



## Monitoring the proportion of directed sardine catch west and east of Cape Agulhas : update to end of July

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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 31<sup>st</sup> July 2014 and thus updates de Moor and van der Westhuizen (2014a,b,c).

### 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/June/July are 0.65/0.59/0.55/0.52 and 0.71/0.67/0.64/0.62 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/May/June/July is 1.11 / 1.04 / 1.01/0.98<sup>1</sup> (over 2008-2013) of the total annual proportion (Table 1).

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<sup>1</sup> Or 1.23 / 1.09 / 0.99 / 0.94 if the average is taken over 2005-2013.

### **Catch proportions in 2014**

The cumulative proportion of directed sardine catch west of Cape Agulhas up to the end of July 2014 is 0.61, a decrease from 0.83, 0.73 and 0.67<sup>2</sup> up to the end of April, May and June 2014, respectively. 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 0.62 (from 0.61/0.98) (Figure 2) – a decrease from 0.75, 0.70 and 0.66<sup>2</sup> projected by de Moor and van der Westhuizen (2014a,b,c). If fishing effort followed the same pattern as that over 2008-2013, the cumulative proportion of directed sardine caught west of Cape Agulhas should be 0.78, 0.73, 0.71 and 0.68 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).

Figure 3 indicates that, if the full directed sardine TAC of 90 000t is caught during 2014, a maximum of 63 000t (70% of 90 000t) should be caught west of Cape Agulhas. Just under 40 000t had been caught west of Cape Agulhas by the end of July, with 24 900t of the TAC remaining.

### **References**

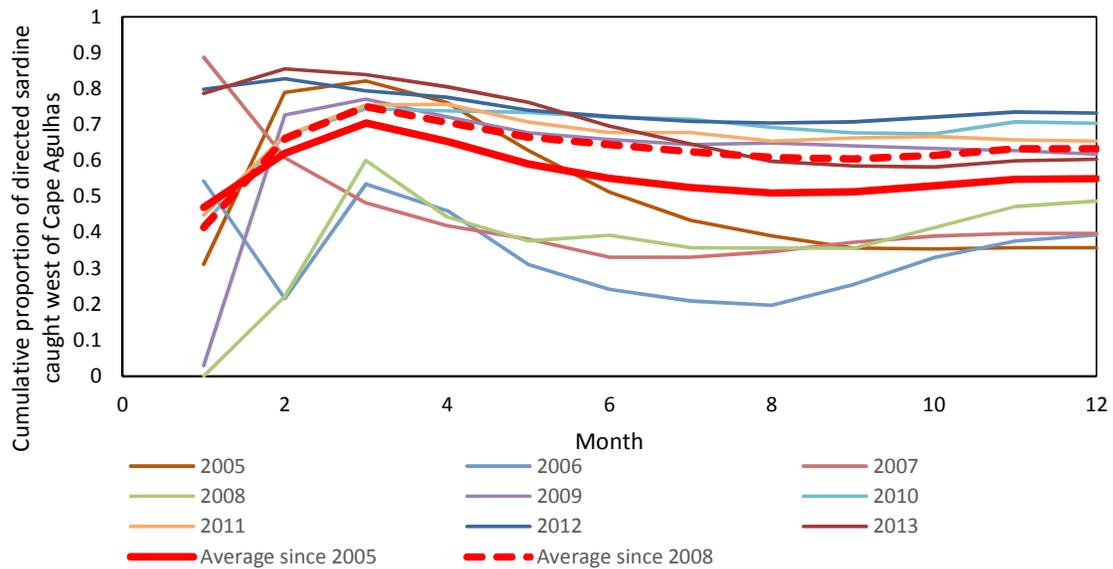
- de Moor, C.L., and van der Westhuizen, J. 2014a. Monitoring the proportion of directed sardine catch west and east of Cape Agulhas. DAFF: Branch Fisheries document FISHERIES/2014/MAY/SWG-PEL/31. 3pp.
- de Moor, C.L., and van der Westhuizen, J. 2014b. Monitoring the proportion of directed sardine catch west and east of Cape Agulhas: update to end of May DAFF: Branch Fisheries document FISHERIES/2014/JUN/SWG-PEL/33. 3pp.
- de Moor, C.L., and van der Westhuizen, J. 2014c. Monitoring the proportion of directed sardine catch west and east of Cape Agulhas: update to end of June DAFF: Branch Fisheries document FISHERIES/2014/JUL/SWG-PEL/41rev. 4pp.

