Marine Stewardship Council (MSC) 4th Annual Surveillance Audit

Tristan Da Cunha Rock Lobster Fishery (*Jasus tristani (paulensis)*)

On behalf of the Client

Ovenstone Agencies (Pty) Ltd.

Prepared by the Conformity Assessment Body (CAB)

ME Certification Ltd

DECEMBER 2015

Authors: Dr Jo Gascoigne & Dave Japp

ME Certification Ltd
56 High Street, Lymington
Hampshire, SO41 9AH
United Kingdom
Tel: 01590 613007
Fax: 01590 671573
E-mail: info@me-cert.com
Website: www.me-cert.com

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Glossary

Acronym	Definition
CPUE	Catch Per Unit Effort
MARAM	Marine Resource Assessment and Management Group
OMP	Operation Management Procedures
UoC	Unit of Certification

1 General Information

Fishery name	Tristan da Cunha rock lobster		
Unit of assessment	Rock lobster (*Jasus tristani (paulensis)*) from the islands of the Tristan da Cunha group		
Date certified	20 June 2011	Date of expiry	20 June 2016
Surveillance level and type	Surveillance level 6, on-site surveillance audit		
Date of surveillance audit	26th October 2015		
Surveillance stage	1st Surveillance		
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance		
	Other (expedited etc.)		
Surveillance team	Lead assessor: Dr Jo Gascoigne Assessors: Dave Japp		
CAB name	ME Certification (MEC)		
CAB contact details	Address	56 High Street Lymington SO41 9AH United Kingdom	
	Phone/Fax	+44 (0)1590 613007	
	Email	info@me-cert.com gavin.fitzgerald@me-cert.com	
	Contact names	Kat Collinson Gavin Fitzgerald	
Client contact details	Address	Ovenstone Agencies (Pty) Ltd. Victoria Junction, Prestwich Street, Green Point, Cape Town South Africa	
	Phone/Fax	+27 21 4216169	
	Email	andrew@eurex.co.za	
	Contact name	Andrew James	

2 Background

2.1 General

There have been no general changes to the management system, regulations, personnel involved in the fishery or scientific base of information about the fishery. There have been some specific changes as to how management decisions are made for some of the islands – these are outlined below. TACs and catch for the current and last two seasons for each island are given in Table 1. The conditions and their status are given in Table 2.

Table 1. TAC and Catch Data (provided by Ovenstone)

Tristan Island

TAC	Year	2015-16	Amount	120.0 tonnes
	Year	2014-15	Amount	161.0 tonnes
	Year	2013-14	Amount	165.0 tonnes
UoA share of TAC	Year	2014-15	Amount	161.0 tonnes
UoC share of total TAC	Year	2014-15	Amount	161.0 tonnes
Total green weight catch by UoC	Year (most recent)	2014-15	Amount	132.0 tonnes
	Year (second most recent)	2013-14	Amount	165.9 tonnes

Nightingale Island

TAC (PUCL)	Year	2015-16	Amount	70.0 tonnes with possibility of increase to 75.0 tonnes
	Year	2014-15	Amount	65.0 tonnes
	Year	2013-14	Amount	65.0 tonnes
UoA share of TAC	Year	2014-15	Amount	65.0 tonnes
UoC share of total TAC	Year	2014-15	Amount	65.0 tonnes
Total green weight catch by UoC	Year (most recent)	2014-15	Amount	66.7 tonnes
	Year (second most recent)	2013-14	Amount	66.2 tonnes

Inaccessible Island

TAC	Year	2015-16	Amount	77.0 tonnes
	Year	2014-15	Amount	73.0 tonnes
	Year	2013-14	Amount	70.0 tonnes
UoA share of TAC	Year	2014-15	Amount	73.0 tonnes
UoC share of total TAC	Year	2014-15	Amount	73.0 tonnes
Total green weight catch by UoC	Year (most recent)	2014-15	Amount	74.3 tonnes
	Year (second most recent)	2013-14	Amount	70.9 tonnes

Gough Island

TAC	Year	2015-16	Amount	105.0 tonnes
	Year	2014-15	Amount	100.0 tonnes
	Year	2013-14	Amount	95.0 tonnes
UoA share of TAC	Year	all	Amount	100.0 tonnes
UoC share of total TAC	Year	all	Amount	100.0 tonnes
Total green weight catch by UoC	Year (most recent)	2014-15	Amount	100.9 tonnes
	Year (second most recent)	2013-14	Amount	95.6 tonnes

Table 2. Summary of Assessment Conditions

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	1.2.2	Closed	75	80
2	2.3.3	Closed	75	80
3	3.2.4	Closed	75	80

2.2 Specific changes - Principle 1

Inaccessible and Gough

The Year 2 and Year 3 surveillance reports set out the OMPs agreed for three of the four islands (Tristan, Inaccessible and Gough), as well as the interim harvest control rule for Nightingale (and why an interim rule is required). For the 2015-16 season, the OMP for Gough and Inaccessible operated as predicted, and were used to set the TAC at each island (see Table 1 above). There has therefore been no change in the management system for these islands. In both cases, the standardised CPUE for the 2014-15 season was above the target level set in the OMP, and the OMP rules led to a TAC increase by the maximum permitted 5%. The age-based assessment model was not run for either island in 2015.

Nightingale

Nightingale continues on the post-*Oliva* precautionary management regime (setting a 'precautionary upper catch limit') based on advice from MARAM coming from the age-based model for Nightingale with precautionary assumptions about *Oliva*-related mortality (described in the Year 3 audit report).

