

FROM: DIRECTOR-GENERAL: MS PAM YAKO

TO: DDG: MCM

COMMENTS: Approved

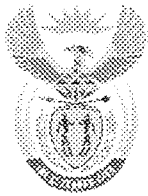
ODG: NGS/SAKE

Workflow Details

ODG: NGS/SAKE
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 MINISTRY OF ENVIRONMENT
 AFFAIRS AND TOURISM

17676 SOLE TAC 2008						
Date	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:	
05 December 2007 04:38 PM	Beryl Batties	WF: ODG Scan Registry	20 December 2007 03:10 PM		Executing	
Initiator Comments:						
Step Details...						
Step Name	Performer	Task Disposition	Due Date	Done Date	Comments	
Step 2 - Director	Theressa Akkers	Forward to CD	07 December 2007 04:38 PM	05 December 2007 04:45 PM		
Step 3 - Chief Director	Andre Share	Recommended	07 December 2007 04:45 PM	10 December 2007 02:15 PM	Dear DDG New version has been added. Regards Andre	
Step 4 - Deputy Director-General	Monde Mayekiso	Recommended	12 December 2007 02:15 PM	11 December 2007 04:13 PM		
Step 5 - Chief Financial Officer (MCM)	Saliem Mohamed	Funds available	13 December 2007 04:13 PM	13 December 2007 04:50 PM		
Step 6 - Chief Operating Officer	Nosipho Jezile	Recommended	17 December 2007 04:50 PM	14 December 2007 01:00 PM		
Step 7 - Language Practitioner	Constance Molope		18 December 2007 01:00 PM	14 December 2007 01:10 PM		
Step 8 - Director-General	Pam Yako	Recommended	18 December 2007 01:10 PM	14 December 2007 02:14 PM		
Step 8D - Print Documents for DG	Betta Coetzee		18 December 2007 02:14 PM	14 December 2007 03:10 PM		
Step 8E - Scan & Attach Signed Submission	WF: ODG Scan Registry		18 December 2007 03:10 PM			
Step 9 - Workflow Complete	WF: D:O&HSFM		20 December 2007 03:10 PM			

17676



environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

Reference: V1/20/5/1/2

MINISTER

TOTAL ALLOWABLE CATCH (TAC) FOR THE 2008 SOLE FISHING SEASON

1. PURPOSE

- 1.1 To request that you determine the Total Allowable Catch (TAC) for the 2008 Sole fishing season in terms of the provisions of Section 14 of the Marine Living Resources Act, 1998 (Act No. 18 of 1998).

2. SUMMARY

- 2.1 It is recommended that the 2008 Sole TAC be maintained at 872 tonnes. A constant-catch TAC of 872 tonnes has been set since 1992. The fishing season for sole is from 1 January to 31 December.

3. BACKGROUND

- 3.1 For the 2007 season you determined a TAC of 872 tonnes for the sole fishery (Annexure A).
- 3.2 The Department considered the recommendations from the Chief Directorate: Research, Antarctica and Islands of the Branch: Marine and Coastal Management (as per Annexure B) and wishes to advise as follows:
 - Sole is a small but commercially important component of the mixed-species inshore trawl fishery on the Southeast Coast, the other target species being hake and horse mackerel. Exploitation of sole formed the economic base for the fishery on the Cape South Coast and was the driving force for the development of the coastal fishing fleet.