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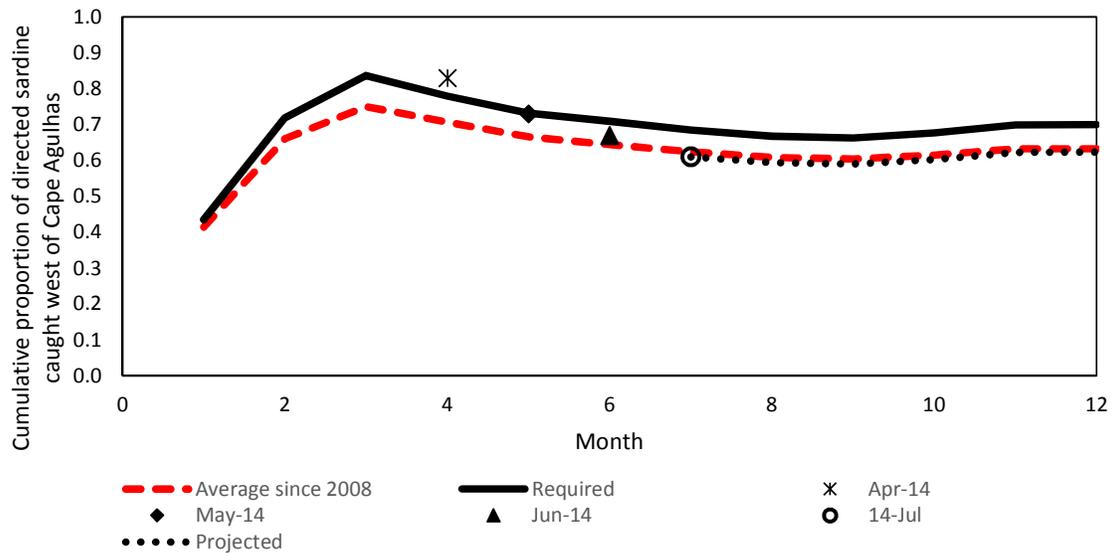
<sup>2</sup> These proportions have been updated from de Moor and van der Westhuizen (2014c) with the most recent data records.

**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.

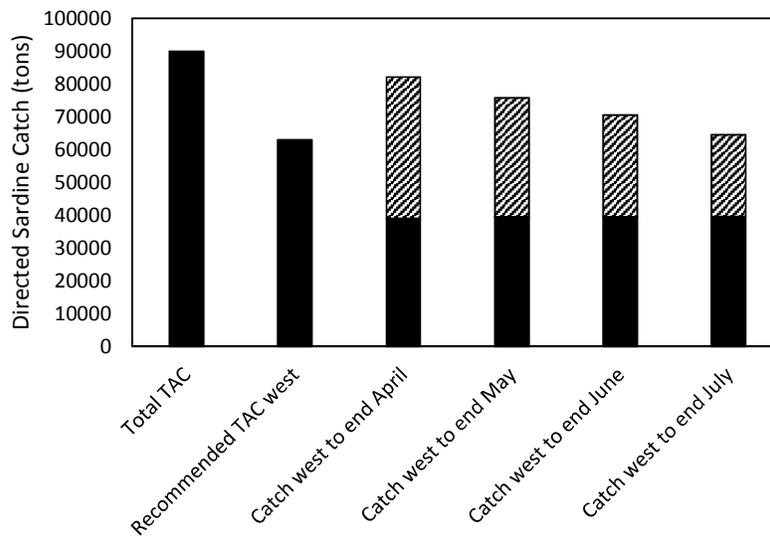
|     | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Avg<br>(05-13) | Avg<br>(08-13) |
|-----|------|------|------|------|------|------|------|------|------|----------------|----------------|
| Jan | 0.87 | 1.38 | 2.23 | 0.00 | 0.05 | 0.60 | 0.68 | 1.09 | 1.30 | 0.91           | 0.62           |
| 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 | <b>1.23</b>    | <b>1.11</b>    |
| 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 0.64 at the end of July (black dotted line).



**Figure 3.** The directed sardine TAC, TAC recommended to be caught west of Cape Agulhas, and recorded catch west of Cape Agulhas to the end of April, May, June and July 2014. The hashed bars indicate the remaining 2014 directed sardine TAC.