The Tristan Fisheries Department and other stakeholders have concluded that significant adult mortality from the *Oliva* is in fact not likely to have occurred. There is, however, some indication from the size-frequency structure in the annual survey catches (Figure 1) and the observer measurements on board the Edinburgh (Figure 2) that there may have been some juvenile mortality, with the potentially impacted size classes now starting to enter the fishery. It had been hoped to develop an OMP for Nightingale during 2015-16 for implementation for the 2016-17 season, but given this ongoing uncertainty, the Fisheries Department has concluded that this is not yet appropriate, since the situation may not yet have stabilised; MARAM noted that trying to take this uncertainty into account in any OMP would make it complex and potentially less robust.

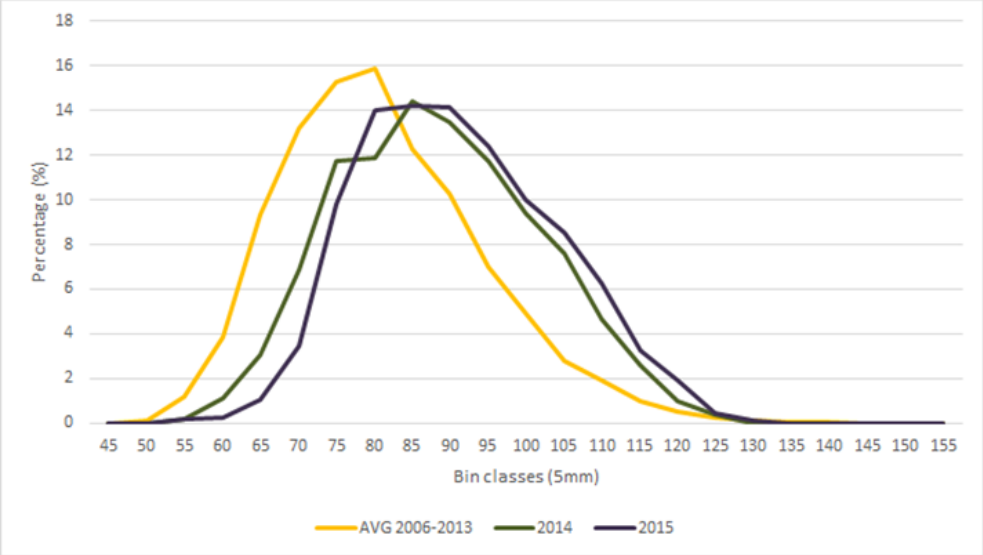

Figure 1. The graph above compares the biomass survey 5mm bin classes from the seasons 2014 and 2015 to the average of the seasons 2006-2013 (plotted by Ovenstone - data from Tristan Fisheries Dept.)

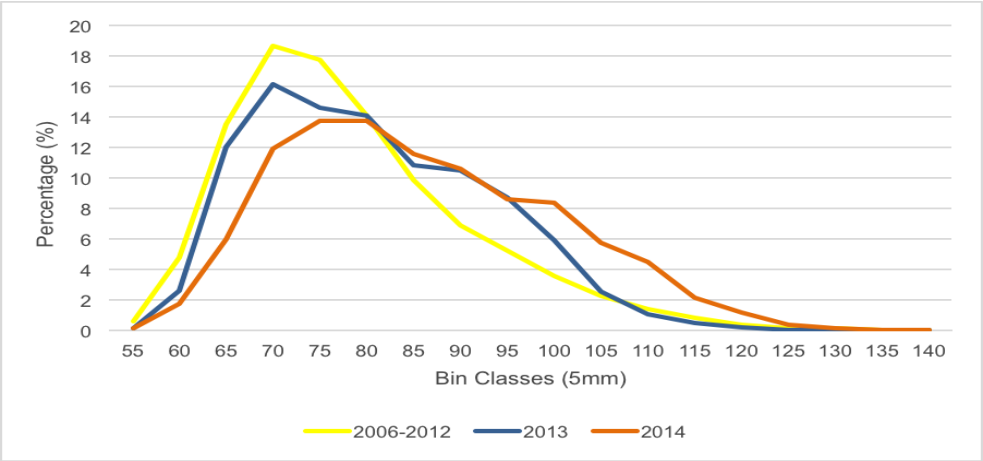

Figure 2. The graph above compares the observer length frequency data in 5mm bin classes from the seasons 2013 and 2014 to the average of the seasons 2006-2012 (plotted by Ovenstone - data from Tristan Fisheries dept.).

Tristan

The OMP was used to set the TAC at Tristan for the 2014-15 season, and led to a maximum 5% reduction in TAC, because the standardised CPUE was below the agreed target level (I_{tar} – average of 2010-2012). During this season, catch rates at Tristan continued to decline (Figure 3), and despite the Edinburgh taking a higher proportion than usual of the catch at Tristan, the full TAC could not be taken. On this basis, and because no 'exceptional circumstance' provision or metarule had yet been developed for the Tristan OMP, the Island Council took the decision in July to overide the OM and

reduce the TAC to 120 tonnes for the 2015-16 season to a catch level deemed appropriate based on their historical experience of the fishery. MARAM evaluated the situation with the CPUE as a result of this decision and concluded that the observed (standardised) CPUEs for the last two seasons were outside the 90% probability envelope of the projections from the development of the OMP (Figure 4) and therefore that this decision was justified.

There is not full agreement between the various stakeholders as to what is driving the low catch rates at Tristan – the Director of Fisheries at the islands is of the view that fishing mortality is part of the problem and that the initial TAC at the start of the OMP should have been set lower, although an analysis by MARAM (Butterworth and Johnston, 2015) suggests that fishing mortality cannot explain most of the decline, which is more likely to relate to a large year class passing into and out of the fishery (Figure 5).

