulhas in 2014 would be 0.76 (from 0.85/1.11) (Figure 2). If fishing effort followed

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[1] Or 1.23 if the average is taken over 2005-2013.

the same pattern as that over 2008-2013, the cumulative proportion of directed sardine caught west of Cape Agulhas should be 0.78, 0.74, 0.71 and 0.69 by the ends of April, May, June and July, respectively in order to achieve a final annual proportion of directed sardine west of Cape Agulhas of 0.70 (Figure 2).

Table 1. The ratio of historic cumulative proportions of directed sardine catch taken west of Cape Agulhas in each month to the final annual proportion. The **bold** values are referred to in the text.

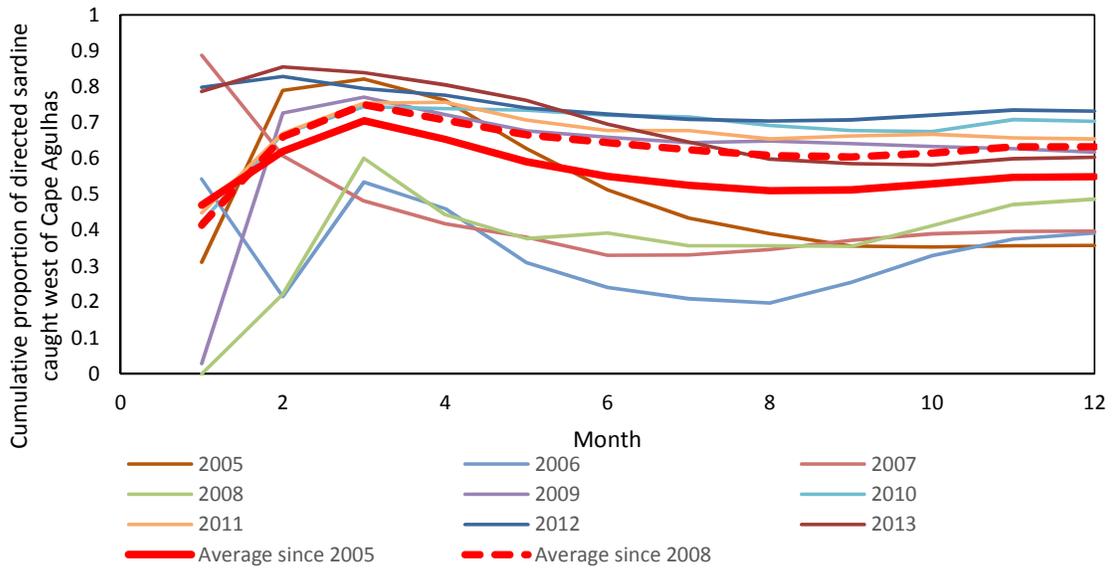|	2005	2006	2007	2008	2009	2010	2011	2012	2013	Avg (05-13)	Avg (08-13)
Jan	0.87	1.38	2.23	0.00	0.05	0.60	0.68	1.09	1.30	0.91	0.62
Feb	2.21	0.55	1.53	0.46	1.18	0.95	1.02	1.13	1.42	1.16	1.03
Mar	2.30	1.36	1.21	1.23	1.25	1.06	1.15	1.09	1.39	1.34	1.19
Apr	2.13	1.17	1.05	0.91	1.17	1.05	1.16	1.06	1.33	**1.23**	**1.11**
May	1.76	0.79	0.96	0.77	1.10	1.04	1.08	1.01	1.26	1.09	1.04
Jun	1.43	0.61	0.83	0.81	1.07	1.02	1.04	0.99	1.15	0.99	1.01
Jul	1.21	0.53	0.83	0.73	1.04	1.02	1.04	0.97	1.07	0.94	0.98
Aug	1.09	0.50	0.87	0.73	1.05	0.98	1.00	0.96	0.99	0.91	0.95
Sep	1.00	0.65	0.94	0.73	1.04	0.96	1.01	0.97	0.97	0.92	0.95
Oct	0.99	0.84	0.98	0.85	1.03	0.96	1.02	0.99	0.96	0.96	0.97
Nov	1.00	0.96	1.00	0.97	1.02	1.01	1.00	1.00	0.99	0.99	1.00
Dec	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Figure 1. The historic cumulative proportion of directed sardine catch taken west of Cape Agulhas. The averages of these proportions over 2005-2013 and 2008-2013 are also shown.
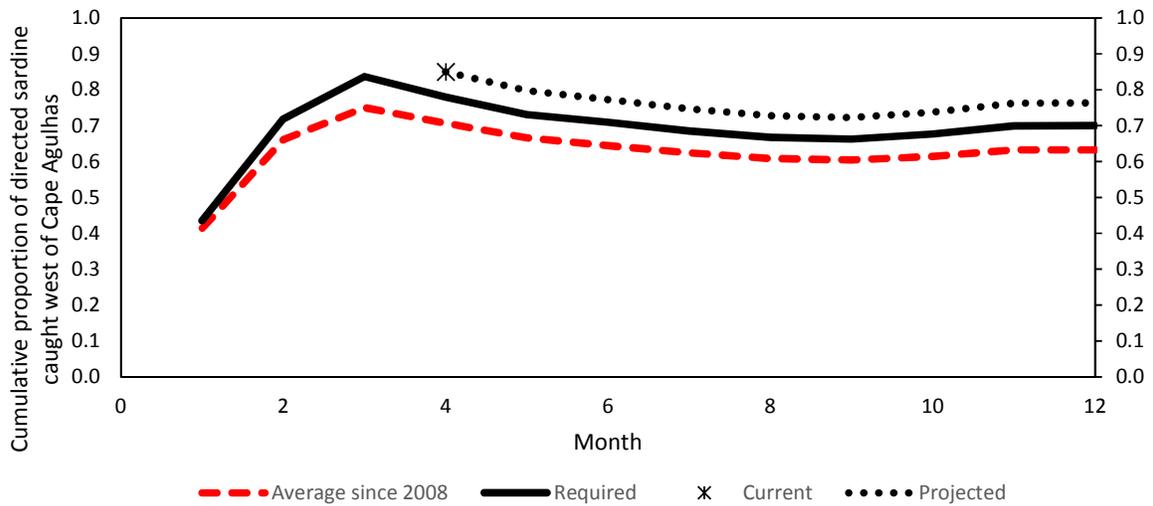

Figure 2. The cumulative monthly proportions required on average if a total annual cumulative proportion of 0.70 were to be achieved (black solid line), compared to that projected from a current cumulative proportion of 0.85 at the end of April (black dotted line).

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