



**Surveillance Report
New Zealand Hoki Fishery**

Certificate No.: **MML-F-030**

Intertek Moody Marine

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Authors: J Akroyd, J Pierre, A Punt

Intertek Moody Marine

Merlin House
Stanier Way
Wyvern Business Park
Derby. DE21 6BF
UK
Tel: +44 (0) 1332 544663
Fax: +44 (0) 1332 675020

1.0 GENERAL INFORMATION

Scope against which the surveillance is undertaken: MSC Principles and Criteria for Sustainable Fishing as applied to the NZ Hoki Fishery

Species: Hoki (*Macruronus novaezelandiae*)

Area: New Zealand EEZ, HOK1

Method of capture: Trawl Fishery

Date of Surveillance Visit:	Nov 13 -18, 2011			
Initial Certification	Date: March , 2001		Certificate Ref: MML-F-030	
Surveillance stage	1st	2 nd	3rd	4th
Surveillance team:	Lead Assessor: J Akroyd (P3) Assessor(s): A Punt (P1), J Pierre (P2)			
Company Name: Address:	Deepwater Group Ltd 98 Vickerman Street P O Box 1460 Nelson New Zealand			
Contact 1	George Clement, CEO			
Tel No: Fax No: E-mail address:	+ 64 3 545 7020 + 64 3 545 7021 clement@fishinfo.co.nz			

2.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This report contains the findings of the fourth surveillance cycle in relation to this fishery.

The client's response to the Conditions of Certification was set out in an Action Plan, which was appended to the final certification report. Progress on this was examined as a part of this fourth surveillance. For the remaining condition, this report sets out progress to date and associated information as supplied by the client and stakeholders. This progress and information has now been evaluated by the Intertek Moody Marine assessment team ('Observations' and 'Conclusion') against a) the commitments made in the Action Plan, b) the intent of the original Condition and c) the original scoring indicator, guideposts and commentary. The influence of any overall legislative and management changes in the fishery are also taken into consideration.

Information regarding this year's audit has been collected principally from reports provided by the client and directly from the Ministry of Fisheries (MFish) Deepwater, Science and Compliance teams, Department of Conservation, NIWA and from the eNGOs. Consultations were undertaken with the Ministry of Fisheries, Department of Conservation, WWF, Royal Forest and Bird, NIWA (research provider), Dragonfly (research provider), NZ Seafood Industry Council and industry representatives. Other organisations (ECO, Greenpeace, and Environmental Defence Society) were also invited to contribute. WWF and Royal Forest and Bird requested to submit comments post the audit site visit. These were received (26th November 2011), and have been taken into consideration in the preparation of this audit report.

The NZ Hoki fishery was originally certified in March 2001 by SGS and was then subject to a full sequence of surveillance audits. Prior to expiry of the original certificate, the fishery was reassessed by SGS. The client at the time was the Hoki Fishery Management Company Ltd. The reassessment of the fishery gave rise to objections which were resolved through the MSC's Objection Procedures. As the objection procedures took some time to resolve, an extraordinary surveillance audit took place in August 2007. The fishery was reassessed and recertified in November 2007, again by SGS.

In early 2006, the client (the Deepwater Stakeholder Group Ltd, since renamed the Deepwater Group Ltd, DWG) produced an Action Plan for meeting Conditions of Certification that was accepted by the SGS assessment team.

Following recertification, the client then decided to transfer the contract for surveillance audits to Moody Marine Ltd (MML), since renamed Intertek Moody Marine (IMM). In accordance with MSC Tab Directive 12, the SGS certificate was replaced by a MML certificate at the agreed transfer date (12 September 2008).

MML carried out the first annual surveillance audit in October 2008 and a second annual audit in November 2009.

The second annual surveillance audit determined that the requirements of the Conditions of Certification numbers 1,3,4,5,7,8,10,11 and 12 had been fully met at that time and these nine Conditions were closed.

The closure of these Conditions resulted in the ten relevant PIs being rescored at 80 or more. Three Conditions remained open.

The third annual surveillance report, carried out by MML in December 2010, closed two Conditions (Condition 2 Stock Rebuilding Strategy and Condition 9 Management Plan), leaving only Condition 6, Levels of Acceptable Risk, open.

The fourth annual surveillance was carried out 13-18 November 2011. The team evaluated progress against the remaining Condition, any potential or actual changes in management systems, any changes or additions/deletions to regulations, any personnel changes in science, management or industry to evaluate impact on the management of the fishery and, any potential changes to the scientific base of information, including stock assessments.

During the on-site surveillance the Intertek Moody Marine assessment team actively sought the views of the client and stakeholders about the fishery, its performance in relation to the remaining Condition of certification and issues relevant to the MSC's Principles and Criteria for Sustainable Fishing.

To verify that progress in meeting the remaining condition the assessment team examined relevant objective evidence and, following that examination, re-scored all relevant Performance Indicators (PIs) against the relevant Scoring Guideposts (SGs).

The score was raised above 80 for all three relevant PIs and consequently the Condition is now closed. The rationale for the re-scoring and closing out of the Condition is documented in this Surveillance Report.

Three recommendations have been made:

- 1 That DWG ensure the Ecological Risk Assessment (ERA) process continues, and that continuation should include:
 - regular review of assigned risk levels, with respect to new information that becomes available
 - progressing information-rich taxa and impacts to Level 2 risk assessment processes, except seabirds which have already been considered (Richard et al. 2010),
 - developing quantifiable fishery management objectives against which risks can be assessed, ultimately probabilistically
 - developing and implementing appropriate management and/or other actions that address consequences identified as unacceptable by the ERA Panel. (Note that the Panel agreed that the boundary between acceptable and unacceptable consequences lay between scores of 2 (moderate) and 3 (major), for all ecological categories assessed).
- 2 That work continues on ecosystem effects of the hoki fishery, and that continuation should include:
 - evaluating currently available indicators to determine their efficacy in monitoring the effects of fishing
 - selecting meaningful headline indicators through which ecological effects of fishing can be assessed
 - monitoring these indicators to assess fishery impacts on ecosystems
 - developing appropriate fishery management responses where ecosystem issues of concern are identified.
- 3 That work continues on benthic impacts of the hoki fishery, and that continuation should include:
 - maintaining up to date maps of the overlap between trawl tracks and BOMECEC (or other appropriate) habitat classification
 - using other relevant information, in addition to BOMECEC, for future considerations of benthic effects and how to manage these, including spatial measures.

Assuming the fishery is successfully re-certified progress on the above will be reviewed at the next annual surveillance audit.

WWF and Forest and Bird raised issues about Conditions that had been previously closed. In this report the Surveillance Team has investigated these and, where appropriate, has made recommendations to address some issues.

However no new significant information was assessed to be such that previously closed Conditions should be revised or that any new Conditions should be introduced at this point in time.

Information Sources:

Meetings (NB all stakeholders from main assessment were contacted prior to the surveillance audit taking place)

Date	Organisation
Mon 14	Ministry of Fisheries Deepwater Team
Mon 14	Ministry of Fisheries Science Team
Mon 14	several NGOs (WWF, R Forest and Bird)
Tue 15	Seafood Industry Council
Tue 15	NIWA- Research providers
Tues 15	MFish Compliance
Wed 16	Deepwater Group - Fishing industry
Thu 17	Department of Conservation
Thu 17	Dragonfly - Research providers
Thu 17	Boyd Consultants, ERA Facilitator

Reports etc

All reports are available on the Deepwater group website. www.deepwatergroup.org

Hoki, Fishery Assessment Plenary Report for 2009.

Hoki, Fishery Assessment Plenary Report for 2010.

Hoki management measures for the 2011-2012 fishing year: final advice paper.

Review of Sustainability Measures and Other Management Controls for Hoki (HOK 1) Initial Position Paper July 2011

Submissions received on the Review of Sustainability Measures and Other Management Controls for Deepwater Fisheries – September 2011.

Heatly, P. 2011. Minister's Decision letter for the 2011/12 fishing year.

McKenzie, A. 2011. Alternative catch projections for hoki in 2011. Note to Aoife Martin (MFish) 10th May 2011 2pp.

Stokes, T.K. 2011. Considerations relevant to 2011 hoki TACC options. Attachment to the Sanford Limited Submission.