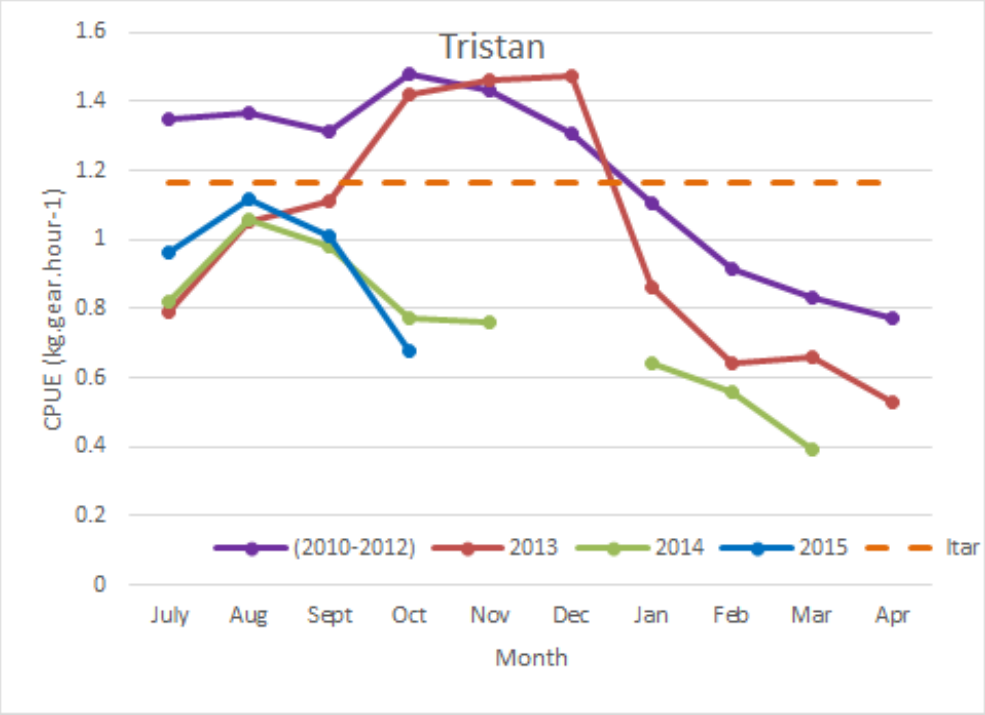

Figure 3. Nominal CPUE at Tristan (powerboats; kg/trap/hour) by month; mean 2010-12 (blue; basis for setting target level for OMP I_{tar}), 2013-14 season (red), 2014-15 season (green) and the first four months of the 2015-16 season (light blue). Plotted by Ovenstone from data provided by Tristan Fisheries Department.

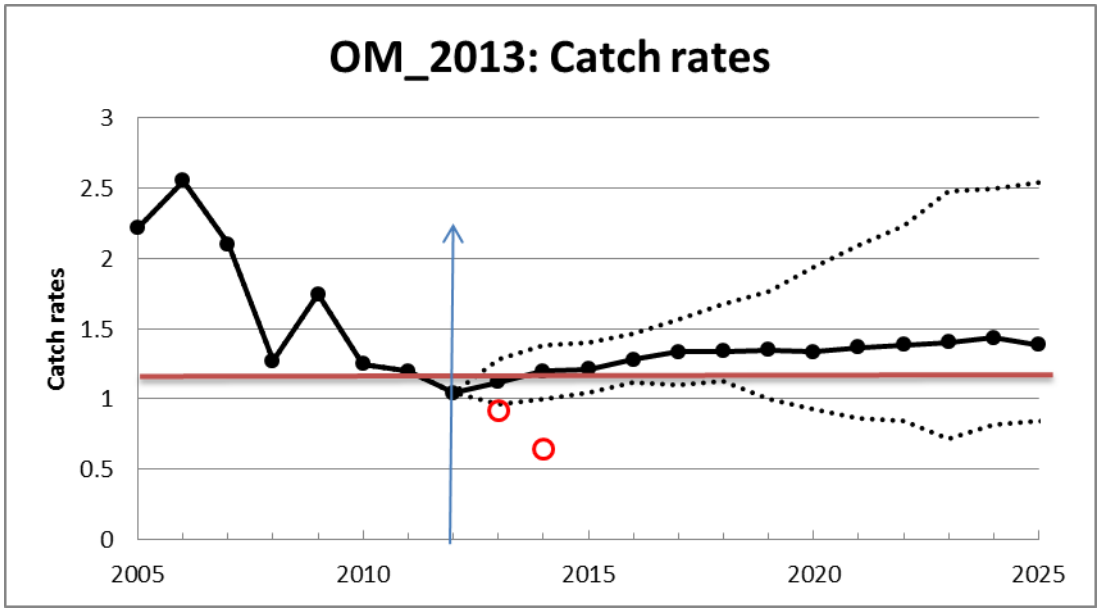

Figure 4. Standardised powerboat CPUE at Tristan: observed (left of blue arrow, red circles) and projected from development of OMP (right of blue arrow) (source: Johnston and Butterworth, 2015).

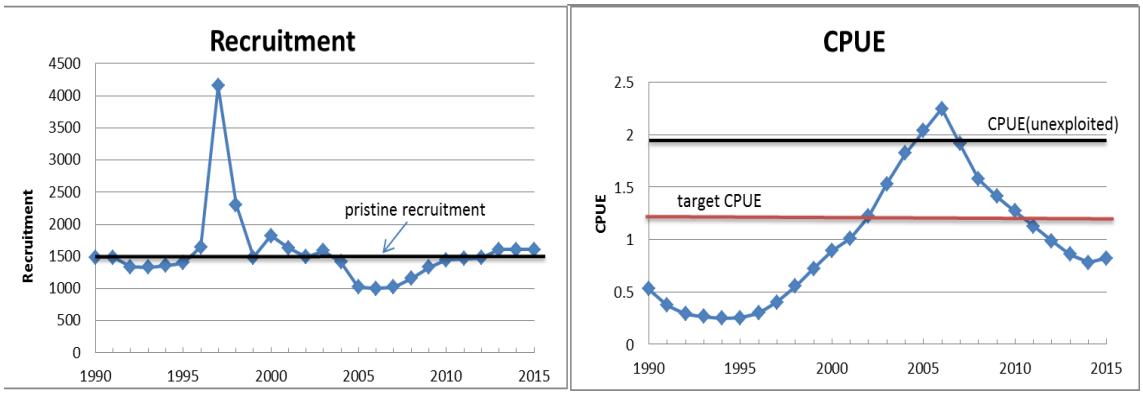

Figure 5. Results of the age-based assessment model for Tristan: left – predicted recruitment; right – predicted CPUE (source: Butterworth and Johnston, 2015).