- Biomass estimates determined by direct surveys were conducted from 1986 onwards. Since the trawl gear on the FRS *Africana* was changed in May 2003, latest estimates are not comparable with the rest of the time-series. South Coast surveys using *Africana*'s "old" and "new" trawl gear to provide a period of overlap between the old and new time series for use in calibrating the time series was initiated in 2006. A sole-directed survey entailing 3 days of intensive sole-directed survey trawls was conducted in September 2006. However, several more surveys will be required before adequate time and spatial coverage is achieved for a revised assessment of sole.
- The sole resource has been assessed since 1989 by means of an *ad hoc* tuned Virtual Population Analysis (VPA). The reliability of the model has been in doubt for a number of years and as a result a constant *TAC* of 872 tonnes has been set since 1992 while the VPA has been applied occasionally over recent years simply as a monitoring tool.
- The past four years has seen decline in nominal catches of sole, although catch rates on sole dedicated vessels (engine power less 250 KW) remained constant over the same period compared with vessels targeting hake and sole (engine power more than 250 KW). The decline is due to poor performance by large vessels as a result of operational and economic constraints.
- The Department is in the process of implementing a capacity management regime for the hake fishing sector that takes account of the vessel capacity required to catch hake and sole in the inshore trawl sector.
- Although the latest nominal catch rates are below average, they are not the lowest on record. It is therefore not considered sufficiently serious to require an immediate deviation from the current constant catch strategy, though this position will need careful review in future given further resource monitoring indices and biomass estimates.

4. OTHER BRANCHES/CHIEF DIRECTORATES CONSULTED

- 4.1 The Chief Directorates Marine Resource Management and Research, Antarctica and Islands have been consulted.

5. IMPLICATIONS

Personnel : Limited
Financial : None
Communication : Limited

6. RECOMMENDATION

6.1 It is recommended that a global Total Allowable Catch (TAC) of 872 tonnes of sole be determined for the 2008 season and such TAC be apportioned and allocated as follows:

Commercial Fishing : 872 tonnes
Recreational Fishing : Nil allocation
Subsistence fishing : Nil allocation
Foreign Fishing : Nil allocation

DIRECTOR-GENERAL

DATE:

RECOMMENDATION IN PARAGRAPH 6 APPROVED/~~NOT APPROVED~~

[Handwritten signature]
MINISTER APPROVED
TELEPHONICALLY ON
19 DECEMBER 2007

MINISTER *WS*

DATE:

Counter sign on 14/01/08.

11608

ANNEXURE A



environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

Reference: V1/20/5/1/2

MINISTER

TOTAL ALLOWABLE CATCH (TAC) FOR THE 2007 SOLE SEASON

1. PURPOSE

- 1.1 To request that you determine the Total Allowable Catch (TAC) for the 2007 Sole season in terms of the provisions of Section 14 of the Marine Living Resources Act, 1998 (Act No. 18 of 1998).

2. SUMMARY

- 2.1 It is recommended that the 2007 Sole TAC be maintained at 872 tonnes. A constant-catch TAC of 872 tonnes has been set since 1992. The fishing season for sole is from 1 January to 31 December.

3. BACKGROUND AND DISCUSSION

- 3.1 For the 2006 season you determined a TAC of 872 tonnes for the sole fishery (Annexure A).

The Department considered the recommendations from the Chief Directorate: Research, Antarctica and Islands of the Branch: Marine and Coastal Management (as per Annexure B) and wishes to advise as follows:

- Sole is a small but commercially important component of the mixed-species inshore trawl fishery on the Southeast Coast, the other target species being hake and horse mackerel. Exploitation of sole formed the economic base for the fishery on the Cape South Coast and was the driving force for the development of the coastal fishing fleet.
- Biomass estimates determined by direct surveys were conducted from 1986 onwards. Since the trawl gear on the FRS *Africana* was changed in May 2003, latest estimates are not comparable with the rest of the time-series. South Coast surveys using *Africana*'s "old" and "new" trawl gear to provide a period of overlap between the old and new time series for use in calibrating the time series was initiated in 2006. A sole-directed survey entailing 3 days of intensive sole-directed survey trawls was conducted in September 2006. However, several more surveys will be required before adequate time and spatial coverage is achieved for a revised assessment of sole.
- The sole resource has been assessed since 1989 by means of an *ad hoc* tuned Virtual Population Analysis (VPA). The reliability of the model has been in doubt for a number of years and as a result a constant TAC of 872 tonnes has been set since 1992 while the VPA has been applied occasionally over recent years simply as a monitoring tool.
- Although the latest nominal catch rates are below average, they are not the lowest on record. It is therefore not considered sufficiently serious to require an immediate deviation from the current constant catch strategy, though this position will need careful review in future given further resource monitoring indices and biomass estimates.