Standards and Guidelines used:

1. MSC Principles and Criteria
2. MSC Certification Requirements v1.1 24 October 2011
3. MSC Fishery Certification Methodology Version 6.1 September 2006

Item	Comments
1	Stock status and Catch Data
Update on Sock Status	<p>The hoki TACC for 2010-11 was set at 120,000t, 10,000t larger than the TACC for 2009-10, and 30,000t larger than the TACCs for 2007-08 and 2008-09. This TACC increase was selected so that the spawning biomass and fishing intensity for both stocks remain within the target ranges. 2009-10 was the last year for which data for the entire season were available for inclusion in the 2011 stock assessment, although provisional catch data for 2010-11 were available for the audit. The estimated catch during 2009-10 was 2,800t below the TACC. An agreed arrangement between industry and the Minister of Fisheries to manage catches within agreed limits from each of the eastern and western stocks has been in place for several years. DWG revised its procedures to keep the catches by stock within the agreed limits for 2009-10. The catches for the western and eastern stocks during 2009-10 (48,900t, and 58,300t) were both within the catch limits for the western and eastern stocks (50,000t, 60,000t respectively), unlike the situation for 2008-09 when the actual catch exceeded the intended catch from the western stock. The total reported catch for 2010-11 was 118,719 t which was less than the 124,667 t of ACE available (the TACC for 2010-11 plus ACE carried forward from 2009-10). The provisional estimated catches for 2010-11 from the eastern and western stocks (from MFish records on 15 November 2011) were 55,138 t and 60,610 t respectively. The New Zealand Quota Management System provides owners of ACE the right to carry forward up to 10% of their uncaught ACE holdings at the end of the year. Accordingly, while the 2010-11 catch from the western stock exceeded the catch limit of 60,000 t, because there was a carry-over from 2009-10 of approximately 2,000t of western ACE, catches were within the agreed catch allowance.</p> <p>The 2011 assessment was an update to the 2009 and 2010 assessments, with the only major difference between the 2011 and previous assessments being the inclusion of data collected since the last assessment. The 2011 assessment was based on the stock assessment package CASAL, and again involved a two-stock population dynamics model fitted using Bayesian methods. The new data included in the 2011 assessment were the results of a trawl survey on the Chatham Rise, and proportion-at-age data from the survey and the fisheries. Unlike previous assessments in which two or more indices of abundance have become available, new data from only one survey were available for the 2011 assessment. The trawl survey in the sub-Antarctic area did not take place in December 2010 because the vessel returned to New Zealand too late to undertake the survey at the required time, due to delays during a refit in Singapore. Although hoki from both stocks are assumed to be surveyed on the Chatham Rise, this survey is primarily a survey of juvenile hoki and of eastern stock adult hoki. Consequently, there was less new information on abundance trends for the western stock for the 2011 assessment than in previous years.</p> <p>The 2011 assessment reported spawning biomass relative to various management reference points (e.g. B_{MSY}, and the Management Target range of $0.35B_0$ to $0.5B_0$) and reported fishing intensity as the maximum over age of the ratio of the total catch in numbers to the population numbers. Fishing intensity was reported again along with two fishing intensity-related reference points (those corresponding to spawning biomasses of $0.35B_0$ and $0.5B_0$).</p> <p>The final 2011 assessment results were based on one base model run (run 1.1), and three sensitivity runs (1.2, 1.8 and 1.9). The 2011 model specifications for runs 1.1 and 1.2 were identical to those for models 2.1 and 2.2 from the 2009 and 2010 assessments, and represent different ways of dealing with the unexplained lack of older fish in commercial catches and surveys (age-specific natural mortality or dome-shaped selectivity). The 2011 assessment also reported results from two sensitivity</p>

tests (runs 1.8 and 1.9) which aimed to address the inability of the model to mimic the large increase in the biomass estimates from the trawl survey in the sub-Antarctic area by postulating changes in survey catchability.

The two stocks are estimated to be essentially the same fraction of their unfishable levels in 2011 as was the case in 2010 (Table 1). There is a very high probability (>0.99) that both stocks are above both the soft limit of $0.2B_0$ and the B_{MSY} values estimated under the assumption of deterministic dynamics ($0.24B_0$ and $0.25B_0$ for the eastern and western stocks respectively). The probability that the western stock has recovered to the lower end of the Interim Management Target ($0.35B_0$) is > 0.90 for the base case model run (1.1). In addition, there is a greater than 0.5 probability that the eastern stock is above the upper end of the management target range ($0.5B_0$). The 2011 fishing intensity is estimated to be equal to (western stock) or lower than (eastern stock) that corresponding to $0.5B_0$. Figure 1 summarizes the 2011 assessment results in the form of Kobe plots.

A key uncertainty in the last several assessments has been the inability to mimic the biomass estimates from the trawl survey in the sub-Antarctic area. The contribution of these data to the likelihood was again upweighted in model runs 1.1 and 1.2 to force the model to fit these data better (to the extent this is possible). Reasons explored during the 2010 and 2011 assessments for the inability of the standard model to mimic these data was that catchability for this survey changed during the period 2003-07 or during the period 2008-10. These sensitivity tests (model runs 1.8 and 1.9) estimated both hoki stocks to be within the management target range and led to better fits to the data even when the trawl survey biomass estimates for the sub-Antarctic area were not upweighted.

Five-year constant catch projections for the eastern and western stocks were undertaken under two assumptions regarding future recruitment: 'long term' (future recruitments are drawn at random from those estimated for 1975-2009) and 'recent' (future recruitments are drawn at random from those estimated for 1995-2009). These projections show that stock size will be above the upper end of the management target ($0.5B_0$) in five years (2016) in median terms under the current TACC (120,000 t) as well as under a TACC of 130,000t for both recruitment scenarios, including the more pessimistic 'recent' recruitment scenario. Projections under both recruitment assumptions were also run for both stocks assuming a future TACC of 140,000t. These projections showed that stock size will be within the management target range ($0.35-0.5B_0$) in 2016.

Two options for the TACC for 2011-12 were proposed by MFish for discussion (the status-quo of 120,000t and an increased TACC of 130,000t). Although projections estimated that TACCs higher than 130,000t would result in the stock sizes remaining within the target range ($35-50\%B_0$) over the next five years, MFish did not propose a TACC increase larger than 10,000 t for 2011-12.

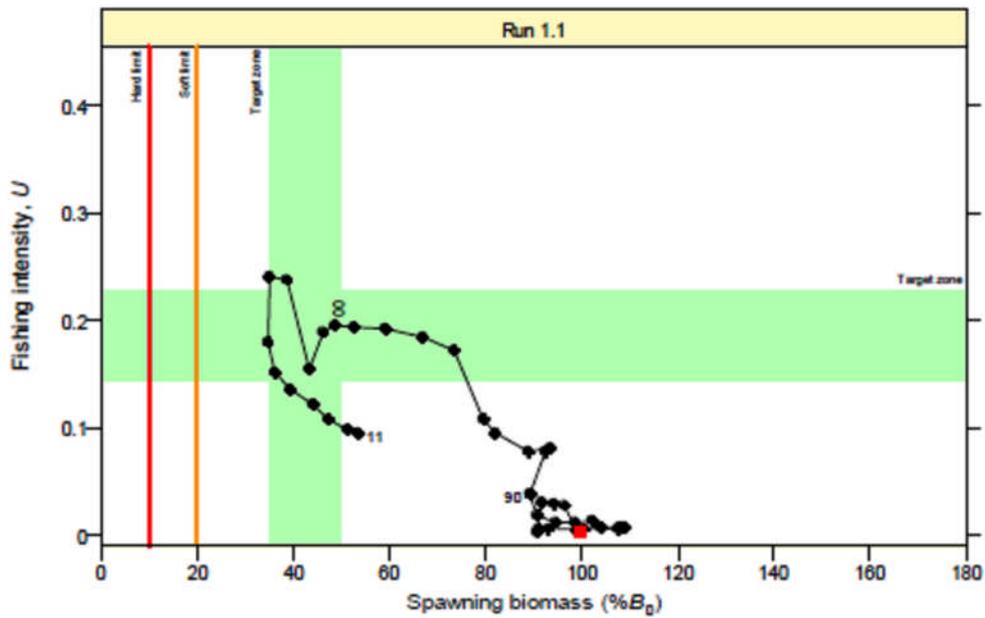
A range of stakeholder comments were received on the options. The biological (rather than economic) reasons provided by stakeholders for not increasing the TACC included (a) the lack of abundance data for the western stock, (b) retrospective patterns in year-class strength estimates, (c) uncertainty regarding recruitment, (d) the lack of a model that allows for annual variation in the proportion of fish that move from the Chatham Rise to form part of the western stock, and (e) the contacting age-structure for the western stock as suggested by the sub-Antarctic survey. All of these factors suggest taking a cautious approach. The influence of points (b), (d) and (e) need to be considered during the next assessment to assess their quantitative impact, while point (c) is likely to be an ongoing concern for this and all fisheries of stocks