The decision for next season at Tristan is to bring forward the evaluation of the OMP to this year, and for MARAM to prepare a set of options for a revised OMP for Tristan (to include a metarule and a clear definition of 'exceptional circumstances'), which will form the basis of a decision on a new OMP to be implemented starting in the 2016-17 season. The general structure for the OMP is proposed to be along the lines of the schematic given in Figure 6– i.e. above a given reference level of standardised CPUE (which may be the target, as at Inaccessible, or may be a lower level as at Gough) the change in TAC is limited to 5%; below the reference level the TAC reduction increases linearly with the reduction in standardised CPUE to a maximum possible level of inter-annual variation (foreseen to be of the order of 20-25%).

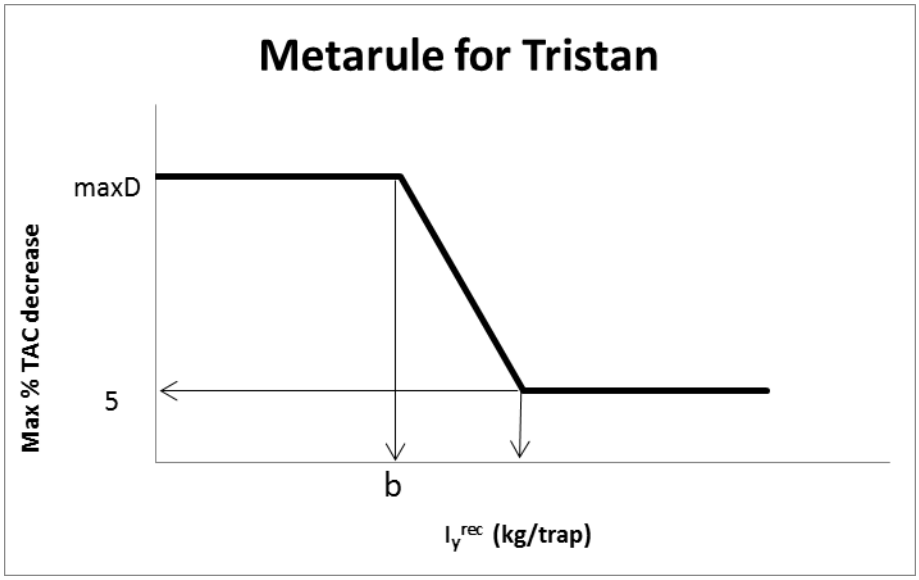

Figure 6. Schematic illustrating maximum interannual change in TAC (increase when above target reference point, decrease when below) relative to standardised CPUE. The target reference point may be set at the level of the right-hand arrow (as at Inaccessible) or at a higher level (as at Gough). Provided by MARAM.

2.3 Specific changes – Principle 2

Octopus retained catch at each island is given in Table 3. There was a big increase in the octopus catch at Tristan in 2014/15, which was related to the fact that the Edinburgh took a higher proportion of the TAC than has been usual, because of the low catch rates from the powerboats as well as bad weather. Not all the octopus caught by the powerboats is landed; some is discarded (alive) or taken by the islanders to use as bait. There are also two species of octopus, one occurring deeper than the other. As the 'Edinburgh' fishes in different areas and in deeper water than the power boats it may account for this increase. The team reviewed these figures and concluded that they did not indicate any particular increase in risk to the octopus population – historically, larger total catches have occasionally been taken and as has been demonstrated in most octopus target fisheries the species have a high growth rate and short life history making them resilient to fishing pressure.

Table 3. Octopus catches at each island, 2008/9 to 2014/15 (kgs; data from Tristan Fisheries Dept).

Fishing season	TRISTAN Total Octopus Catch (kgs)	GOUGH Total Octopus Catch (kgs)	NIGHTINGALE Total Octopus Catch (kgs)	INACCESSIBLE Total Octopus Catch (kgs)	TOTAL ALL ISLANDS Total Octopus Catch (kgs)
2008/2009	3864	1515	2310	5025	12714
2009/2010	4893	420	2115	8475	15903
2010/2011	6061	2295	2175	4395	14926
2011/2012	5372	990	0	4725	11087
2012/2013	6189	1035	480	2715	10419

2013/2014	6430	1005	375	3390	11200
2014/2015	14478	865	937	1750	18030

The crew of the Edinburgh continue to report on all interactions with birds (this is mainly the responsibility of the night watchman, since all interactions occur at night if the vessel is showing lights). A report was provided by the Tristan Fisheries Department (based on the observations of their observers) for the 2014-15 season (given in full in Appendix 1.2). The report notes that the officers and crew are very aware of the issue and that all precautions are taken. There was one significant incident during the season, which occurred because the Edinburgh left some of the crew fishing from powerboats at Nightingale and went to Tristan to pump fuel. This took longer than expected and the vessel arrived back to Nightingale after dark, when it was obliged to switch on deck lights to recover the crew, powerboats and catch. 392 birds in total arrived on board during the time when the lights were on. All were carefully put in boxes and released alive the next morning.