4. IMPLICATIONS

Personnel	:	Limited
Financial	:	None
Communication	:	Limited

5. RECOMMENDATION

It is recommended that a global Total Allowable Catch (TAC) of 872 tonnes of sole be determined for the 2007 season and such TAC be apportioned and allocated as follows:

Commercial Fishing	:	872 tonnes
Recreational Fishing	:	Nil allocation
Subsistence fishing	:	Nil allocation
Foreign Fishing	:	Nil allocation

Recommended by DG on EDOM 2/10/2006

DIRECTOR-GENERAL

DATE:

RECOMMENDATION IN PARAGRAPH 5 APPROVED/NOT APPROVED

*Minister approved telephonically on 22/12/2006 @ 10:00.
Will continue on return to office.*

MINISTER

DATE:



22/12/2006

Countersign on

15/1/07





RECOMMENDATION ON THE AGULHAS SOLE TAC FOR THE YEAR 2008

Summary

It is recommended that the TAC for Agulhas sole for 2008 be maintained at 872 t.

Background

Agulhas soles are a small but commercially important component of the mixed-species inshore trawl fishery on the Southeast Coast, other target species being shallow-water hake and horse mackerel. The resource has been exploited since the beginning of the last century and was one of the first stocks to be managed in South Africa. Exploitation of sole formed the economic base for the fishery on the Cape South Coast and was the driving force for the development of the coastal fishing fleet. The first concerted attempt at managing the Agulhas sole fishery was made in 1935, with the introduction of a 75 mm mesh size for bottom trawl nets. A global quota, or total allowable catch (TAC) of 700 t was first introduced in 1978 and individual quotas were introduced 1982. The sole TAC has remained fairly stable, varying between 700 and 950 t since then (Fig 1).

Over the years several factors influenced the strategy and performance of the operators in the inshore trawl fishery. These included: the change from a fishery targeting sole in the 1930s to one targeting several species by the late 1970s; management interventions such as the introduction of a global quota system in 1978; individual quotas in 1982; stricter enforcement of the mesh size regulation; boat limitation; fleet rationalisation; the closure of certain (nursery) areas to fishing to protect juvenile sole and, more recently, the prevention of within-season trade in quota. A constant-catch TAC of 872 t has been set since 1992.

Assessment

Catches per calendar year (since 1920) and TAC (since 1978) are illustrated in Fig. 1. It is important to draw a distinction between calendar year catch (as used in the assessment models) and quota year catches (used for resource management purposes), as the "quota year" does not coincide with a calendar year. Therefore, where the catch in a calendar year is above or below the TAC in Fig. 1 it does not necessarily reflect over- or under-catch of the TAC. For example, the fleet was tied up for five months in 1999 and was subsequently allowed to hold catches taken before March 2000 against their 1999 allocations, resulting in the catch in the 1999 calendar year being below, and that in 2000 above the annual catch limit. Similarly management action in response to an over-catch of the 2001 allocation resulted in 37t of the TAC₂₀₀₂ being withheld and contributing to the apparent under-catch in 2002.

There is substantial inter-annual variability in the time series of annual catches (Fig. 1) and catch rates. This variability is thought to be driven primarily by environmentally induced fluctuations in sole availability linked to strong northwest fronts, and in recent years, by operational constraints rather than by fluctuations in sole abundance. In years of depressed sole availability the situation is sometimes exacerbated by hake moving off the traditional sole grounds, which results in a reduction in the associated hake catch. This

RECOMMENDATION ON THE AGULHAS SOLE TAC FOR THE YEAR 2008

situation renders sole-directed fishing less profitable, and consequently some vessels (particularly the larger vessels) concentrate more on hake so that some sole allocations are not fully utilised.

