



FISHERY ASSESSMENT REPORT

IFFO GLOBAL STANDARD FOR RESPONSIBLE SUPPLY OF FISHMEAL AND FISH OIL



FISHERY:	Redeye Herring (<i>Etrumeus whiteheadi</i>)
LOCATION:	South Africa
DATE OF REPORT:	5/12/11
ASSESSOR:	Sam Peacock

Global Trust Certification Ltd, Quay side Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09

Report Ref:

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

1. Application Details and Summary of the Assessment Outcome			
Name:			
Address:			
Country: South Africa		Zip:	
Tel. No.		Fax. No.	
Email address:		Applicant Code	
Key Contact:		Title:	
Certification Body Details			
Name of Certification Body: Global Trust Certification			
Assessor Name:	Peer Reviewer:	Assessment Days:	Initial/Surveillance/Re-certification:
Sam Peacock	Mike Platt	5	Initial
Assessment Period	19-23 Dec 2011		
Scope Details			
1. Scope of Assessment:	IFFO Global Standard for Responsible Supply		
2. Fishery	Redeye round herring		
3. Fishery Location	South Africa		
4. Fishery Method	Purse Seine		
Outcome of Assessment			
5. Overall Fishery Compliance Rating	Medium		
6. Sub Components of Low Compliance	None		
7. Information deficiency	None		
8. Peer Review Evaluation			
<p>The South African management regime from the evidence assessed is robust and provides a solid framework for the management for the pelagic species within this fishery. The scientific evaluations of this stock and associated by catch stock are on-going and are used to inform management decisions on this stock to some extent. However, the annual quota is fixed from year to year and does not take into account fishery removals or biomass estimates. The peer reviewer agrees with the other issues raised by the assessment team, and recognises that although the fishery appears to be developing towards high levels of compliance, at this stage there are several notable non-compliances.</p>			
9. Recommendation		Provisional Approval fishery with conditions	

2. Quality of Information
Good; primarily from South African government websites and publications, and from a preliminary on-site investigation. Also scientific journals and environmental organisation websites.

3. Compliance Level Achieved
Medium; see assessment determination.

Recommendation

Provisional Approval of fishery on the condition that any development of the targeted fishery is accompanied by a development of the species-specific stock assessment and management process
--

4. Guidance for On-site Assessment

Based on High Compliance Findings
--

--

Based on Medium Compliance Findings
--

- | |
|--|
| <ul style="list-style-type: none"> • A preliminary on-site investigation has already been used to inform some aspects of this assessment. |
|--|

Key Stakeholders of the Fishery
--

--

5. Assessment Determination

<p>The South African redeye round herring fishery is widely considered to be underdeveloped, and exists primarily as a subsidiary of the larger anchovy and sardine fisheries. While a precautionary catch limit is set for redeye, the majority of management measures and restrictions affecting the stock are applied at the ‘small pelagic fishery’ level and focussed more specifically on anchovy and sardine.</p>
--

<p>In the opinion of the assessment team, the research available suggests that the current levels of fishing are sustainable, and self-limiting due to the higher commercial value of sardine and anchovy (redeye has never formed more than 30% of the total small pelagic annual catch, and</p>

landings have never exceeded the highly precautionary upper catch limit. In addition, estimated exploitation rates for redeye have not exceeded 6% since 1999).

The management of the similar, but fully-developed, sardine and anchovy fisheries provides an indication of the management regime which could be expected to be put in place as the redeye fishery develops. For this reason, the assessment team recommends the approval of this fishery, based on the condition that future surveillance audits should ensure that any development of the targeted fishery is accompanied by a development of the species-specific stock assessment and management process. Initial moves towards such development have already been begun (e.g. Moor & Butterworth, 2010).

HIGH COMPLIANCE

A1, B1, B2, D1, D2, D3, E1, E2

MEDIUM COMPLIANCE

A2, A3, C1

Background

South African Marine Fisheries

South Africa has a coastline that spans two ecosystems over a distance of 3 623 km, extending from the Orange River in the west on the border with Namibia, to Ponta do Ouro in the east on the Mozambique border. The western coastal shelf has highly productive commercial fisheries similar to other upwelling ecosystems around the world, while the east coast is considerably less productive but has high species diversity, including both endemic and Indo-Pacific species. Marine fisheries in South Africa are diverse, and because of the different ecosystems and irregular coastline, are diversified, both with respect to species caught and gear deployed.

Small Pelagic Fishery

The small pelagic fishery dates back to the late 1940's when a fleet of privately owned purse seine vessels began targeting sardine and horse mackerel. In 1953 an annual maximum catch limit of 270 000 tons was set but was never enforced. As a result, catches regularly exceeded this figure. By 1961, the maximum limit was repealed. In 1962, more than 410 000 tons of sardine were landed, but by 1966, the catch had dropped to 100 000 tons. The fleet then started targeting anchovy, using nets with a smaller mesh size. In 1987 anchovy catches peaked at 600 000 tons, but catches declined thereafter and in 1996 only 40 000 tons of anchovy were landed. Anchovy and sardine catches have subsequently increased, with landings of both species averaging around 250 000 tons each over the past five years.