The Fisheries Department noted that the crew still have some difficulties in identifying the birds – out of the 392, 213 were not identified to species. They intend to prepare some laminated identification cards. One stakeholder also noted this as a potential issue.

2.4 Specific changes – Principle 3

No particular changes have been noted in relation to Principle 3; objectives, organisations, roles and responsibilities and consultation processes remain the same. The governance process remains largely unchanged and is as described in the certification report. The Island Council remains the primary decision-making body based on advice from the Tristan Fishery Department, with stakeholder inputs from the *Tristan Fishing Committee* and also inputs and advice from MARAM, the *Tristan Conservation Department* and the *Non-Council Fishing Committee*. It was also noted that the Darwin project has been active in the last year and provides research support and advice on the lobster fishery and ecosystem understanding in general. The assessment team have requested clarity, or documentation that confirms the decision process relating to the cut in the Tristan TAC (overriding of the OMP). The Fisheries Department also provided a letter confirming that they have no compliance concerns in relation to Ovenstone or the fishery (Appendix 1.1). It was noted however that illegal gears (gill nets and lines) had been encountered on a seamount while the Tristan Fishery Department was undertaking an experimental trawl survey (noting that the gear recovered appeared to be old and had not been recently deployed).

3 Assessment Process

3.1 Audit process

This Year 4 audit was an on-site audit, in conjunction with the site visit for the re-assessment of the fishery, since the certificate expires on 19 June 2016. The audit took place in Cape Town from 26-28 October 2015 at the offices of Ovenstone, the concession-holder for the fishery. It had been intended to hold some meetings at the University of Cape Town, but this was not possible because UCT was closed due to student unrest. Stakeholders who were met in person (see below) came to Ovenstone offices; no other requests for meetings were received.

3.2 Surveillance activities

The audit comprised a review of documentation and discussions with stakeholders. Extensive documentation was provided by Ovenstone (on fishing operations, research and other issues), MARAM (the scientific advisors) (updated stock assessments, other data analysis and information on the OMPs for each island) and the Tristan Fisheries Department (research plan, information on compliance and research activities). The following stakeholders were met or provided information by email:

- Andrew James (Director, Ovenstone)
- Dorrien Venn (Director, Ovenstone)
- Rebecca Pieterse (Research and resource management, Ovenstone)
- Doug Butterworth (Emeritus professor, MARAM)
- Sue Holloway (Scientist, MARAM)
- James Glass (Tristan Director of Fisheries)
- Peter Ryan (Percy Fitzpatrick Institute, UCT – email)

The auditors also sat in as observers on a meeting between the Tristan Director of Fisheries, Ovenstone and MARAM where some decisions were taken as to future actions to be taken in the fisheries management system.

3.3 MSC standard

This audit uses MSC standard version 1.3 as a basis for the audit of the fishery, but follows the procedures from version 2.0.

4 Results

4.1 Principle 1

The audit team noted that Condition 1 (transparent harvest control rules) was closed last year because an OMP (or equivalent) was put in place at all the islands – the use of the OMP at Tristan, however, broke down during the TAC setting for the 2015-16 season, because the islanders did not have confidence that it would deal adequately with the low catch rates at Tristan and because the observed catch rates were significantly lower than those predicted by MARAM's analysis.

The audit team considered on this basis whether the condition on setting a transparent and robust HCR should be re-opened for Tristan, since a successful rule is in fact not yet in place. However, the team noted that re-assessment is currently underway, and this will provide a more detailed analysis of all of Principle 1 for Tristan (and the other islands), which it made no sense to pre-empt. PI 1.2.2 has therefore not been rescored for Tristan as part of this audit.

Likewise, the stock at Tristan is below the target reference point (I_{tar}), and has been since 2013. The team considered whether 1.1.1 should be rescored on this basis, but came to the same conclusion.

4.2 Principle 2

Condition 2 related to the reporting of bird interactions on the vessel. This continues to be in place as described above. Good handling practices ensured zero mortality of birds last season. The increase in Octopus catches was also considered and the team agreed that catches of octopus remained defined as "minor" and did not necessitate rescoring. No other significant changes were noted in regard to Principle 2.

4.3 Principle 3

Condition 3 related to the development of a research plan. This is now a "living" document and has been updated again for this audit (Appendix 1.1 The team advised that the research plan could be expanded into a broader Fishery Management Plan in which the Research Plan could be incorporated amongst other elements. No other significant changes were noted in relation to Principle 3.

5 Conclusion

Some concerns have arisen in relation to the HCR at Tristan, but since i) the stock status remains ~consistent with the MSY level (see Figure 5) and ii) the fishery has a plan to get back on track (immediate review of the OMP and re-implementation for the 2016-17 season), the audit team considered that there was no immediate concern in relation to the sustainability of the fishery, and hence that the issue was best dealt with via a thorough review during re-assessment, which is current ongoing.

The audit team concluded that the fishery should remain certified until the certificate expires in June 2016.

6 References

Butterworth, D.S. and Johnston, S.J. 2015. Could the Tristan powerboat CPUE decline have been caused by overfishing? Marine Resource Assessment and Management Group (MARAM). Marine Resource Assessment and Management Group (MARAM). Department of Mathematics and Applied Mathematics. University of Cape Town. MARAM/Tristan/2015/Jun/09

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Appendices

Appendix 1.1. Additional information for the surveillance

Letter from Tristan da Cunha director of fisheries regarding compliance in the 2014/2015 fishing season**.**

Dr. Jo Gascoigne
MacAlister Elliot and Partner Ltd
56 High Street, Lyminton
Hampshire SO41 9AH
United Kingdom

DIRECTOR OF FISHERIES
TRISTAN DA CUNHA
SOUTH ATLANTIC OCEAN
TDCU 1ZZ
(via Cape Town, RSA)
TEL: (44) 020 3014 5013
FAX: (44) 020 3014 5017
Email: fisheriestdc@gmail.com
fishopstdc@gmail.com

10th June 2015

MSC ANNUAL AUDIT OF THE TRISTAN DA CUNHA FISHERY

In relation to Tristan's fourth annual audit for the MSC certification on the 26th - 29th October, I can confirm that Ovenstone have been operating to the concession agreement and according to our licensing requirements.