	<p>with considerable recruitment variation and where recruitment is driven by environmental factors that are themselves auto-correlated. The lack of a biomass survey in 2010 to extend the biomass index for the western stock is a particular concern, although this is likely to be addressed in coming years, given the research trawl survey schedule that has been contracted through the 10-Year Research Plan for Deepwater Fisheries. The next hoki biomass survey in the sub-Antarctic area is being undertaken in December 2011, and the results will be incorporated into the 2012 stock assessment for hoki.</p> <p>The projection results predict that an increase in TACC is consistent with the overall management strategy. The five-year projections (using both recruitment assumptions) also showed that a TACC increase of 20,000 t would also maintain stock size above the lower limit of the management target range through to 2016. This indicates a high probability that a smaller increase of 10,000 t is unlikely to lead to sustainability problems.</p> <p>Given the strong reliance on projection results, analyses to examine the retrospective ability to make forecasts seems warranted.</p> <p>The Minister of Fisheries decided to increase the TACC from 120,000t to 130,000t for 2011-12, with the requirement that 70,000t will be taken from the western stock and 60,000t from the eastern stock.</p> <p>The assessment remains state-of-the-art. However, as noted in the last audit report, recent assessment documents contain less detailed information than previous documents. This audit also repeats the suggestion from 2010 audit that it would be beneficial for the review process for the annual assessment documents to be as self-standing as possible and that it may be appropriate to consider an in-depth (preferably external) review of the hoki stock assessments. MFish (Science) indicated that an external review of the hoki assessment may take place during 2011-12, which could also consider a review of the biological parameters for hoki.</p> <p>WWF note that the increase in the TACC is likely to lead to higher effort levels which is likely, all things being equal, to lead to higher catches of retained and bycatch species, as well as to higher marine mammal and seabird mortalities. WWF note that whether the increased TACC will lead to greater impact on the benthos depends on whether the additional effort is focused in the historical footprint or not. Future surveillance audits will examine the consequences of any increased effort in relation to impacts on habitat, retained and bycatch species as well as on seabird and marine mammal mortalities.</p>
Total TACC in most recent fishing year	120,000t in the 2010-11 fishing year (Commencing 1 October 2010)
UoC share of TACC	100%
Client share of TACC	94-96%
Green Weight of catch taken by client group	<p>Catch 2009-10 fishing year was 107,208 t</p> <p>Catch 2010-11 fishing year was 118,720 t</p>

Table 1. Estimates (posterior medians) of spawning biomass in the most recent year (percentage of B_0) from the 2007, 2008, 2009, 2010 and 2011 assessments (“current year” is 2007 for the 2007 assessment, is 2008 for the 2008 assessment, is 2009 for the 2009 assessment, is 2010 for the 2010 assessment, and is 2011 for the 2011 assessment). The values in parenthesis are 95% probability intervals.

Assessment year	Run Number	Stock	
		Eastern	Western
2007	4.4	46 (37,54)	20 (12,32)
2008	2.3	45 (38,52)	28 (20,48)
2009	1.1	47 (40, 56)	36 (27, 53)
2010	2.1	51 (43, 60)	40 (33, 53)
2011	1.1	53 (45, 63)	41 (32, 56)
2007	4.5	37 (30,48)	24 (19,31)
2008	2.4	42 (34,50)	30 (25,37)
2009	1.2	49 (40, 59)	39 (32, 49)
2010	2.2	57 (47, 70)	52 (42, 63)
2011	1.2	56 (45, 68)	55 (44, 67)

(a) Eastern stock



(b) Western stock

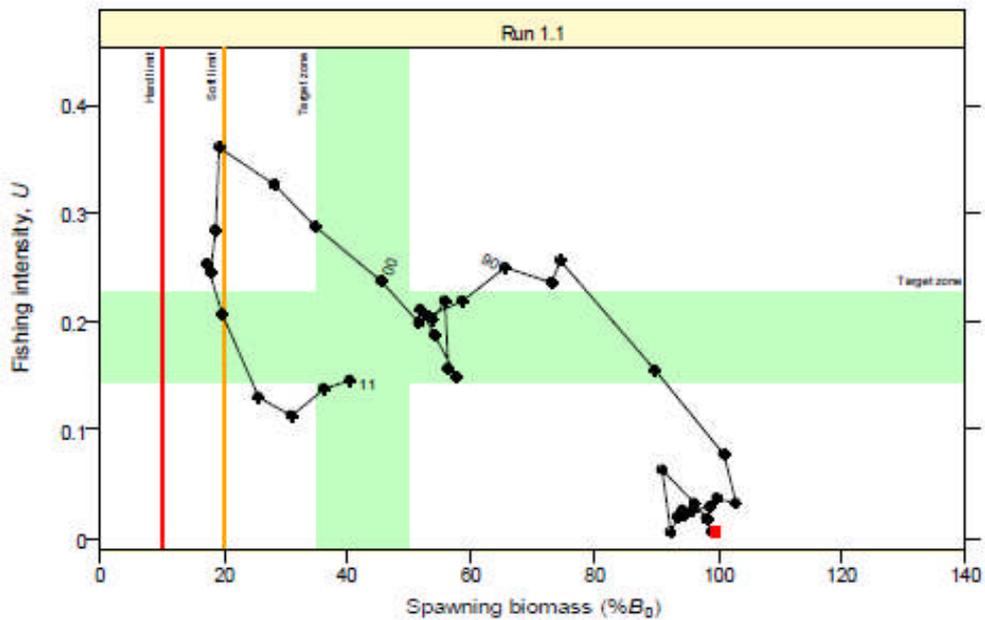


Figure 1. Trajectories over time of fishing intensity (U) and spawning biomass ($\%B_0$), for (a) the eastern stock and (b) the western hoki stock from the start of the assessment period in 1972 (represented by a red square), to 2011. The vertical line at $10\%B_0$ represents the hard limit, that at $20\%B_0$ is the soft limit, and the shaded area represents the interim management target ranges for biomass and fishing intensity. Biomass estimates are based on MCMC results, while fishing intensity is based on corresponding MPD results. Reproduced with permission from the 2011 assessment plenary report.

Item	Comments
2	Condition of Certification 6: Levels of acceptable risk and impact
Activity assessed	<p>PI 2.1.3.1. Are levels of acceptable impact determined and reviewed?</p> <p><i>SG 60:</i> Levels of acceptable impacts for the main non-target species and habitats in the fishery have been estimated at least qualitatively.</p> <p><i>SG 80:</i> Risks and acceptable levels of impact have been determined through a robust peer reviewed scientific risk assessment process that takes a precautionary approach to gaps in knowledge and involves the relevant range of ecological expertise and stakeholders. Levels of acceptable impact caused by the removal of the target species, at key life stages, on the main species of prey and predators of the target species are being determined. Research is underway to study impacts related to, and refine the assessment of, any medium level risks and the main gaps in knowledge.</p> <p><i>SG 100:</i> Levels of acceptable impact caused by the removal of the target species, at key life stages, on the main species of prey and predators of the target species have been determined.</p> <p>The risks and acceptable levels of impact have been determined through a robust peer reviewed scientific risk assessment process that takes a precautionary approach to gaps in knowledge and involves the relevant range of ecological expertise and stakeholders. Research is underway to study impacts related to, and refine the assessment of, any medium level risks and the main gaps in knowledge. The assignment of acceptable levels of impact is subject to regular review.</p> <p>PI 2.1.4.1. Are the impacts of the fishery on ecosystem structure, function, biological diversity, and productivity within acceptable levels?</p> <p><i>SG 60:</i> The main impacts of the fishery are generally considered to be within acceptable levels.</p> <p><i>SG 80:</i> The effects of removal of the target and non target species, and impacts and productivity, are generally maintained within acceptable levels for the most important parameters (as established in 2.1.3.1).</p> <p><i>SG 100:</i> The effects of the fishery on the ecosystem have been quantified in all areas where the fishery operates, and impacts are found to be always maintained within acceptable levels for all the most important parameters.</p> <p>PI 2.1.4.2. Are the impacts of a fishery on habitat structure and function within acceptable levels?</p> <p><i>SG 60:</i> The main impacts of the fishery on habitats are generally considered to be within acceptable levels.</p> <p><i>SG 80:</i> The effects on the benthic and midwater habitats, and their functions, are generally maintained within acceptable levels for the most important parameters (as established in 2.1.3.1).</p> <p><i>SG 100:</i> The effects of the fishery on the habitats have been quantified in all areas where the fishery operates, and impacts are found to be always maintained within acceptable levels for the most important parameters.</p> <p>Actions & milestones</p> <p>By 30 June 2008:</p> <ul style="list-style-type: none"> • Review 2002 ERA methodology and consult with stakeholders. <p>By 31 October 2008:</p> <ul style="list-style-type: none"> • Scope, develop and consult with stakeholders on revised ERA methodology. <p>By 31 April 2009:</p>