The pelagic fleet now consists of just over 100 wooden, GRP and steel hulled purse-seine vessels, ranging in length from 15 metres to 30 metres. The industry employs approximately 7 800 people. Of these, 5 300 are employed on a permanent basis and 2 500

on a seasonal basis. The value of fish landed in 2005 was worth approximately R800 million per annum. Most of the catch is processed in 8 fishmeal plants, 6 canning factories and more than 40 bait packing facilities.

Redeye Round Herring

The redeye round herring (*Etrumeus whiteheadi*, also known as Whitehead's round herring) is a common southern African endemic Clupeid which occurs in the southeast Atlantic from Walvis Bay in Namibia to Durban, and has been caught commercially in the pelagic fishery since 1958. Catches have fluctuated between 10% and 30% of the total annual small pelagic catch. Historically this species has not been subject to a targeted fishery, and continues to be landed largely as bycatch in the small pelagic fishery (although is now subject to some targeting). Consequently there is considered by some to be a general lack of literature specifically regarding the redeye round herring.

Redeye round herrings are targeted opportunistically when anchovies and/or pilchards are not present. Consequently they are caught with the same gear as is used for these other small pelagic fish. As a general rule it is the large trawlers that operate with very large purse-seine nets that have the greatest success when it comes to catching this species. Previous attempts to target this species on the South African south coast during the day (when shoals are formed near the bottom), used very deep seine nets and a modified paired stern trawl, however both these methods proved ineffective.

Juvenile redeye are caught as a by-catch in the fishery for juvenile anchovy and sardine inshore on the West Coast, and adults are now targeted between Cape Columbine and Cape Point, somewhat farther offshore, particularly during the first three months of the year. There have been sporadic attempts to exploit the large adults in the Algoa Bay region by both purse-seine and midwater trawl. Some of the catch is canned but the majority is reduced to meal. Relatively recent data obtained from hydro-acoustic surveys suggests that stocks are larger than once thought and that there is scope for the development of a dedicated redeye round herring fishery.

Etrumeus whiteheadi is closely related to the round herring, *E. teres*, and the species are believed to have overlapping distributions in South African waters from Cape Town eastwards.

References: R1, R2, R3

SUMMARY OF LEVEL OF COMPLIANCE					
	The Management Framework and Procedures	Stock assessment procedures and management advice	Precautionary approach	Management measures	Implementation
legal and administrative basis	High Compliance	Medium Compliance	Medium Compliance	Medium Compliance	Medium Compliance
Fisheries management should be concerned with the whole stock unit	Low Compliance	Medium Compliance	Medium Compliance	Medium Compliance	Medium Compliance
Management actions should be scientifically based	Low Compliance	Medium Compliance	Medium Compliance	Medium Compliance	Medium Compliance
Research in support of fisheries conservation and management should exist	Medium Compliance	High Compliance	Medium Compliance	Medium Compliance	Medium Compliance
Best scientific evidence available should be taken into account when designing conservation and management measures	Medium Compliance	High Compliance	Medium Compliance	Medium Compliance	Medium Compliance
The precautionary approach is applied in the formulation of management plans	Medium Compliance	Medium Compliance	Low Compliance	Medium Compliance	Medium Compliance
The level of fishing permitted should be set according to management advice given by research organisations	Medium Compliance	Medium Compliance	Medium Compliance	High Compliance	Medium Compliance
Where excess fishing capacity exist, mechanisms should be in established to reduced capacity	Medium Compliance	Medium Compliance	Medium Compliance	High Compliance	Medium Compliance
Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment	Medium Compliance	Medium Compliance	Medium Compliance	High Compliance	Medium Compliance
A management system for fisheries control and enforcement should be established	Medium Compliance	Medium Compliance	Medium Compliance	Medium Compliance	High Compliance
A framework for sanctions of violation of laws and regulations should be efficiently exists	Medium Compliance	Medium Compliance	Medium Compliance	Medium Compliance	High Compliance

KEY: Low Compliance [Red Box] Medium Compliance [Yellow Box] High Compliance: [Green Box]

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No: 2; Issue Date; Nov 09	Report Ref: SA Red EyE Herring	CCM Code:
---------------------------------	--------------------------------	-----------

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

6. Rationale of the Assessment Outcome

a. The Management Framework and Procedure

LEVEL OF COMPLIANCE	a.i. The management of the fishery must include a legal and administrative basis for the implementation of measures and controls to support the conservation of the fishery.	References	Rating
LOW	<p>Determination: South Africa has in place a robust legal and administrative framework for the determination and implementation of fishery management measures and controls. This framework is applied in the management of the redeye round herring.</p> <p>Legal Basis</p> <p>The legal foundation for the management of South African fisheries, including fisheries for sardine, anchovy and round herring, is the Marine Living Resources Act, 1998 (Act No. 18, 1998) of South Africa, which includes the following overarching goals:</p> <ul style="list-style-type: none"> • achieve optimum utilisation and ecologically sustainable development of marine living resources • conserve marine living resources for present and future generations • apply precautionary approaches in respect of the management and development of marine living resources • utilise marine living resources to achieve economic growth, human resource development, capacity building within fisheries and mariculture branches, employment creation and a sound ecological balance consistent with the development objectives of the national government • protect the ecosystem as a whole, including species which are not targeted for exploitation; • preserve marine biodiversity 	R2, R8, R12	HIGH
MEDIUM			HIGH

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No: 2; Issue Date: Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