There have been no incidents or issues of non-compliance since certification, and the Tristan Fisheries Department and the community in general are happy with the way things are going in the fishery. However, the community especially the fishermen are expressing their concern about the falling CPUE at Tristan.

The research plan has again been updated. A Darwin Marine project is still currently underway at Tristan, with biologists working with the Fisheries Department on a contract basis until March 2016, during this time we hope to finalise the research plan going forward.

MARAM's work, which was to look at Harvest Control Rules (HCR) and Operating Management Procedures (OMP) is still ongoing, they are now in place for all islands, except Nightingale. Although, there were no Exceptional Circumstances Rule (EC) in place for none of the islands, hopefully something will be put in place this year for Tristan and discuss in detail for the other islands before or during the Audit later this year.

This fishing season 2014/15 we have been using the new design logbooks for a third season which includes the bird data. One scientific paper written up by the Fisheries Department and Percy FitzPatrick Institute, UCT Cape Town has been produced, and there will be another when enough data becomes available.

Yours Sincerely,

James Glass

Appendix 1.2. Interaction with ETP Species report 2014/15 Season

Seabird mortality in the Tristan rock lobster fishery: The main impact of the fishery for Tristan rock lobster *Jasus tristani* on seabirds at the Tristan archipelago and Gough Island is through night strikes, when petrels collide with the ship after being disorientated by ships' lights. We found that the weather played a big part in the number of birds interacting with the vessel.

The captain and crew of the *M.V Edinburgh* are fully aware of the problem, which usually occurs on misty foggy nights, when the weather changes and vessel has to move anchor to find another lee, and do their utmost to prevent any mortalities.

This brief report summarises bird strikes and resultant mortality caused by the Tristan rock lobster fishery over the last season 2014/15. Due to a paper being written a while ago (Glass & Ryan 2013) there will not be another for several years until enough data is collected for comparison to previous years and any changes to fishing operations.

Tristan sea fishery officers/observers have 100% observer coverage aboard the *M. V. Edinburgh* during all fishing operations. There had been a decline in the number of bird mortalities, and more awareness of the importance in keeping all deck lights off and portholes and windows closed and covered with blinds or curtains. Having the bird data included in the logbooks is also a constant reminder to the night watchman to keep lights to the minimum.

There still appears to be some confusion with seabird identifications reported by fishery observers and night watchman, and it is the intention to have made small laminated books listed with the most common bird species that lands on the vessel for easier identification. This will be done as soon as funding is sourced. Table 1 (below) shows the number of birds and the species that interacted with the vessel during the 2014/15 season and the mortalities.

During this fishing season (2014/15) all Sea Fishery Observers found that during their time spent onboard the vessel that every precaution was taken by all onboard to ensure that there was as less interaction with birds as possible. Any birds found onboard the vessel was dealt with quickly and in a safe manner, with as less stress and harm being caused to the birds as possible. Placed around the vessel there are clear notices informing you of the correct manner to deal with any birds interacting with the vessel.

The one incidence that did happen was at Nightingale on the 13th October, the *M.V. Edinburgh* had left her powerboats at Nightingale fishing whilst she went to Tristan to pump fuel, this took longer than expected and the vessel arrived back at Nightingale after dark (20:20). The deck lights had to be switch on to recover the boats and catch as well as drop anchor (normally all done before dark) this cause a lot of birds (348) to fly blind onto the vessel.

Acknowledgements

The fisheries department would like to thank Clarence October and the crew of the *M.V.Edinburgh* for their continuous support to the fishery observers whilst working onboard.

FISHING SEASON 2013/2014

Table 1.

BIRD SPECIES	TOTAL BIRDS
WHITE-BILLED STORM PETREL *(STORM PIGEON)*	40
WHITE-FACE STORM PETREL *(SKIPJACK)*	56
DIVING PETREL PINNAMIN *(FLYING PINNAMIN)*	12
LITTLE SHEARWATER *(WHISLER,NIGHTHAWK)*	8
SOFT-PLUMAGED PETREL *(LITTLEST WHITEBREAST)*	31
BROAD-BILLED PRION *(WHALEBIRD)*	31
ANTARCTIC PRION	0
ATLANTIC PETREL *(WHITE-BREAST)*	1
SPECTACLED PETREL *(RINGEYE)*	0
KERGUELEN PETREL *(BLUE NIGHTHAWK)*	0
SOUTHERN GIANT PETREL *(NELLIE, STINKER)*	0
PINTADO PETREL (CAPE PIGEON)	0
GRAND TOTAL	392 birds in total, although 213 birds were unidentified in the ships logbooks
MORTALITY & OBSERVATIONS	392 released alive/ 0 Dead

Appendix 1.3. **Updated research plan for the Tristan da Cunha lobster fishery**

Tristan lobster fishery research plan

4th May 2014

1. Research conducted and Data Collected

Fisheries independent surveys: Annual biomass surveys are carried out from the *MV Edinburgh* at each island. These surveys, conducted since 2006, were previously carried out twice per season, prior to the start of the fishing season and after completion of quotas. Fishing 4 transects at Nightingale, 5 transects at Inaccessible and 8 transects at each of Gough and Tristan with each round of fishing. Due to the inconsistent timing of the end of season survey, it was discontinued. The *MV Edinburgh* sets 9 small mesh (50mm) monster traps per line at selected GPS positions and depths along transects perpendicular to the coast at each island. The catch rate information resulting from these transects has now been incorporated into assessments as an additional index of abundance, as well as the size distribution of the catches which, because of the smaller lobsters taken by the small-meshed traps will also give an improved indication recruitment. At a later stage, the planned Management Procedure for the resource will be refined to include these data as well as CPUE as indices of abundance.