	<ul style="list-style-type: none">• Implement a new ERA process. <p>By 31 October 2009:</p> <ul style="list-style-type: none">• Scope, design and implement a process to develop objectives for each of the main risk issues identified in the revised ERA• Consult on proposed process.• Develop draft objectives for the main ecological risks. <p>By 31 October 2010:</p> <ul style="list-style-type: none">• Design, pilot and test management objectives and practices that will detect and reduce major impacts identified in the ERA• Complete and implement a management plan to achieve each of the above objectives.• Develop and implement a research and monitoring plan to measure the effects of the management measures and to further develop management responses for those objectives that have been identified as requiring further work and/or information. <p>By 31 October 2011:</p> <ul style="list-style-type: none">• Implement the above agreed procedures that have been found to be effective in monitoring and reducing agreed adverse effects on the aquatic environment. <p>At the third Surveillance Audit, the team recommended that DWG commission a brief, independent, high level review of the adequacy of the Ecological Risk Assessment (ERA) specifically to:</p> <ol style="list-style-type: none">i) address stakeholder concerns about the process and,ii) establish whether or not the process was adequate to identify key risks.
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<p>DWG Progress Report</p>	<p>To address Conditions of Certification for New Zealand Hoki Fisheries DWG has implemented:</p> <ul style="list-style-type: none"> • An updated Hoki ERA <i>to identify the levels of impacts of hoki fishing on each of the main ecological risks including at least fur seals, seabirds, benthic habitats and the trophic effects of fish removal (hoki and by-catch species) from the ecosystem.</i> • An independent ERA methodology review • Management measures and practices to reduce interactions between hoki fishing vessels and fur seals, seabirds, benthic habitats and the recommendations identified in the ERA; and • Research projects as identified in the ERA <p>The Summary of Key Actions since the 2010 Surveillance Audit are:</p> <ul style="list-style-type: none"> • 30 Nov 2010 - Notification of ERA workshop dates, invitations to participants, documentation provided • 13-14 Dec 2010 - ERA workshop held to identify risks of impacts of hoki fishing on target species, by-catch species, seabirds, marine mammals, benthic habitats and trophic/ecosystem functioning – facilitated by Boyd Fisheries Consultants Ltd. • 23 Dec 2010 - ERA workshop record and draft of assessments provided to Panel members for review • 31 Jan 2011 - ERA Draft Report provided to Panel Members for review • 8 Apr 2011 - Independent high level review of ERA process and adequacy commissioned from Enfocus Consulting Ltd (see Gunn 2011.) • 13 May 2011 - Draft Review Report received by DWG for review • June 2011 - Key participants invited to consultation meeting on ERA outcomes • 7 Jun 2011 - DWG Board considered outcomes of hoki ERA • 30 June 2011 - Consultation meeting on ERA outcomes with stakeholders, key science advisors and interested parties. • July 2011 - Finalise and implement Annual Operational Plan to achieve agreed objectives • 1 Sep 2001 to 30 Oct 2012 – On-going review and monitoring of Operational Plan results, periodic and annual reports to Ministry and to DWG Board.
<p>Observations</p>	<p>PI 2.1.3.1 Are levels of acceptable impact determined and reviewed?</p> <p>As at the third Surveillance Audit, there was broad consistency in the stakeholder commentary around the ERA workshop. The ERA process exceeded some stakeholder expectations, was well run, and was appropriately reported (Boyd 2011). Some stakeholders reflected that a wider range of experts (especially in the habitat and ecosystem areas) and more time would have been beneficial. However, the prevailing view was that the subject matter was generally considered with appropriate thoroughness.</p> <p>The ERA Expert Panel considered:</p>

- the target species in spawning and non-spawning fisheries,
- retained and bycatch species,
- endangered, threatened and protected species,
- habitat effects (specifically benthic impacts), and,
- ecosystem (including trophic) impacts of fishing.

Seabirds were not included in the assessments made, due to the existence of recent Level 1 and Level 2 risk assessments for this group (Rowe 2010, Richard et al. 2011). These seabird risk assessments were considered to be robust, and the ERA Expert Panel's efforts were therefore directed to other environmental impacts of the fishery.

Methodology concerns were raised especially by eNGOs, who considered that the ERA's methods were more analogous to an environmental impact assessment rather than an environmental risk assessment. This view was based on the 'risks' not being assessed probabilistically with respect to specified outcomes. However, the identification of 'acceptable impact' was critical to addressing the PI, and the Expert Panel agreed on a working definition upon which they based their deliberations. The Expert Panel's reflections on precautionary scoring are included in the ERA report.

As recommended in the third Surveillance audit, DWG has commissioned a review of the adequacy of the ERA (Gunn 2011). This review sought to assess the adequacy of the ERA process, and considered issues including information provision, methodology, expert involvement, and stakeholder involvement. The review found that the process was generally adequate and the content of the ERA was appropriate for a Level 1 assessment. As documented in the workshop report, ecosystem impacts remained an outstanding area in which consensus could not be reached by the Expert Panel as to level of risk from the hoki fishery. Additional expertise in that area could have been useful.

The review identified two factors which may have limited the utility of the ERA:

- i) the lack of quantifiable fishery management objectives against which to assess risks, and,
- ii) the Expert Panel's decision not to score the likelihood of consequences occurring.

The Chair of the ERA workshop considered issue ii) but did not intervene in the group's decision on this, given that his role was facilitation. As facilitator, he considered that the Panel was the expert body and so was best placed to make such a determination.

The reviewer (Gunn 2011) suggests steps to follow up on the ERA workshop and concludes that a risk management plan must be developed.

Some stakeholders reported little, if any, involvement in the ERA process after receiving the ERA report after the workshop. Although they attended the June meeting, they did not consider this meeting was intended to progress the recommendations of the ERA. Actions would have been valuable and would have benefitted from more stakeholder input.

DWG reported that the meeting was set up to progress the outcomes from the ERA and a proposed action plan was provided. An agenda item was 'proposed management

response”.

PI 2.1.4.1 Are the impacts of the fishery on ecosystem structure, function, biological diversity, and productivity within acceptable levels?

The Expert Panel considered impacts of the fishery on ecosystem characteristics. The Panel noted that removal of the target species (hoki) may result in notable ecosystem-level effects in non-spawning fisheries, given the dominance of hoki in the ecosystems. The Chatham Rise fishery is best understood in this respect, and an ecosystem model that is still in draft form and has yet to be peer reviewed has been developed (Pinkerton 2011). Change (most likely as a consequence of the fishery) is reported to be ongoing in this ecosystem, rather than the ecosystem stabilising at an alternative state. This may be cause for concern, and should be monitored. With reference to the specific PI elements for non-spawning fisheries, the following is understood from studies of the Chatham Rise (Tuck et al. 2009):

- ecosystem structure: No evidence of loss of community constituents. However, the mean trophic level of commercial and trawl survey catches is declining (i.e. fishing is affecting higher trophic levels). There is also evidence for changes in species abundance.
- ecosystem function: No evidence of loss of ecosystem function.
- biological diversity: No evidence of loss of species over time.

At an EEZ level, the impact of fisheries removals on ecosystem productivity has also been examined. Fisheries impacts were assessed, preliminarily, to be sustainable in an energetic context (Knight et al. 2011).

The ecosystem supporting the Sub-Antarctic hoki fishery is less well studied than the Chatham Rise ecosystem. However, the Expert Panel considered ecosystem impacts were most likely similar between the two non-spawning fisheries. Ongoing change is also reported from the sub-Antarctic ecosystem, including declining mean trophic level (Tuck et al. 2009, Pinkerton 2011).

The Expert Panel noted that both the Chatham Rise and the Sub-Antarctic regions also host other fisheries, and the effects of the hoki fishery alone cannot be distinguished.

In spawning fisheries, the Panel noted that hoki are a much less significant ecosystem component, and less incorporated into the ecosystem food webs. Adult hoki are present for a short time within the year, and do not feed to a substantial extent during spawning. The Panel considered the effects of fewer eggs and larvae being in the system (e.g. as diet items for spiny dogfish), but deemed these effects to be minor.

PI 2.1.4.2 Are the impacts of a fishery on habitat structure and function within acceptable levels?

Since the third Surveillance Audit, considerable new information has become available against which to evaluate this PI. ERA discussions in this area focussed on benthic impacts. Midwater impacts were reflected in the ecosystem considerations of PI 2.1.4.1 (as noted in SGS 2007). The Benthic-optimised Marine Environment Classification (BOMECE) for New Zealand waters was used at the ERA workshop, together with maps of trawl tracks (Leathwick et al. 2009, Black and Wood 2011).