	<ul style="list-style-type: none"> • minimise marine pollution • achieve to the extent practicable a broad and accountable participation in the decision-making processes provided for in the Act <p>Administrative Basis</p> <p>The South African fishing industry is managed and regulated by the Fisheries Management Branch (FMB) of the Department of Agriculture, Forestry and Fisheries (DAFF). The FMB is the primary implementer of the Marine Living Resources Act, and its aims include the maintenance and restoration of the productive capacity and biodiversity of the marine environment, ensuring the protection of human health, and promotion of the conservation and sustainable use of marine living resources.</p> <p>The Branch conducts research and monitoring on anchovy, amongst other stocks, including biannual research surveys, manned field stations, and creating Scientific Working Groups (SWGs) to gather state and invited outside specialist scientists to assess the status of the various pelagic stocks. The FMB uses this research to make recommendations regarding management measures, including total allowable catches (TACs) and fishery closures. The specific SWG relevant to the redeye herring stock is the Small Pelagic Scientific Working Group, which provides advice and recommendations to ensure the sustainable utilisation of South Africa's small pelagic fish resources (although does not set a TAC for redeye herring – see section D1).</p>		
	a.ii. Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account fishery removals and the biology of the species	References	Rating
LOW	<i>Determination: Fishery management is concerned with the entire distribution of the redeye herring stock as currently understood. However, population data for the species currently appears not to be directly used in the management process, and as the fishery develops the spawning biomass estimates should be factored</i>	R1, R5, R13	MEDIUM
MEDIUM			

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No: 2; Issue Date: Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

HIGH	<p><i>in more explicitly. The assessment team considers a medium compliance rating appropriate because despite fishery management not taking into account fishery removals or biomass estimates, exploitation rates have been very low for more than a decade.</i></p> <p>The redeye round herring occurring over the continental shelf region from Walvis Bay on the west coast (Namibia) to about the Thukela River on the east coast is considered to be a single stock. Lower water temperatures along the east coast in winter are thought to allow this temperate species to extend its range northwards into the more tropical waters of KwaZulu-Natal. There is a tropical co-generic species, the east coast round herring (<i>Etrumeus teres</i>), found along the African east coast south to Durban, and is thought to overlap distribution with the redeye round herring, potentially leading to confusion in fishery sampling.</p> <p>Although some fishing is carried out by Namibian and international vessels, the large majority of redeye herring landings are by South African vessels. For example, in 2009 the totally global catch, according to the FAO, was around 40,000 tonnes, of which South Africa was responsible for 37,000t.</p> <p>The management of the two main targets in the small pelagic fishery, sardine and anchovy, is designed around the biology of the species. As the targeted redeye fishery is still considered underdeveloped, and information on the species is comparatively limited, fishery removals are not currently factored in to its management. However, landings data is recorded, and total catch is monitored and used to ensure fishing does not exceed the precautionary upper catch limit.</p> <p>The round herring resource in South African waters is currently believed to be under-utilised at present, and attempts at greater exploitation have been encouraged</p> <p>Since June 2008, South Africa has been a member of the South East Atlantic Fisheries Organisation (SEAFO). The objective of the organisation is to ensure the long-term conservation and sustainable use of the fishery resources in the Convention Area through the effective implementation of the Convention. The Convention Area excludes the exclusive economic zones of the coastal states in the region, and so is largely not applicable to the anchovy fishery.</p>	
------	--	--

	<p>The following graph demonstrates the historical exploitation levels of the redeye stock. Since 1999 exploitation has not exceeded around 6%. The Small Pelagic Scientific Working Group (SPSWG) states that this “certainly constitutes no threat to the resource”.</p>																																																										
	<div style="text-align: center;"> <p>Redeye round herring exploitation (Catch in year n/biomass in year n-1)</p> <table border="1"> <caption>Annual catch of redeye round herring since 1985 as a percentage of the biomass measured in the previous November.</caption> <thead> <tr> <th>Year</th> <th>Exploitation level (%)</th> </tr> </thead> <tbody> <tr><td>1985</td><td>48</td></tr> <tr><td>1986</td><td>21</td></tr> <tr><td>1987</td><td>10</td></tr> <tr><td>1988</td><td>12</td></tr> <tr><td>1989</td><td>12</td></tr> <tr><td>1990</td><td>5</td></tr> <tr><td>1991</td><td>8</td></tr> <tr><td>1992</td><td>7</td></tr> <tr><td>1993</td><td>7</td></tr> <tr><td>1994</td><td>10</td></tr> <tr><td>1995</td><td>28</td></tr> <tr><td>1996</td><td>8</td></tr> <tr><td>1997</td><td>16</td></tr> <tr><td>1998</td><td>7</td></tr> <tr><td>1999</td><td>4</td></tr> <tr><td>2000</td><td>2</td></tr> <tr><td>2001</td><td>4</td></tr> <tr><td>2002</td><td>5</td></tr> <tr><td>2003</td><td>4</td></tr> <tr><td>2004</td><td>2</td></tr> <tr><td>2005</td><td>1</td></tr> <tr><td>2006</td><td>2</td></tr> <tr><td>2007</td><td>4</td></tr> <tr><td>2008</td><td>3</td></tr> <tr><td>2009</td><td>2</td></tr> <tr><td>2010</td><td>4</td></tr> <tr><td>2011</td><td>5</td></tr> </tbody> </table> </div>	Year	Exploitation level (%)	1985	48	1986	21	1987	10	1988	12	1989	12	1990	5	1991	8	1992	7	1993	7	1994	10	1995	28	1996	8	1997	16	1998	7	1999	4	2000	2	2001	4	2002	5	2003	4	2004	2	2005	1	2006	2	2007	4	2008	3	2009	2	2010	4	2011	5		
Year	Exploitation level (%)																																																										
1985	48																																																										
1986	21																																																										
1987	10																																																										
1988	12																																																										
1989	12																																																										
1990	5																																																										
1991	8																																																										
1992	7																																																										
1993	7																																																										
1994	10																																																										
1995	28																																																										
1996	8																																																										
1997	16																																																										
1998	7																																																										
1999	4																																																										
2000	2																																																										
2001	4																																																										
2002	5																																																										
2003	4																																																										
2004	2																																																										
2005	1																																																										
2006	2																																																										
2007	4																																																										
2008	3																																																										
2009	2																																																										
2010	4																																																										
2011	5																																																										
	a.iii .Management actions should be based on long-term conservation objectives	References	Rating																																																								
LOW	<p>Determination: Long-term management aims of the fishery are currently limited to ensuring that annual catch remains below 100,000t. However, on-site interviews of government scientists have revealed an intention to develop the management of this fishery along the same lines as other, highly-compliant South African fisheries, and the redeye fishery is likely to score more highly in this section in future.</p>	R7, R8	MEDIUM																																																								
MEDIUM																																																											
HIGH																																																											
	The long-term conservation objectives of the management of the South African small pelagic fishery are set																																																										