Catch monitoring: Commercial CPUE is constantly monitored and all catch and effort data are submitted to MARAM for GLM standardisation before input to assessment models. Future work will attempt stratification at a smaller spatial scale. Approximately 5000 random samples are collected at each island every season to monitor sex ratios and size at maturity with the aim of improving the biological information base on which management is based. This work also provides size composition data which are used as input to the assessment model. In combination these data also provide information on the volume and size composition of discards, which is also taken into account in the assessment model.

Tagging: As part of the remedial action to manage the impact of the *Oliva* casualty, a tagging program was implemented at Nightingale, Inaccessible and Tristan in January 2012. The objective is to collect growth data (currently limited) which will improve the age structured assessment model presently being refined by MARAM. It is the intention to conduct further tagging on a regular basis at all islands. Over time this information will also be input to the assessment model as the recaptures will provide independent information on the magnitude of fishing mortality.

Tagging for the 2014/15 season occurred at all 4 islands.

As part of the Darwin Project, initial studies on tagging mortality and the impact of tagging on the lobster were carried out during the 2014/15 season. Three different types of tags were used in the tests. Results from these initial tests, though conducted on a very limited number of speciments (36 lobster), resulted in a concerningly high mortality rate of the order of 30 %. In addition to the high mortality rate, it was observed that tagged lobster, both from the tank tests and actual recaputres, displayed significant signs of necrosis around the tag. Based upon the tag test results, the following improvements to the tagging protocol will be implemented:

- Sterilisation of tage before application;
- Improved handling of the lobster during tagging;
- Review of positioning of the tag.

Determining the level of tag mortality and impact of tagging on lobster health and growth rate are essential to the utilisation of the tag data for growth and stock assessment work.

Test Fishing: Following the grounding of the *MV Oliva* on 16 March 2011 and the subsequent closure of fishing at Nightingale, the fishery has been closely monitored beginning with a series of test fishing, and trial commercial fishing which has now cease. Given that catches since the 2012/13 season have been excellent, the Fisheries Department reopened the fishery at Nightingale, but adopted a precautionary approach, so the TAC for Nightingale for the 2013/14 season was set at 65 mt.The TAC for the 2014/15 season was maintained at 65 MT, with CPUE remaining elevated well above pre Oliva levels. The setting of the TAC at Nightingale will continue to be closely monitored, until there is a CPUE data series will permit the development of an OMP at this Island that can determine that it is safe to do otherwise.

Juvenile lobster assessment program:

Data collection ETP species: The Tristan Fisheries and Conservation Departments participates in the ACAP process, including on-going collection of data on seabirds and seabird interactions with the fishery a paper -Seabird night strikes and mortality in the Tristan rock lobster fishery, 2010/11-2012/13 was produced in 2013/14. Data recording birds landing on the fishing vessel has been incorporated into the fishing electronic logbooks.

Review of stock assessment and management frameworks for the Tristan da Cunha lobster fishery: The fishery about to undergo Re-assessment by the Marine Stewardship Council (MSC), which will provide feedback on the current stock assessment and management frameworks. The stock assessment is conducted by the Marine Resource Assessment and Management group (MARAM) at the University of Cape Town, with updated assessments presented to the MSC during the reassessment process. Currently the Islands of Tristan, Inaccessible and Gough are managed by OMPs. The Tristan OMP has recently undergone further development to incorporate an Exceptional Circumstance meta rule. It is anticipated that an OMP will be developed and implemented for Nightingale for the beginning of the 2016/17 season.

MRAG have reviewed MARAM's resource management work with the following objectives:1: to examine the stock assessments for each of the islands as they were produced by MARAM.

2: to examine the OMP itself and providing an independent opinion on its suitability as a management framework. The OMP was then given approval by the Tristan Island Council.

2. Objectives

To continue to collect fisheries dependent and independent data for incorporation into the age structured assessment models.

To review and revise target and limit reference points based on on-going scientific assessment and management procedure analyses.

To review the Tristan Lobster management system and the scientific work with the fisheries biologists (Darwin Project).

To formulate a Strategic Development Plan approved by the Island Council that recognises the need for a long term strategy for the management of the lobster resource (to be effected through the development and implementation of Management Procedures) to ensure that optimal social and economic benefits continue to be derived from the fishery.

New electronic fishing logbooks were introduced at the start of the 2013-2014 season, and work well.

3. Research Priorities

Research priorities have been set based upon an analysis of data requirements to fill gaps in the knowledge and management of the fishery. Key areas that have been identified are:

- Tagging and data collection by way of a biological sampling program to improve lobster growth rate assessment, a key input function for the resource modelling work;
- Data collection to improve knowledge of larval settlement and juvenile recruitment.

Based on the above, the research priorities are set out below:

i. To continue commercial fishing operations at Nightingale with caution;
ii. To assess the feasibility of conducting regular juvenile surveys at Nightingale, Inaccessible and Tristan and the usefulness of the data collected, (Darwin Marine Project);
iii. To conduct further tagging at Nightingale, Gough, Inaccessible and Tristan for the on an ongoing basis;
iv. To develop and implement an appropriate Management Procedure for Nightingale and Inaccessible, this season in consultation with stakeholders with the overall objective of maintaining the Tristan Lobster stocks close to the agreed target reference points, agreed by the Tristan Island Council and other stakeholders;
v. To continue with work related to the monitoring of the stock.