While the Expert Panel and workshop participants acknowledged that the BOMECE wasn't ideal for the purpose of the ERA and did not facilitate a fine scale risk

	<p>assessment, there was general agreement that BOMECEC was the best single tool currently available to evaluate benthic habitat types. The ERA Expert Panel considered that fisheries were a moderate risk to BOMECEC classes 7 and 8 in some areas, and a major risk to BOMECEC class 9 on the Chatham Rise. Subsequent to the ERA workshop and at its request, additional work was completed overlaying trawl tracks in each hoki fishery area and BOMECEC habitat types. This resulted in the ERA Panel upgrading their assessments in a number of areas, including BOMECEC habitat classes 7 and 8 in Cook Strait (upgraded from moderate to major consequence scores). Beyond BOMECEC classes 7, 8 and 9, hoki fishery impacts on benthic habitats were minor or negligible. Spatially, BOMECEC class 9 has been trawled the most extensively during the 20 years of hoki fishing (1989-90-2008-09) - 34% of this habitat class has never been trawled for hoki. For the other BOMECEC classes, 69% or more of the habitat class area has not been trawled for hoki during this 20 year period. However, it was found that only 11% of BOMECEC 9 in the Chatham Rise hoki fishery was unfished over the 20 year period examined when additional overlaps were created. ERA Panel members considered this level of fishing to be close to a level 4 consequence (likely to cause local extinctions if continued in longer term). The Panel noted however, that this 20 year spatial extent does not reflect the present fishery - the hoki trawl footprint in BOMECEC 9 in recent years is substantially smaller (Black and Wood 2011).</p> <p>Outside of trawl tracks, the nature of benthic communities and the vulnerability of benthic habitats are not well understood. While work is ongoing, these communities are difficult to sample, especially non-destructively (though note past work done using video transects and photo quadrats, for example), in a widespread fashion, and representatively. Consequently, knowledge is relatively limited. Without such knowledge, the short, medium and longer term impacts of demersal trawling in the hoki fishery area, and how past trawl grounds may regenerate, are unknown. However, overlaying trawl tracks on habitat types, and integrating available knowledge such as on community composition reflects the best available information.</p> <p>Benthic Protection Areas, in development at the time of the fishery's 2005-07 reassessment, are now in place. Compliance monitoring helps maintain the integrity of those areas.</p>
Conclusion	<p>PI 2.1.3.1 Are levels of acceptable impact determined and reviewed?</p> <p>Overall, the ERA workshop effectively considered and identified levels of acceptable impact (as defined by the Expert Panel) on the organisms, habitats and ecosystems relevant to the hoki fishery. The ERA conducted was supported by relevant information and by expert participation. The methodology was appropriate to a Level 1 assessment. Research is underway in key areas highlighted by the ERA Panel where moderate (or higher) consequence assessments were allocated. For example, further work is underway on hoki, non-target fish species, New Zealand fur seals (including captures in Cook Strait), basking sharks, habitat impacts, and ecosystem impacts (Leathwick et al. 2009, Hamilton and Baker 2010, Department of Conservation 2011). The high level review undertaken following the ERA identified some issues including a lack of specific management objectives against which to tests risks/impacts. However, the high level review finds broad agreement that the ERA met the requirements of the PI.</p> <p>The audit team rescored this fishery. The team considered that SG 60 is met because the levels of acceptable impacts for the main non-target species and habitats have been estimated. SG 80 is met because the risk assessment undertaken was credible at Level 1, based on expert opinion and informed by the science available. The workshop report describes a precautionary approach, and key organism life stages and ecological</p>

functions were considered. Research is underway in relation to medium level risks and main knowledge gaps.

A score of 85, but not 100, is awarded because SG100 also requires that “the assignment of acceptable levels of impact is subject to regular review”. The Audit team considers that ‘regular’ review requires more than a single review to have been completed (and notes that one review would be able to be completed under the current Certificate). However, the team recognises the approval of the 10 Year Research Programme (Ministry of Fisheries 2010) which includes ERAs for NZ’s deepwater fisheries, including those for hoki, over the next ten years. A contract has been let by MFish to NIWA to develop appropriate methodologies. The first in this series of ERAs is scheduled to occur in 2012.

The Audit Team strongly recommends that DWG ensure the ERA process continues. Continuation should include:

- regular review of assigned risk levels, with respect to new information that becomes available
- progressing information-rich taxa and impacts to Level 2 risk assessment processes, except seabirds which have already been considered (Richard et al. 2010),
- developing quantifiable fishery management objectives against which risks can be assessed, ultimately probabilistically
- developing and implementing appropriate management and/or other actions that address consequences identified as unacceptable by the ERA Panel. (Note that the Panel agreed that the boundary between acceptable and unacceptable consequence lay between scores of 2 (moderate) and 3 (major), for all ecological categories assessed). This will be reviewed at future audits.

Original score at recertification in 2007: 76

Rescore at the fourth Annual Surveillance Audit: 85

PI 2.1.4.1 Are the impacts of the fishery on ecosystem structure, function, biological diversity, and productivity within acceptable levels

The SGS Assessors (SGS 2007) noted that best practice in this area, given the recognised difficulty with defining ‘acceptable’ levels of ecosystem impacts, was to have an effective process in place determining levels of impact, with a demonstrated system of measures and controls that will be able to constrain the fishery if required. Their report also noted that the hoki fishery had an appropriate system for implementation of control measures. However, it lacked a system to routinely determine and review levels of impacts under this PI.

Ministry of Fisheries’ research programme (project DEE2010/04, Ministry of Fisheries 2011), which includes the hoki fishery, aims to identify and develop a generic approach to ERA of deepwater fisheries covered in the Deepwater Fishery Plan. An ERA (such as this) should provide for the regular review of ecosystem impacts. Further, Ministry of Fisheries project DEE2010/05, entitled Development of a suite of ecosystem and environmental indicators for deepwater fisheries, includes the hoki fishery. The overall objective of this project is to develop a suite of ecosystem and environmental indicators suitable for monitoring the environmental performance of deepwater fisheries within an environmental context. Understanding what these indicators mean in an ecosystem context is critical to their efficacy in informing and improving fisheries management. Ensuring the ecosystem maintains sufficient resilience to sustain both fisheries impacts and cumulative environment impacts and changes (e.g. climate change) is a key issue.

Considerable progress has been made since the third Surveillance Audit. The audit team rescored this fishery. Given discussions at the ERA workshop, the assessments of non-spawning and spawning fisheries described above, and information available (and becoming available) through work on ecosystem indicators and trophic models, the Audit Team concludes that SG60 is met: the main impacts of the fishery are generally considered to be within acceptable levels. Further, SG80 is met because fishery impacts on the ecosystem are currently within acceptable levels for the most important parameters (as established in 2.1.3.1). However, ecosystem impacts require further investigation and monitoring.

SG100 requires the quantification of fisheries impacts on ecosystems, in all areas where the fishery operates. Further, SG100 requires that impacts are found to be always maintained within acceptable levels for all the most important parameters. These requirements are clearly beyond the state of current knowledge.

The Audit Team recommends that work continues on ecosystem effects of the hoki fishery. Continuation should include:

- evaluating currently available indicators to determine their efficacy in monitoring the effects of fishing
- selecting meaningful headline indicators through which ecological effects of fishing can be assessed
- monitoring these indicators to assess fishery impacts on ecosystems
- developing appropriate fishery management responses where ecosystem issues of concern are identified.

Original score at recertification in 2007: 75

Rescore at the fourth Annual Surveillance Audit: 80

PI 2.1.4.2 Are the impacts of a fishery on habitat structure and function within acceptable levels?

The Public Certification Report (SGS 2007) reflects best practice in this area as having in place an effective on-going system for progressively determining and keeping under review the levels of acceptable impacts in the fishery, and responding to these by implementing fishery measures as appropriate to maintain impacts within those levels determined to be acceptable. The report assessed that the hoki fishery did not have a fully effective system in place to routinely determine and review levels of acceptable impacts on benthic habitats.

The availability of the BOMECS and examinations of past trawl tracks within benthic habitat types provide information with which to assess the impacts of the hoki fishery on benthic habitat structure and function. While the communities inhabiting habitat types are less known and relatively difficult to sample, spatial overlays provide a proxy for assessing trawling effects. Examinations of trawled areas within habitat classes show that significant areas of untrawled habitats remain in all classes, with the least untrawled habitat remaining in BOMECS class 9. The BOMECS classification is recognised as the best single tool currently available with which to categorise trawler interactions with benthic habitats. However, combining this with other information sources (e.g. known coral distribution, demersal fish communities, Leathwick et al. 2006) would make for a more fulsome examination of the benthic effects of hoki fishing.

The Audit Team considers that the effects of trawling on habitat structure and function are generally within acceptable levels for the most important parameters (categorised,