		<p>out in the Operational Management Procedure (OMP). The only long-term aim for the current OMP (OMP-08) is to ensure that the total fishing level does not exceed 100,000 tons per year, a conservative estimate of sustainable fishing level given the limited population data available. However, the long-term aims for the primary target species in the pelagic fishery are specific and risk-based, and it is likely that as the redeye fishery develops similar aims will be developed. There is an on-going process to develop a reliable assessment strategy to study the dynamics of the stock, and to test the effectiveness of the PUCL as a management measure.</p> <p>The SPSWG has stated that any expansion of the redeye fishery will be preceded by the development of the small pelagic OMP to explicitly describe redeye management procedures. Additionally, the Ecosystems Approach to Fisheries Scientific Working Group (EASWG) will continue to examine the effects of increased redeye landings on the ecosystem as a whole. The SPSWG anticipates the development of a species-specific stock analysis for redeye in 2012/13, and stated that an immediate revision of the PUCL would be conducted if estimated redeye biomass were to fall below 750,000t (currently estimated at just under 2,000,000t).</p>		
--	--	---	--	--

b. Stock Assessment Procedures and Management Advice

LEVEL OF COMPLIANCE	bi. Research in support of fisheries conservation and management should exist.	References	Rating
LOW	<p><i>Determination: Management of the South African small pelagic fishery is supported by ongoing fishery dependent and annual fishery independent research.</i></p> <p>Fishery dependent:</p> <p>Information collected from pelagic landing sites includes the catch weight, species composition, and catch location (grouped into 10 × 10 mile blocks). Anchovy catch data are used to ensure quotas are not exceeded.</p>	R2, R3	HIGH
MEDIUM			
HIGH			

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No: 2; Issue Date: Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

	<p>Additionally, anchovy catch data and the ratio of juvenile sardine to anchovy as observed in commercial catches during May are both used as input in the operational management procedure in the mid-year determination of the revised anchovy total allowable catch and sardine total allowable bycatch.</p> <p>Catch location data are used to monitor spatial trends in fishing patterns and from those infer distribution patterns of pelagic species. For example, anchovy, round herring and sardine appear to have increased substantially in their distribution ranges between mid- to late 1980s and the 1990s and, since 1997, the average location of sardine catches has shifted further eastwards each year. Additionally, this data may be used in conjunction with other data sources to derive spatial ecosystem indicators such as an index of spatial biodiversity and the exploited fraction of the ecosystem surface for the pelagic fishery.</p> <p>Catch-at-age and weight-at-age data for both anchovy and sardine are generated from age-length keys derived from commercial catch samples, and are required for the stock assessment models. Biological data have been used to construct time series of indicators that characterise the state of the target stock and the fisheries they support.</p> <p>Observers on boats have been deployed in the pelagic fishery since 1999, to provide data relating to catch weight and locality, catch composition, and length frequencies of important species, in addition to collecting some biological data. Observer data has been used to validate catch data (primarily catch weight and species composition) recorded by fisheries inspectors at landing sites, and to compare the fishing behaviour of observed versus unobserved vessels. The most significant gap in the observer data pertains to the low coverage of the pelagic fleet, which is currently around 8% of fishing trips. Permit conditions place the emphasis on vessel owners to ensure that at least 5% of trips have an observer presence. Catch may only be landed in the presence of a fishery control officer.</p> <p>Vessel monitoring systems are presently required on board every pelagic vessel and provide data on location (with a temporal resolution of six hours), but are currently only used for compliance purposes to ensure that vessels do not fish in restricted areas.</p>		
--	--	--	--

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09	Report Ref: SA Red EyE Herring	CCM Code:
---------------------------------	--------------------------------	-----------