At first glance Fig. 1 appears to show a serious decline in the annual sole catch since 2000. However, catches taken during the first three months of 2000 were held against the 1999 allocations and the catch rate in 2000 was exceptional high; hence the take within the 2000 calendar year was substantially above the TAC_{2000} . The apparent under-catches in 2001-2003 are partially due to management interventions to compensate for earlier over-catches and are well within the historic inter-annual variation. Thus it is really only over the last three years that there has been a consistent and substantial under-catch of the TAC .

It is important to determine whether this catch decline since 2003 is due to reduced sole biomass, or to other factors. The sole catch rate for the five small (engine power less than 250 kW) sole specialist vessels fishing on the sole grounds has essentially been constant since 2002 (Fig. 2). This indicates that the decline in catches is probably not caused by a reduction in either the biomass or availability of soles on the sole grounds. Instead, there are a number of operational and economic constraints that could explain the recent under-catches:

- Sea Vuna, the largest sole right holder (274 t) had a temporary lack of capacity caused by the loss of one of their vessels and the withdrawal of a charter arrangement with another vessel. This right holder has commissioned the construction of two new sole trawlers to address this situation.
- Hake catch rates in the inshore area are depressed. As a result right holders with larger hake allocations and larger vessels have deployed all their fishing effort towards filling their hake allocations and do not have the spare capacity to direct towards sole. This is a temporary situation which will hopefully be resolved as hake availability improves.
- Vessels with larger engines (more than 250 kW) have higher running costs (primarily as a result of higher fuel costs) than vessels with smaller, less powerful engines and consequently require a higher daily production to remain economically viable. Sole catch rates have always been sub-economic for these larger vessels, and they have traditionally targeted sole only during periods when there was sufficient hake by-catch on the sole grounds to make the trip economically viable.
- Right holders in the Inshore Trawl sector require both hake and sole allocations as the two species are generally caught together. However, the ratio of hake to sole in the catches on and off the sole grounds fluctuates. Historically, within-season trading of hake and sole quota was used by right holders to adjust their hake and sole allocations to the fluctuations in the hake:sole ratio. Since the introduction of medium- and long-term rights, within-season trading of quota is no longer permitted and it is very difficult for right holders to balance their hake and sole allocations.

Biomass estimates determined by direct surveys using the swept area method are illustrated in Fig. 3, together with the associated 95% confidence intervals. Surveys have been conducted annually from 1986 to 1989, and then increased to bi-annually. However, for technical reasons, only one survey per year was completed in 1996, 1997, 1999, and 2001, and none in 1998, 2000 and 2002. The September 2005 survey was cancelled due to the limitations on hours worked imposed by the Basic Conditions of Employment Act. The trawl gear on the FRS *Africana* was changed in May 2003 and indices from surveys using the new gear (Fig. 3 - squares) are not comparable to indices from surveys using the old gear (Fig. 3 - circles).

There are sometimes large within-year differences between survey biomass indices (e.g. 1991, 1992 and 1994 in Fig. 3). In some years these fluctuations are too large to be attributed to changes in absolute abundance, and they are thought to reflect primarily environmentally induced changes in availability of sole to the research trawl during the surveys. Although the biomass index declined sharply in 1997, the 1999

RECOMMENDATION ON THE AGULHAS SOLE TAC FOR THE YEAR 2008

estimate is only slightly below the mean. The April 2003 estimate was similar to that of 1999. Note that the four latest estimates are not suggestive of any recent marked change in abundance. Although the modified rock-hopper footrope on the new trawl gear is expected to be more efficient than a standard rock-hopper footrope at catching sole and other flatfish, it will nonetheless be less efficient than the rope-wrapped chain footrope used by the old trawl gear.

From 1989 to 1999 the Agulhas sole resource was assessed annually by means of an *ad hoc* tuned VPA. However, the reliability of the model output was in doubt for a number of years because of a lack of annual age/length keys and poor fits to CPUE and survey data. Owing to these poor fits of the biomass indices, and the relatively minor annual adjustments in results forthcoming from the model, a constant TAC of 872 t has been recommended since 1992.