	<p>in this case, using BOMECE class). The Team encourages the quantitative definition of fishery management objectives for benthic habitats, as for the previous PI. Considerable progress has been made towards this PI.</p> <p>The audit team rescored this fishery. SG 60 is met because the main impacts of the fishery are generally considered to be within acceptable levels.</p> <p>SG 80 is met because the effects on the benthic (and midwater) habitats, and their functions, are generally maintained within acceptable levels for the most important parameters.</p> <p>SG100 requires that the effects of the fishery on habitats have been quantified in all areas where the fishery operates. While the spatial extent of fishery interaction with the benthos is known, biological effects, for example, are not. Consequently, SG100 has not been met and further work is encouraged in this area.</p> <p>The Audit Team recommends that work continues on benthic impacts of the hoki fishery. Continuation should include:</p> <ul style="list-style-type: none"> - maintaining up to date maps of the overlap between trawl tracks and BOMECE (or other appropriate) habitat classification - using other relevant information, in addition to BOMECE, for future considerations of benthic effects and how to manage these, including spatial measures. <p>Original score at recertification in 2007: 75 Rescore at the fourth Annual Surveillance Audit: 80</p> <p>Note: The Actions and Milestones executed by DWG to address this Condition are set out above. These deviated somewhat from those outlined following the third Surveillance Audit. However, the Audit Team considers the intent of the Actions and Milestones (i.e. addressing the outstanding PIs) has been met by the course of action adopted. There is much work still to be done to improve knowledge and management of ecosystem and habitat effects of the hoki fishery. However, as the PIs have been rescored at or above SG80, Condition 6 is now closed.</p>
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3 Other issues	Communication and provision of information
Comment from WWF	<p>“WWF-NZ, other stakeholders and Intertek Moody Marine (IMM) were provided with links to a website where over 160 documents (in excess of 300MB!) were located on 7 November, one week before the audit meeting with IMM. While we recognise that the collation of this information is a lot of work, the provision of this information so late in the process made the review and assimilation of the information a very difficult task. We recognise that some of the information is in the public domain and in Ministry of Fisheries (MFish) working group websites. Nevertheless, MFish’s website is notoriously difficult to search (especially if the searcher is unaware of the title of the document) and it is often difficult to know what information the client has put forward for the audit.</p> <p>WWF-NZ has previously expressed concerns about processes leading up to MSC audits of the hoki fishery. We have met with Deepwater Group (DWG) on several occasions through 2010 and 2011 with limited tangible outcomes. We have on a number of occasions discussed with DWG the need to plan for the audit and recertification well in advance to ensure the right information is made available in a digestible and that stakeholders can be involved in the process. For example, we discussed WWF commenting on the draft action plan and even discussed the possibility of a joint submission. In the end the action plan was buried in the 160 documents provided at the last moment.”</p>
IMM response	<p>Intertek Moody Marine recognises the importance of stakeholder involvement in the annual surveillance process.</p> <p>DWG informed IMM that they have gone to great lengths to improve their relationship with NGO groups and to improve their communication and exchange of information with the WWF-NZ in particular, arranging regular formal and informal meetings throughout the year.</p> <p>IMM cannot be an adjudicator between DWG and eNGOs.</p> <p>IMM strongly encourages eNGOs to continue to input and participate in the management of the fishery and would encourage and support a professional informative relationship between DWG and e NGOs</p>
4	Any complaints against the certified operation; recorded, reviewed and actioned
	No
5	Any relevant changes to legislation or regulation.
	No
6	Any relevant changes to management regime.
	No – but MFish is currently undergoing a restructure and the consequences of this to the management of the hoki fishery will need to be examined at the time of the next annual surveillance audit.
7	Overall Conclusions
	<p>The fourth annual surveillance was carried out 13-18 November 2011. The team evaluated progress against the remaining Condition and audited conformity with, and progress and performance against, certification Conditions.</p> <p>To verify that the remaining Condition has been met and outcomes have achieved, the assessment team:</p>

- a) Examined relevant objective evidence, and following that examination,
 b) Re-scored all relevant PSIGs relating to that Condition.

The score was raised above 80 for all three relevant PIs and consequently the Condition is now closed with no remaining Conditions. The rationale for the re-scoring and closing out of the Condition is documented in this Surveillance Report.

Three recommendations have been made:

- 1 That DWG ensure the ERA process continues, and that continuation should include:
 - regular review of assigned risk levels, with respect to new information that becomes available
 - progressing information-rich taxa and impacts to Level 2 risk assessment processes, except seabirds which have already been considered (Richard et al. 2010)
 - developing quantifiable fishery management objectives against which risks can be assessed, ultimately probabilistically
 - developing and implementing appropriate management and/or other actions that address consequences identified as unacceptable by the ERA Panel. (Note that the Panel agreed that the boundary between acceptable and unacceptable consequences lay between scores of 2 (moderate) and 3 (major), for all ecological categories assessed).
- 2 That work continues on ecosystem effects of the hoki fishery, and that continuation should include:
 - evaluating currently available indicators to determine their efficacy in monitoring the effects of fishing
 - selecting meaningful headline indicators through which ecological effects of fishing can be assessed
 - monitoring these indicators to assess fishery impacts on ecosystems
 - developing appropriate fishery management responses where ecosystem issues of concern are identified.
- 3 That work continues on benthic impacts of the hoki fishery, and that continuation should include:
 - maintaining up to date maps of the overlap between trawl tracks and BOMECEC (or other appropriate) habitat classification
 - using other relevant information, in addition to BOMECEC, for future considerations of benthic effects and how to manage these, including spatial measures.

No changes in management have taken place that would detrimentally affect the performance of this fishery against the MSC standard and the fishery continues to meet the requirements of the MSC Standard.

MSC Certification should therefore continue. As this is the fourth surveillance audit the fishery client has confirmed they will undertake re-certification.

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Annex 1

Written Stakeholder submissions to the surveillance audit and IMM responses to points raised.

From: Kevin Hackwell [mailto:k.hackwell@forestandbird.org.nz]
Sent: Friday, 25 November 2011 4:20 p.m.
To: 'Jo'
Subject: RE: Hoki audit submission

Hi Jo,

Hoki annual audit submission

Forest & Bird would like to provide a written comment regarding seabird bycatch rates to back up the points we made in the recent hoki audit surveillance meeting on the 14th of November.

While the total number of seabirds caught in the hoki fishery has reduced over the past few years, the actual rate of seabird bycatch in the hoki fishery (measured as numbers caught compared to fishing effort) has not reduced. What has happened is that the fishing effort has dropped and therefore the total number of seabird's caught has dropped.

This has been a point of contention for both F&B and WWF who believe that Moody Marine made an error when they signed off this particular corrective action. The corrective action was explicit about rate of seabird bycatch.

We would request that this year's audit revisit the decision to sign off the corrective action – particularly as the allowable catch has been increased and the number of seabirds caught as a result of the increased fishing effort is likely to increase.

Naturally we think that this issue should also be carefully considered as part of the hoki recertification assessment.

regards

Kevin Hackwell
ADVOCACY MANAGER

Royal Forest and Bird Protection Society of New Zealand Inc.
Level 1 . 90 GhuzneeSt . PO Box 631 .Wellington . New Zealand
DD 04 801 2215 .M 021 227 8420 .F 04 385 7373

You can join Forest & Bird at www.forestandbird.org.nz

IMM response:

IMM notes F&B's comment regarding the recent stabilisation of seabird bycatch rates in the hoki fishery, and F&B's concern about the effects of increased fishing effort on seabird bycatch. IMM agrees that monitoring, and responsible management of, seabird bycatch in any fishery requires consideration of both by catch rates and total bycatch.

The CAR (7) focuses explicitly on the risk of bycatch created by fish waste discharge, such that (p52, SGS 2007):

“This CAR overall will be satisfied when the evidence of bird bycatch from MFish observer data (or any other robust data source agreed with stakeholders and the audit team) verifies that the implementation of the offal management program through the VMP achieves a substantive reduction in both overall seabird mortality and in bycatch mortality of the four main at-risk species—Salvins albatross, White-capped albatross, Northern giant petrel and White-chinned petrel.”

While total bycatch has stabilised in recent years, catches are now much lower than, e.g., 2000 – 2003 (Abraham and Thompson 2011), prior to when offal management measures were introduced. Further, for white-capped albatrosses for example, bycatch rates have been 0.1 – 0.2 birds per hundred trawls since 2005-06, slightly lower than 0.3 birds per hundred trawls reported prior.

For white-chinned petrels, total catch rates have not shown a strong downward trend in recent years even though the seabird bycatch mitigation strategies have been introduced into the fishery. However, since the CAR was written, knowledge of this species' interactions with fishing gear has progressed. We now understand that fisheries captures of some petrel species are often made in trawl nets, rather than predominantly on trawl warps. Consequently, while these birds are attracted to the contents of trawl nets (and mitigation is not in place to ameliorate this interaction), they will still be bycaught. For this species, we expect that offal management is a partial solution to bycatch, but we now know that it is not a complete solution.

Despite the variable responses by species in the observer data collected, targeted experiments in other NZ trawl fisheries have produced robust data demonstrating the efficacy of offal management in reducing seabird interactions with trawl fisheries. Attraction to fish waste discharged from vessels is the single largest risk factor for increased seabird bycatch (Bull 2007, 2009). Global best practice is to control offal discharge to reduce the risk of seabird bycatch. The intent of this CAR was to ensure the hoki fishery developed and implemented a waste management system that would reduce this risk.

The system of onboard offal control measures, Vessel Management Plans, crew education, and auditing, currently in place in DWG vessels fishing for hoki is exemplary. Vessel Management Plans are reviewed annually, and are audited by observers and DWG staff on vessels. While operational practices should be regularly reviewed and improved, including when new information becomes available, the Audit Team still considers that the systems in place meet the intent of CAR (7) as raised in 2007.

IMM will review this issue, and new information on seabird bycatch, at any subsequent Surveillance Audits. It will also be considered through the re-assessment process.