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

		<p>Fishery-independent:</p> <p>A hydroacoustic survey programme to estimate pelagic fish biomass was initiated in 1983. These surveys cover much of the continental shelf around South Africa, although the spawner biomass survey has a greater offshore coverage than does the recruitment survey. Annual biomass estimates of anchovy and sardine spawner biomass have been made every November since 1984, resulting in an uninterrupted time series that spans 22 years. The collection of ichthyoplankton samples during spawner biomass surveys permitted estimates of anchovy spawner biomass using the daily egg production method (DEPM), and between 1984 and 1993 concomitant acoustic and DEPM estimates were made which were combined to obtain a single, unbiased measure of population size. The DEPM estimates and acoustic survey estimates for anchovy spawner biomass showed good agreement over a period of ten years, leading to discontinuation of the DEPM due to the additional work load required to produce two essentially similar biomass estimates.</p> <p>Ichthyoplankton data have also been used more broadly to study other life history characteristics of the small pelagic species, such as spawning habitat and nursery areas.</p>		
--	--	---	--	--

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

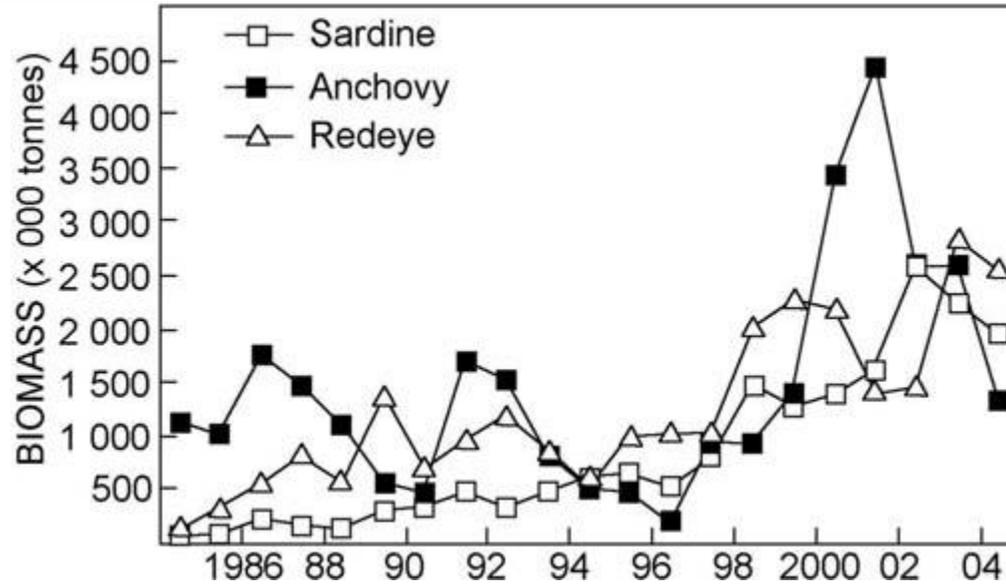


Fig. 1. Time series of fishery-independent data for annual hydroacoustic survey estimates of spawner stock size of anchovy, redeye and sardine, 1984–2005.

LEVEL OF COMPLIANCE	b.ii Best scientific evidence available should be taken into account when designing conservation and management measures	References	Rating
LOW	<p>Determination: Several scientific working groups are involved throughout the fishery management process, and in the opinion of the assessment team the recommendations of these groups are heavily relied upon for the development of management actions.</p> <p>By constituting various scientific working groups, such as the Ecosystems Effects of Fishing Working Group and the Small Pelagic Scientific Working Group, the Fisheries Management Branch ensures that the best available scientific evidence is taken into account when designing conservation and management measures. The scientific working group for the sustainable management of small pelagic resources produces recommendations, including seasonal and sub-seasonal TACs and TABs, and other management measures</p>	R6, R8, R9	HIGH
MEDIUM			
HIGH			

	<p>where relevant. For example, the marine areas around the largest penguin breeding colony in the Eastern Cape (St Croix Island off Port Elizabeth) have been closed to pelagic fishing for several years as a result of scientific advice. These closures are codified in the pelagic fishing permits.</p> <p>Although the quantity of information available for redeye appears to be limited, what information is available is utilised in management decisions, and scientific understanding appears to be fully utilised in the management of the primary target species of the small pelagic fishery.</p>	
--	---	--

c. The Precautionary Approach

LEVEL OF COMPLIANCE	c.i The precautionary approach is applied in the formulation of management plans.	References	Rating
LOW	<p>Determination: South African fisheries policy states the application of the precautionary approach as one of the primary aims. There is little information available on redeye herring specifically, and as a result a highly precautionary catch limit is in place. It is the opinion of the assessment team that given the scarcity of specific scientific information on the species, this approach is satisfactorily precautionary; however there is room for improvement, and a more thorough risk-based assessment should be developed as the directed fishery develops. Initial models are already in development.</p> <p>The Marine Living Resources Act, 1998 includes as one of its recognised principals “the need to apply precautionary approaches in respect of the management and development of marine living resources”.</p> <p>The small pelagic fishery is managed by OMP-08, which performs a risk analysis, which allows results to be expressed as the probability that a defined event will occur (e.g. the biomass falling below a specified threshold level or the fishery collapsing) within a fixed period for the two main target species, sardine and</p>	R2, R5, R9	MEDIUM
MEDIUM			
HIGH			

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No: 2; Issue Date; Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