Associated issues

Sole is taken in a multi-species fishery, based primarily on catches of hake and sole. In this multi-species fishery it is important to allow within season transfer of sole and hake allocations. This will provide the flexibility for operators to balance their allocations of different resources, and enable year-round fishing without resorting to dumping. The catch composition of the sole survey has improved knowledge of the potential impacts on the linefish species in the area. This knowledge could lead to improvements in permit conditions imposed to protect South Africa's vulnerable line fish species.

Apparent under-catches since 2002 are not of themselves an indication of lack of capacity in the hake/sole fishery. Inter-annual fluctuations in sole landings reflect a combination of management (allocation delays, penalties imposed for over-catches), operational (balancing hake and sole allocations) and environmental factors (changes in availability of sole and/or hake on the sole grounds). There has been a short-term lack of capacity as a result of the ban on within season trading of sole quota: however this is being addressed through the construction of two new sole trawlers in 2007 and 2008 by the largest right holder.

Recommendations

Although annual catches recorded since 2002 are below the TAC, this is considered to primarily reflect operational constraints, and a temporary lack of fishing capacity for the largest sole right holder. This view is supported by the flat CPUE trajectory recorded by the five sole specialist vessels on the sole grounds (Fig. 2). Therefore, although the recent under-catches point to the need to develop improved methods for assessing the Agulhas sole resource, they are not considered sufficient reason to require an immediate deviation from the current constant catch strategy, though this position will require careful monitoring. Consequently, it is **recommended that the present constant-catch strategy for the management of the sole resource be continued and that the TAC for Agulhas sole for the year 2008 be maintained at 872 t.**

It is also recommended that within season transfer of hake and sole allocations be routinely permitted in this fishery.



C.J. Augustyn
Chief Director: Research, Antarctica and Islands

Date: 15/11/2007

RECOMMENDATION ON THE AGULHAS SOLE TAC FOR THE YEAR 2008

Table 1: Preliminary results of the sole-directed surveys on the traditional sole grounds between Cape Infanta and Mossel Bay.

Year	Month	Index	S.E.	C.V.
2006	Sept	883.692 t	131.058 t	15%
2007	Apr	690.207 t	92.704 t	13%

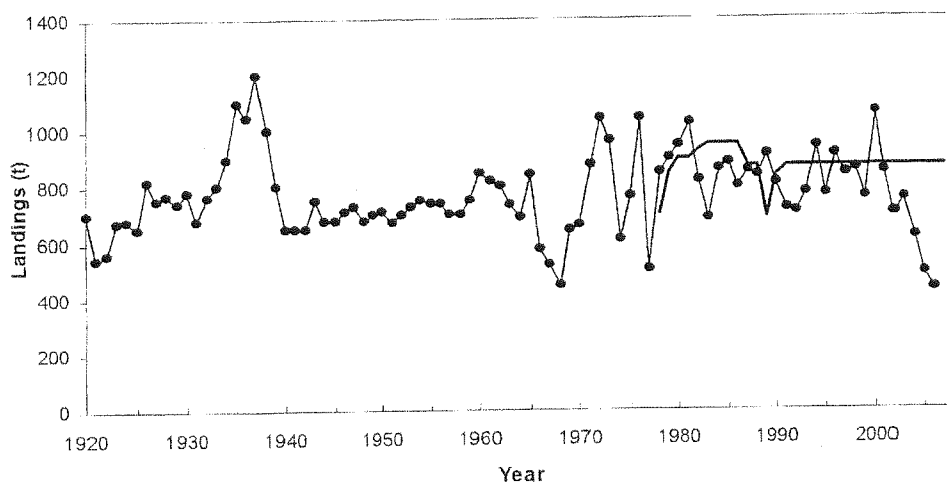


Figure 1: Annual landings (solid dots) and *TAC* (thick line) for Agulhas sole on the southeast coast.