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WWF New Zealand submission on final annual audit: New Zealand hoki

Contact Information

Contact Name:

First: Rebecca Last: Bird Title: Marine Programme Manager

On behalf of:

Organisation: WWF-New Zealand
Mailing Address: PO Box 6237, Marion Square, Wellington 6141
Tel: +64 4 815 8523 Mob: +64 27 212 3121
Fax: +64 4 499 2954 Email: rbird@wwf.org.nz

Assessment Stage:

Announcement of surveillance visit: Opportunity to provide information to the certifier
Fishery: New Zealand hoki
Date: November 2011

New information

Information provided by the client

WWF-NZ, other stakeholders and Intertek Moody Marine (IMM) were provided with links to a website where over 160 documents (in excess of 300MB!) were located on 7 November, one week before the audit meeting with IMM. While we recognise that the collation of this information is a lot of work, the provision of this information so late in the process made the review and assimilation of the information a very difficult task. We recognise that some of the information is in the public domain and in Ministry of Fisheries (MFish) working group websites. Nevertheless, MFish's website is notoriously difficult to search (especially if the searcher is unaware of the title of the document) and it is often difficult to know what information the client has put forward for the audit.

WWF-NZ has previously expressed concerns about processes leading up to MSC audits of the hoki fishery. We have met with Deepwater Group (DWG) on several occasions through 2010 and 2011 with limited tangible outcomes. We have on a number of occasions discussed with DWG the need to plan for the audit and recertification well in advance to ensure the right information is made available in a digestible and that stakeholders can be involved in the process. For example, we discussed WWF commenting on the draft action plan and even discussed the possibility of a joint submission. In the end the action plan was buried in the 160 documents provided at the last moment.

Ecological risk assessment

DWG convened an "ecological risk assessment" (ERA) earlier in 2011. The process and method could have been improved, such as the CSIRO methodology. Nevertheless, WWF did participate in good faith in this process, but we note that this is not acknowledged in the Updated Action Plan. Despite its methodological flaws, the ERA did provide a useful compilation of information, for example, providing new information on the trawl footprint and trophic impacts, both of which the "Expert Panel" noted as risks. However, the absence of clear management objectives limited the value of the ERA process, because it was not possible for the Panel to assess risk in terms of the probability of failing to

reach certain (specified) outcomes. It could be better described as an “ecological impact assessment”. While membership of the Panel could have been improved, some of the Panel’s conclusions are relevant to the MSC audit and recertification. The WWF-NZ submission on the recertification will provide more details on the ERA, but aspects will be described in relation to the conditions of certification below.

Changes in management

Review any potential or actual changes in management systems

- The total allowable catch of hoki was increased from 121,000 tonnes last year to 131,000. While this reflects increases in recruitment and improved status of the stock, the associated increase in fishing effort is likely to result in increased retained catch, seabird and marine mammal mortality (given bycatch rates have been essentially static in the last few years) and impacts on the seabed (although it is possible that trawling may be focused within the historic footprint). Hence, increased fishing effort is likely to lead to more birds being captured/killed and increased ecosystem effects. While the stock assessment indicates that a TAC increase will not lead to depletion of the stock, greater environmental effects need to be addressed.
- MFish appears to have abandoned the government review of the National Plan of Action Seabirds and its associated seabird standard and has produced a “seabird policy”. WWF-NZ submitted strongly on this document, considering it a major step backwards and noting that it will not meet out international obligations for managing seabirds.
- MFish has “paused” the development of its “benthic impact standard”.
- The absence of these standards will make it more difficult to assess whether fisheries are operating with “environmental limits” as advocated in the *Fisheries 2030* strategy.
- Little has eventuated from a proposal to establish an Environmental Advisory Group.

b. Review any changes or additions/deletions to regulations.

- We are not aware of any new regulations of significance.

c. Review any personnel changes in science, management or industry to evaluate impact on the management of the fishery.

- Both MFish and the Department of Conservation (DoC) are currently facing cross-government cuts in staffing and resources. This seems to be affecting DoC and, in particular, its ability to advocate for conservation in the development of government policy.
- WWF-NZ has experienced limited change in policy through submissions on interim position papers produced by MFish. However, we have accepted invitations by MFish to participate at an early stage of the development of the southern blue whiting and ling fisheries chapters of the Deepwater Fisheries Plan. Although we have been constrained by the pre-determined structure of the plan, we have been afforded the ability to suggest changes to the documents at points where MFish was able to make changes. Other processes, such as the development of the seabird policy failed to provide for any input until a late draft was circulated for comment.

d. Review any potential changes to the scientific base of information, including stock assessments.

- Stock assessments tend to be conducted annually in this fishery. They tend to be submitted to MFish working groups prior to publication in the annual plenary

document. It appears that the latest assessments have been included in the information provided by DWG.

- There may be a broader issue of science quality in the future, given the range of providers and cost issues.

Conditions of certification

I wish to provide information relevant to fulfilment of the conditions of certification. We have previously expressed our concerns about the premature closure of conditions.

CoC 1: Performance Indicator 1.1.4.2: Are appropriate target and limit reference points used?

While we acknowledge that the hoki stocks are now in better condition than the overexploited stocks of the past, we have previously raised the issue that reference points for the hoki fishery had only been established in relation to biomass. The 2011 MFish hoki plenary report reiterates previous caution that the use of B_{MSY} , as calculated in report, is not a suitable target for management of the hoki fishery:

- It assumes a harvest strategy that is unrealistic in that it involves perfect knowledge
- It assumes perfect knowledge of the stock-recruit relationship, which is actually very poorly known
- It makes no allowance for extended periods of low recruitment, such as that observed in 1995–2001 for the W stock.
- It would be very difficult with such a low biomass target to avoid the biomass occasionally falling below 20% B_0 so the actual target probably needs to be considerably above this theoretical optimum

Recommendation:

- A condition is introduced that specifies a fisheries management target related to fishing pressure is defined for the hoki fishery.

CoC 2: Performance Indicator 1.2.1; and PI 1.1.5.1: Are measures in place to rebuild a stock if it is found to be below a target or limit reference point?

WWF notes that:

- The Fisheries Plan has been approved by the Minister and that this includes provisions for rebuilding stocks if they fall below trigger points.
- Hoki stocks have recovered following earlier low levels.
- The deepwater research plan includes research into the impact of climate on hoki recruitment, addressing earlier concerns.

CoC 3: Performance Indicator 2.1.1.1: Are the nature and distribution of habitats relevant to the fishing operations known?

While progress is being made with researching the impact of the fishery on the benthos, it is important that the impacts of the trawl footprint are managed sustainably, something not addressed by this CoC. Work has been undertaken in mapping various BOMECE (benthic optimised marine environment classification) classes in relation to areas trawled for hoki. Last year we recommended that a condition is introduced that requires research

to be conducted into the nature of links between BOMECE classes and associated benthic communities. We note that some of this work is underway.

What is missing is a clear definition of how much trawling can be tolerated on different habitats. WWF-NZ is very disappointed that the proposed benthic impact standard remains “paused”.

Recommendation:

- A condition is introduced that defines the maximum proportion of BOMECE classes that may be trawled. Ideally this should be derived through the MFish benthic impact standard.

CoC 4: Performance Indicator 2.1.1.3: Are the trophic relationships of the target species known?

As with the condition relating to benthic impacts, this condition focuses on understanding the nature of trophic impacts, rather than managing these impacts. At the hoki ERA workshop there was disagreement about the trophic risks posed by the hoki fishery, with the sole expert Matt Pinkerton (NIWA) highlighting the risks, this being challenged by industry representatives. In particular, he noted¹:

- Major changes in the Chatham Rise have occurred in terms of the biomass of ecologically important species, but there is no evidence of loss of species composition, community constituents or changes in ecosystem function.
- Research has shown that the mean trophic level (MTL) of both the trawl survey and commercial catch is declining, and the decline is faster in the trawl survey data. Fishing appears to be affecting the higher trophic levels.
- Some properties of the Chatham Rise ecosystem have definitely changed, and determining how this change is likely to continue is important. The decline in MTL is continuing, which could be a cause for concern.
- Although there is no evidence of species disappearing from the time series, because the decline in MTL is ongoing it is unclear if or when the ecosystem will reach a new, steady state or continue to a state which is unsuitable for some species.
- It is unclear at this point whether these observed changes are predominantly the result of the hoki fishery on the Chatham Rise. There is no way of separating out the effects of each of the main fisheries. However, hoki is the most ecologically important fish species on the Chatham Rise, and therefore any changes in hoki abundance are likely to be important.
- A study of hoki diet concluded that it appears that the importance of myctophids to hoki has increased and euphausiids had declined, but the importance of hoki to the hake and ling diets haven't changed.

The assigned scores were:

Ecosystem	Chatham Rise	Sub-Antarctic	WCSI	Cook
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¹ From the ERA final report.

					Strait
Ecosystem/trophic impacts	Consequence	Major or moderate	Major or moderate	Minor	Minor
	Confidence	Low (disagreement between experts) ²	Low (disagreement between experts)	Low (no data exists)	Low (no data)

WWF is not aware of how MFish and DWG propose to address these risks. WWF suggests that a new condition is needed to manage those risks. Note that “manage” may simply involve better quantifying the risk if the further work shows the risk to be low.

Recommendation:

- A new condition is required to manage the risks of trophic impacts of the Chatham Rise and subantarctic fisheries.

² Note earlier comments about disagreement between “experts”.