	<p>anchovy. The lack of information, plus the comparatively small commercial interest in the species, has meant that no such analysis is carried out for redeye herring. However, A 2006 study stated that ‘The present stock control method of setting a Precautionary Upper Catch Limit (PUCL) seems to be a conservative way of protecting a stock that is not very well researched and that forms a portion (up to 30%) of the catch of a large pelagic fishery.’</p>	
--	---	--

d. Management Measures

LEVEL OF COMPLIANCE	d.i The level of fishing permitted should be set according to management advice given by research organisations.	References	Rating
LOW	<p><i>Determination: The level of fishing is limited by a Precautionary Upper Catch Limit, which was recommended and is reviewed by research organisations, and has never been exceeded by the fishery. There is no allocation of quota to vessels, and the level of fishing appears to be largely self-regulating. There appears to be a trend towards increasing catch, and a particular focus of future surveillance audits should be to ensure that mechanisms are put in place to limit fishing effort should the PUCL (or other quota recommendation) be reached.</i></p> <p>At present the redeye round herring is not allocated a Total Allowable Catch (TAC) for each year, rather catches are regulated using a Precautionary Upper Catch Limit (PUCL). The PUCL has been set at 100,000 tons per annum; this is 10% of the conservative estimate of stock size and has never been exceeded since the inception of the fishery in 1958. Figure 2 illustrates annual catch in tonnes between 1958 and 2005; between 2006 and 2010, landings were as follows:</p> <p>2006 – 37,814t 2007 – 53,650t</p>	R2, R8	HIGH
MEDIUM			
HIGH			

	<p>2008 – 66,651t 2009 – 36,989t 2010 – 89,152t</p> <p>Catches of redeye herring have fluctuated between 10% and 30% of the total annual small pelagic catch. Anchovies and sardines are generally preferentially targeted by the fishery, and the fluctuations in redeye catch can be broadly correlated to changes in the Total Allowable Catch (TAC) for these two species. For example, the very high catch recorded in 1997 (92,200 tons) was directly related to increased fishing effort being placed on the redeye round herring because the anchovy TAC for that year was zero. The drop in catches recorded between 1998 and 2005 were as a result of an increase in the TAC for both sardines and anchovies for those years. The PUCL is not allocated to specific vessels, although only vessels with a small pelagic permit may target red eye.</p> <p>On-site assessment has confirmed that if the annual catch of redeye exceeds the PUCL at any time, the entire small pelagic fishery will be closed for the remainder of the season.</p>	
--	--	--

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

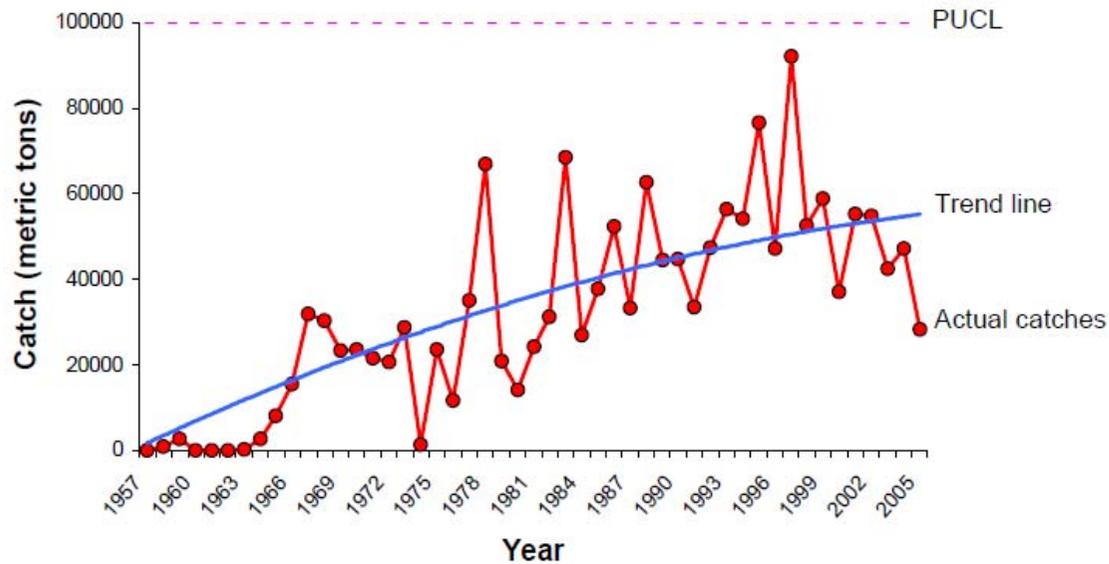


Figure 2. Annual redeye round herring catches in South Africa, 1957-2005 (data from MCM).

As the PUCL has never yet been exceeded, it is uncertain exactly what the management response would be were this to occur. However, the PUCL is written into the fishing permit conditions, and information provided by the client states that if the PUCL is exceeded the entire small pelagic fishery will close. This will be confirmed at the on-site audit during meetings with government officials.