RECOMMENDATION ON THE AGULHAS SOLE TAC FOR THE YEAR 2008

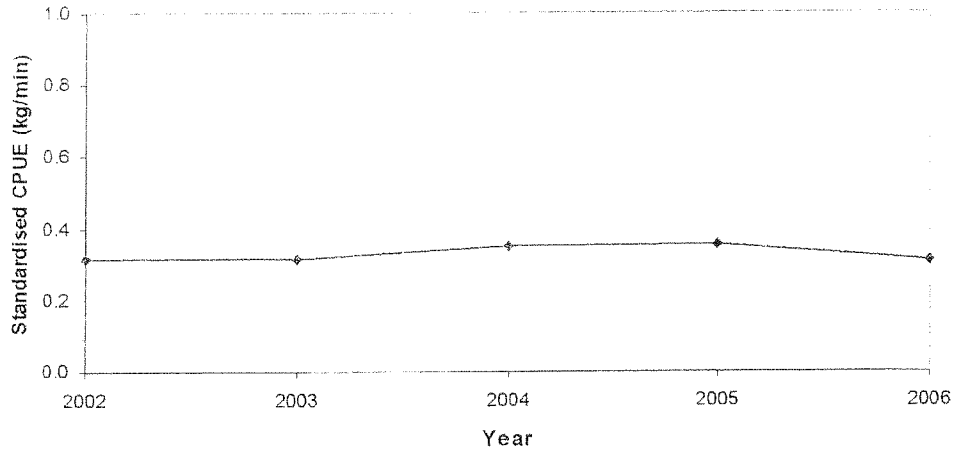


Figure 2 Standardised catch per unit effort for the five small sole specialist vessels on the sole grounds since 2002.

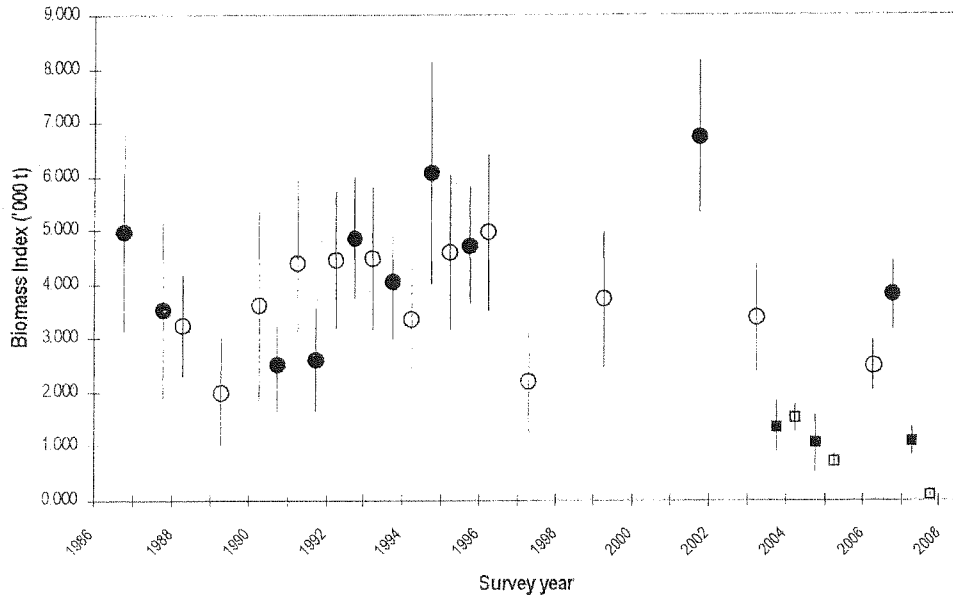


Fig. 3: Spring (solid symbol) and autumn (open symbol) survey biomass estimates with 95% confidence intervals for the Agulhas sole resource on the southeast coast of South Africa. **Note:** The trawl gear was changed in July 2003 and the time series using the old trawl gear (circles) is not comparable to that using the new gear (squares), see text for further details.