Future research/monitoring by the Fisheries Department have now become easier, after the purchase of a 8.5m RIB, although we have not had it operating for a full fishing season yet.

The Darwin Marine project (**Sustainable management of the marine environment and resources of Tristan da Cunha)** is currently underway and will run to December 2015. Having a biologist resident on Tristan is going to help training of islanders in species recognition, dive surveys and monitoring techniques, so building capacity to be better able to respond to any future events which may threaten the marine environment. The main activities of the Darwin funded project are shown in Table 1, of which some overlap with Tristan's lobster fishery research plan.

Table 1: Activities to be conducted during the implementation of the Darwin Marine Project at Tristan da Cunha

Project summary	Measurable Indicators	Progress and Achievements April 2013 - March 2014	Actions required/planned for next period
Goal/Impact The marine and terrestrial environments are managed for the conservation of wildlife and sustained incomes of the local population adaptively and responsively to threats of climate change and man made disasters		(report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity e.g. steps towards sustainable use or equitable sharing of costs or benefits)	
Purpose/Outcome The project will increase our understanding of the functioning of the marine ecosystems of the Tristan islands, and local capacity will be built to take better informed decisions on the sustainable management of the lobster resource and conservation of the wider marine environment, including tackling threats from the introduction of alien species, pollution from shipping incidents and climate change	Tristan da Cunha (TDC) government continues implementing surveys once project is completed in scientifically robust way. Management plan utilised by TDC Government and resource users. Modifications to fisheries management arising from results of project research	In its first 3 months of field operation, the project team have completed the Gough survey which is a major milestone. Efforts will now be made to increase the pool of local divers and train more local people in survey techniques to allow future sustainability. Initial research on the Tristan lobster has started and will be continued.	Review of fisheries data collection and storage carried out Further research on *Jasus tristani* life cycle Further research on other key marine species and habitats, and interactions with lobsters Standard Operating procedures for surveys produced, and confirmation of monitoring methodologies Marine contingency plan refined and training delivered on implementation Training delivered to larger pool of Tristan divers.
Output 1. 1. Information base for sustainable marine and fishery resource management developed	Survey data for the 4 islands presented in reports by mid year 2 Species lists compiled for the 4 islands by mid year 2	The Gough survey has been completed and new survey work undertaken at Nightingale and Tristan. Reports of this work are in preparation, and species lists will be included. This indicator will be met, but it doesn't fully capture the work on *Jasus tristani* being undertaken by the project.	

Activity 1.1 Research on the biology of Tristan lobster (larval and juvenile stages) completed to assist fishery management		Started: monitoring of juvenile lobsters in rock pools at Nightingale and Tristan underway, and pueruli settlement traps constructed and deployed. Lobster diet experiments (laboratory) begun.
Activity 1.2 Status of alien introductions from rig and Oliva wreck established; eradication attempted if feasible		Dive at *Oliva* site completed and photos/video taken; mussels removed. Dive at oil rig is high priority for next period. Status of porgy fish being assessed.
Activity 1.3 Shallow subtidal sites surveyed on Gough by diving (complementing EIDP023 work on "top islands")		Completed – report in preparation.
Activity 1.4 Identification of Tristan marine species by experts is continued and species lists are compiled		Contract for sponge identification let; other samples en route to UK and experts to be identified for further work in the next period.
Output 2. Capacity built for sustainable marine & fishery management	Five Islanders able to undertake marine survey work & complete survey forms, recognise potential alien species by mid year 2	Two islanders participated in the Gough survey and project diving work and are developing good skills. Refresher training is needed for other local divers and is planned for next period.
Activity 2.1 Training provided for a range of islanders in marine survey work, data collection, recognition of potential alien species, as well as building dive experience of local divers.		Training has focused on two members of the Fisheries Department so far, but opportunities are being sought to expand to more local divers. Local research training is being investigated for the next period.
Activity 2.2 Training provided for fisheries officers in data acquisition and processing		Basic training in some loggers and software has been provided, but more is planned for the next period.
Output 3. Capacity increased for marine incident response	Five personnel trained on survey/response following an incident by quarter 1 of year 2 Detailed contingency plan produced and consulted locally by mid year 2	This plan will be developed in conjunction with a plan being developed for oiled wildlife response through a separate project (RSPB-funded). This should be on track for delivery as in the indicators.
Activity 3.1 Detailed contingency plan produced and consulted locally,		Draft contingency plan for introduced species in the marine environment will be refined and expanded in the next period.
Activity 3.2 Local personnel trained on survey/response following a future incident		Not started – will be begun in the next period.

Output 4. Capacity to assess effects of climate change in the marine environment enhanced	Methodology developed and tested by End of Project Five islanders trained in the implementation of the methodology by End of Project	Establishing monitoring sites is at an early stage ,as is assessing potential methods that will be easy for the local team to repeat. The indicator still seems appropriate.
Activity 4.1 Toolkit and methodology developed and tested to monitor the impact of climate change on the marine environment.		Assessment of potential monitoring sites and methods has begun; suitable monitoring sites have been identified on Gough and Tristan. Developing the toolkit and methodology will be progressed in the next period.
Activity 4.2 Training of selected islanders involved in marine survey work		Basic in-water training has been provided to two local divers (as above); this will be expanded in the next period.
Output 5. Marine management plan developed for Tristan da Cunha	National workshops well attended by all local stakeholders including scientific, conservation, fisheries and general public. External consultation process completed by End of Project Management plan document completed by End of Project	This work is yet to start and will commence in the final year of the project; all information collected by the project team will feed into the marine management plan. The indicator seems appropriate.
Activity 5.1. National workshop organised and held to develop management and zonation plan for the marine environment that draws together previous and ongoing data and studies		Not started yet.
Activity 5.2. Consultation process with external marine experts in the UK		Not started yet.