LEVEL OF COMPLIANCE	d.ii Where excess fishing capacity exist, mechanisms should be in established to reduced capacity to allow for the recovery of the stock to sustainable levels.	References	Rating
LOW	<p><i>Determination: South Africa has several mechanisms in place to reduce excess fishing capacity, including the setting of strict, enforced quotas, vessel registering and commercial fishing licences. There is currently not considered to be excess fishing capacity in this fishery.</i></p>	R2, R11, R12	HIGH
MEDIUM			HIGH
HIGH			<p>Any commercial fishing in South Africa requires an annually-renewed license. Commercial fishers are considered to be exercising a fishing right. The right must first be applied for and granted, to exploit, harvest fish or engage in a fishing related activity for trade purposes. It also includes engagement in fishing related and non-consumptive activities. Commercial fishing permits are granted by the Minister of Department of Agriculture, Forestry and Fisheries (or the delegated authority). Full or limited commercial fishing rights are granted in selected fishing sectors based on a Total Allowable Catch or Effort (TAC/E) which is determined annually by the Minister of the Department of Agriculture, Forestry and Fisheries. It is illegal to engage in commercial fishing without a permit. In addition, any vessel which is “used for, or equipped for the management, harvesting and exploitation of living marine resources, or in support of related activities” must be registered with and approved by the DAFF and African Maritime Safety Authority (AMSA).</p> <p>Historically, when anchovy and sardine biomass levels have been low, TACs and TABs have been adjusted accordingly to allow stock recovery, extending as far as the closure of the anchovy fishery in 1997. At present the stock analysis of the redeye stock is insufficient to set annually varying quotas; however the conservative PUCL has never been exceeded, and at present the level of fishing of this stock appears to be self-limiting for economic reasons.</p>

LEVEL OF COMPLIANCE	d.iii Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment.	References	Rating
LOW	<p><i>Determination: Purse-seine nets are not considered to have a major impact on the physical environment. The major bycatch species in the small pelagic fishery (of which redeye herring is one) are subject to quotas, and in any case the fishery is considered highly targeted (within the four main species caught). A detailed and on-going assessment of the impact of fishing on penguin populations is in place; Information provided by government scientists during a preliminary on-site visit suggests that there is no PET bycatch in this fishery.</i></p> <p>Redeye herring are caught using purse-seine nets in the mid-water. This method is preferred for capturing commercially important fish species which aggregate close to the water’s surface, and is not considered destructive to the benthic habitat or species within the benthic habitat. Bycatch in the small pelagic fishery is less than 10 %, due to the dense schooling behaviour of target species and the fishing methods employed. Some reef species traditionally referred to as linefish (e.g. yellowtail, white steenbras and kob) are occasionally caught. The major bycatch species of the directed redeye fishery, anchovy, sardine and horse mackerel are subject to annual quotas. Small pelagic fishing permits set out a detailed plan for regional fishery closures if bycatch exceeds defined minimums, and processor permits prohibit certain gear types to minimise Cape fur seal casualties.</p> <p>Government scientists (from the Small Pelagic Scientific Working Group, SPSWG) have stated that there is no TEP bycatch in the small pelagic fishery. Sealions and seals are scared out of the nets by skippers when they are seen. All landings are monitored by a government official, who completes a pelagic landing report for each vessel. Skippers also complete a report, which must match the monitor’s figures to within 10%. Samples are taken of landings every 30 minutes to check bycatch composition. Excessive bycatch of certain species leads to area closures, as described in the assessment report.</p> <p>Small pelagic fish such as redeye herring are an important part of the food chain in the Benguela Current,</p>	R6, R10	HIGH
MEDIUM			
HIGH			

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

	<p>and as such they are important for the functioning of the ecosystem in the region.</p> <p>It is illegal in South Africa to use any explosive, fire arm, poison or other noxious substance to catch fish.</p> <p>African Penguins</p> <p>The African Penguins are severely under threat and are now considered Endangered by the World Conservation Union. Their populations have decreased by over 90% since the turn of the last century, initially as a result of egg collecting and guano scraping but more recently as a result of competition between man and penguins for a source of food – sardines and anchovies.</p> <p>The Responsible Fisheries Alliance has embarked on a project to better understand the energy requirements of African Penguins at different sites within the penguins’ distribution and at different stages of their life cycle. This new information will contribute to a growing database of information on other dependent predators such as the Cape Gannet. The additional use of logger technology will assist in assessing areas in which prey is caught and where the birds spend the majority of their time at sea. This is critical information needed for the Ecosystem Approach to Fisheries management, as it can be used for modeling different foraging efficiency, food abundance and availability scenarios. With the combined scientific expertise of the parties involved, results and conclusions of this study can be translated into practical solutions to appropriately design and formulate long-term conservation strategies (e.g. Marine Protected Areas) for the African Penguin, and to improve management of fisheries so as to avoid undue competition between man and penguins.</p> <p>As part of the implementation of an ecosystem approach to fisheries (EAF) in South Africa's fishery for small pelagic species, a model of penguin dynamics has been developed for use in conjunction with the small pelagic OMP so that the impact on penguins of predicted future pelagic fish trajectories under alternative harvest strategies could be evaluated. These studies have indicated that to the extent that recent declines in penguin numbers might be linked to lesser availability of pelagic fish for their prey, the decline is more likely a consequence of the eastward shift in the distribution of these fish over the past decade rather than any impact of fishing on their abundance. Thus even with large reductions in pelagic</p>		
--	---	--	--

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No; 2; Issue Date; Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

	catches under an alternative OMP, there would be little benefit for penguins if fish remain distributed primarily off the south coast. However, these were initial results and further modelling that includes new data is currently underway. Additional measures to restrict fishing in close proximity to penguin breeding colonies are also being investigated.	
--	---	--

e. Implementation

LEVEL OF COMPLIANCE	e.i There should be a framework for sanctions of violation of Laws and regulations.	References	Rating
LOW	<p><i>Determination: There is a detailed legal framework for sanctions of violations of laws and regulations by South African fishers.</i></p> <p>A framework of sanctions for violations of laws and regulations is established by the Marine Living Resources Act, 1998 (Act No. 18, 1998) of South Africa, with jurisdiction throughout the South-African EEZ. There are numerous other Acts that add to the marine legislative framework that work in conjunction with the MLRA. These include the National Environmental Management: Protected Areas Act (No. 57 of 2003), the National Environmental Management: Biodiversity Act (No. 10 of 2004), the Maritime Zones Act (No. 15 of 1994), Sea Birds and Seals Protection Act (No. 46 of 1973), Sea Shore Act (No. 21 of 1935) and the Nature and Environmental Conservation Ordinance, (Ordinance 19 of 1974).</p> <p>Sanctions include the suspension or removal of fishing rights, the seizure of gear or vessels, fines of up to 5 million rand (approx. US\$500,000), or imprisonment for up to five years. A detailed list of sanctions is presented in Chapter 7 of the Marine Living Resources Act.</p> <p>The conditions for small pelagic fishing permits include a section detailing the process of sanctions for violations.</p>	R9	HIGH
MEDIUM			
HIGH			

LEVEL OF COMPLIANCE	e.ii A management system for fisheries control and enforcement should be established.	References	Rating
LOW	<p><i>Determination: A management system for fisheries control and enforcement is established. Information obtained during a preliminary on-site visit confirms that the fishery is highly compliant in this section.</i></p> <p>Enforcement is the responsibility of the Fisheries Management Branch of the Department of Agriculture, Forestry and Fisheries. Compliance is maintained through a comprehensive monitoring, control and surveillance strategy, 4 fishery patrol vessel warships and one chase vessel (used for all South African fisheries), officers and vessel monitoring systems. Vessel monitoring systems are presently on board every pelagic vessel and provide data on location (with a temporal resolution of six hours), and are used for compliance purposes to ensure that vessels do not fish in restricted areas. Both the skipper and holder of fishing rights of vessels detected fishing in closed or restricted areas are subject to fines. Fish must be landed in the presence of a Fishery Control Officer, who completes a pelagic landing report for each vessel. Skippers also complete a report, which must match the monitor’s figures to within 10%. Samples are taken of landings every 30 minutes to check bycatch composition. Excessive bycatch of certain species leads to area closures, as described above. Fishing permits also contain restrictions on where fish can be landed.</p> <p>Catch data (detailed in section B1 above) is recorded at landing, and observers are present on approximately 8% of fishing trips. All commercial fishing vessels are required by law to have a license and fishing permit, and all licensed vessels are required to permit observers and fishery control officers on board when requested. Full details of the powers of fishery control officers are set out in Chapter 6 of the Marine Living Resources Act, 1998.</p>	R2, R8, R11	HIGH
MEDIUM			
HIGH			

Global Trust Certification Ltd, Quayside Business Centre, Dundalk, Co. Louth, Ireland Tel: 042 932 0912 Fax 042 938 6864

Issue No: 2; Issue Date; Nov 09

Report Ref: SA Red EyE Herring

CCM Code:

This report shall not be reproduced in full or in part without the permission of Global Trust Certification Ltd.

References

- R1 – FAO species profile, Redeye round herring: <http://www.fao.org/fishery/species/2096/en>
- R2 – South Africa Department of Agriculture, Forestry and Fisheries: <http://www.daff.gov.za/>
- R3 – Hutchings, L. et al, 2009: *Marine fisheries monitoring programmes in South Africa*. South African Journal of Science 105
- R4 – Moor & Butterworth, 2010: Initial Assessment of the South African round herring (*Etrumeus whiteheadi*) resource using data from 1988 to 2010. Provided by Client.
- R5 – Lindsay, 2006: An assessment of the fishery potential for the redeye round herring (*Etrumeus whiteheadi*) in the Eastern Cape:
<http://www.ecdc.co.za/files/documents/Fisheries/Redeye%20study.pdf>
- R6 – Ecological Risk Assessment (ERA) for the South African Small Pelagic Fishery, D.C. Nel, 2005: Provided by Client
- R7 – Final Recommendation of the Scientific Working Group for the Sustainable Management of Small Pelagic Resources for the Season 2011: Provided by Client
- R8 – South Africa OMP-08: Provided by client.
- R9 – South African Marine Living Resources Act, 1998:
http://www.saflii.org/za/legis/num_act/mlra1998256.pdf
- R10 – South African Sustainable Seafood Initiative (SASSI) Sardine and Anchovy Fishery Improvement Project: <http://www.wvfsassi.co.za/?m=9&idkey=1169>
- R11 – South Africa Government services, Applying for a fishing licence:
http://www.services.gov.za/services/content/Home/OrganisationServices/permitslicencesrights/fishingpermit/ApplytoundertakeCommercialFishing/en_ZA
- R12 – FAO fisheries country profiles, South Africa:
ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_ZA.pdf
- R13 – South East Atlantic Fisheries Organisation: <http://www.seafo.org/>