CoC 5: Performance Indicator 2.1.2.2: Is there adequate knowledge of the impacts of fishing gear on the habitats where the fishery operates?

DWG updated the benthic risk assessment following the 2010 ERA workshop. Based on the new data, risks to benthic habitats in a number of BOMECE classes are higher than originally assessed³.

- With only 11% unfished, BOMECE 9 in the Chatham Rise fishery is close to a level 4 risk (likely to cause local extinctions if continued in longer term), but 11% unfished or protected does not reflect the present fishery as the hoki trawl footprint in BOMECE 9 in recent years is significantly smaller. The risk to BOMECE 7 in the Chatham fishery is now assessed as moderate.
- In Cook Strait the risk to benthic habitats has risen in 7 BOMECE areas compared to the risks assessed at the December 2010 workshop. The risk level is now assessed as minor in BOMECE classes 2, 4 and 14, moderate in BOMECE classes 3 and 10 and major in BOMECE classes 7 and 8. Overall, risks to benthic habitats in Cook Strait are much higher than originally assessed.
- On the basis of the new data by fishery, confidence in the new risk assessments are high. However, a different presentation of the data (some measure of fishing intensity, or decaying footprint allowing for recovery) might give different answers. Such an approach would require more knowledge on benthic communities, functions and recovery rates following disturbance.

While the ERA was useful in providing new and updated information on trawl footprints and modelled seabed habitats, it was handicapped by the absence of objective criteria such that the risk of failing to meet management objectives could be assessed. This highlights the limited value of the condition and the need for a new condition to manage those risks. Note that “manage” may simply involve better quantifying the risk.

Although benthic protected areas (BPAs) have been implemented, the absence of a complete process to establish them within a comprehensive, adequate and representative biodiversity conservation framework means that more needs to be done. There is currently a proposal to mine phosphate nodules in the middle of the BPA on the Chatham Rise and consideration is being given to shifting this BPA. Any change in the BPAs on the Chatham Rise needs to be in the context of new information on habitat types and trawl footprint. WWF looks forward to engaging with DWG and MFish on the proposed BPA plan for the Chatham Rise in order to manage the benthic impacts in this area. We note that the BPA process was less than satisfactory and that the BPA Accord still excludes MPA implementation in our EEZ until 2013.

Recommendation:

- A condition is introduced that defines the maximum proportion of BOMECE classes that may be trawled. Ideally this should be derived through the MFish benthic impact standard.
- A condition is introduced that requires DWG to engage with stakeholders in developing the revised benthic protected area plan, such as for the Chatham Rise.

CoC 6: Performance Indicators 2.1.3.1, 2.1.4.1, 2.1.4.2:

- Are levels of acceptable impact determined and reviewed?
- Are the impacts of the fishery on ecosystem structure, function, biological diversity, productivity within acceptable levels?

³ The following text is taken from the draft benthic risk assessment.

- Are the impacts of the fishery on habitat structure and function within acceptable levels?

We reported to the 2010 Audit that WWF was dissatisfied with the process and method adopted in the 2010 ERA. DWG responded with an external review that concluded that:

- The method and information used in the 2010 Hoki ERA appears to have been generally adequate for a Level 1 risk assessment.
- The benthic assessment appears to have been largely adequate for a Level 1 risk assessment.
- The method appears to have been less adequate for the trophic assessment [due to] ... the lack of measurable fishery management objectives against which to assess the risk of fishing to trophic interactions, the presence of only one acknowledged trophic expert at the workshop, and a relative lack of information on the nature and extent of trophic interactions.

Two weaknesses were identified in the assessment process:

- The lack of quantifiable fishery management objectives against which to assess risks, and
- The workshop decision not to score the likelihood of consequences occurring.

WWF-NZ considers the first weakness to be significant. The review noted that this meant that the assessment tended more towards impact assessment than formal risk assessment. A more focused assessment of risks to the benthic habitat and trophic interactions against appropriately scaled, quantifiable fishery management objectives is likely to have led to richer outcomes. It may also have left less work to be completed after the workshop.

These comments are fair, noting that the recent update on the benthic risk assessment has gone some way to addressing the concerns noted.

The condition asks three questions:

1. Are levels of acceptable impact determined and reviewed?
2. Are the impacts of the fishery on ecosystem structure, function, biological diversity, productivity within acceptable levels?
3. Are the impacts of the fishery on habitat structure and function within acceptable levels?

WWF-NZ considers that the second question has been answered to some degree, noting limitations on trophic impacts and, to a lesser degree, benthic impacts.

However, the first question has not been addressed, and therefore it is not possible to answer the third question. WWF-NZ has sought to participate in the development of the benthic impact standard by MFish to the point when it was “paused” without explanation. We have submitted repeatedly on relevant MFish consultation papers and in MSC audit processes on the need for objective standards for benthic impacts (and for seabird mortality).

Recommendations:

- The ERA conducted by DWG made good progress towards understanding the ecological impacts of the hoki fishery.

- However, acceptable levels of impacts have not been defined, the impacts were assessed against those levels, and it is not possible to determine if impacts are acceptable.
- This condition can not be closed.

CoC 7: Performance Indicator 2.2.3.1: Do the impacts of the fishery on protected, endangered, threatened or at risk species exceed unacceptable levels?

WWF-NZ's submission on the 2010 Audit criticised the 2009 Audit for concluding that:

“The evidence of a reduction in observed mortality of those species most at risk, as well as the overall reduction in seabird mortality (Abraham et al., 2009), as a direct result of changes in fishing practices over recent years inevitably leads the surveillance team to conclude that the requirements of this Condition have been fulfilled”.

WWF-NZ submitted that:

- There is insufficient monitoring of warp strikes and no assessment of the relationship (if any) between landed birds and cryptic mortality.
- The data that have been collected show that, while estimated seabird mortality based on observed bird landings have declined significantly, the major driver of this is fishing effort, rather than fishing practices or mitigation. Data made available in the last year supports this view.
- It was premature to close this condition and further work is needed to quantify captures and cryptic mortality and to ascertain the extent to which fishing and mitigation practices (compared to effort) have contributed to any changes.
- As long as there is no agreement between industry, stakeholders and government as to what constitutes “acceptable” levels of seabird bycatch in the fishery, it is not possible for the fishery to meet this indicator at the level of the 80 scoring guidepost.

The 2010 Audit report responded:

The Surveillance Team notes that their previous consideration of the impacts of known mortalities on the populations of seabirds remains valid and that the impacts of the hoki fishery are small and, as has been determined by the seabird ERA, generally of low risk.

While the impacts of the hoki fishery are less than those from other fisheries, WWF-NZ disputes that they are “small” and will provide evidence in our submission on the recertification of this fishery. However, in the absence of clear and agreed standards and robust information on cryptic mortality, it is simply not possible to say that they are not “unacceptable” as specified in the condition. Furthermore, it has not been demonstrated that mortality rates are as low as reasonably achievable.

Curiously, in response to the suggestion that a seabird standard be developed, the 2010 Audit responded:

This can already be determined as detailed effort data are available.

WWF-NZ is confused as to what this means. Two standards are possible:

- One which relates to the maximum mortality that, when combined with other human sources of mortality does not put the population at unacceptable risk;
- One which defines an acceptable mortality rate per unit effort.

While the 2010 Audit may relate to the second point (although we have yet to see progress in this regard), it does not address our suggestion that population based standards are needed. The seabird risk assessment was based on the ratio between estimated annual potential mortalities and potential biological removal (PBR). A similar approach may prove acceptable, but this should be investigated through a robust stakeholder engagement process.

Recommendations:

- This condition can not be closed until an agreed seabird standard that defines acceptable levels of seabird bycatch in the fishery is developed.
- The fishery should develop and implement capture trigger limits and robust management actions to address situations where trigger limits are reached or exceeded

CoC 8: Performance Indicators 2.2.3.1 and 2.3.1.1: Do the impacts of the fishery on protected, endangered, threatened or at risk species exceed unacceptable levels? Are management measures for the target species in place that allow for the rebuilding of the affected non-target populations?

This condition focuses on fur seals. While progress has been made in determining fur seal populations, acceptable levels have not been defined in terms of total mortalities or capture rate. We agree with the 2010 Audit that further information is needed on potential risks to west coast South island and Cook Strait fur seal populations. Furthermore, we note that the catch limit on the western hoki stock has increased significantly in recent years. We have previously shown that fishing effort is the main driver of fur seal mortality, given that capture rates have remained rather constant over the last few years. Hence, it is likely that fur seal mortality will increase, putting further pressure on these subpopulations.

WWF-NZ remains unconvinced that fur seal capture rates are as low as possible and that reasonable mitigation methods have been evaluated.

Recommendations:

- The probable increased fur seal mortality associated with increasing effort should be monitored.
- The maximum acceptable level of mortality should be determined for fur seals.

Other

WWF-NZ is disappointed that we have provided evidence and technical information into the surveillance audit process but some conditions have been closed that should not have been. There are still outstanding and significant issues from the first certification, which was approximately 10 years ago. Subsequent dialogue with Moodys may have allowed this concern to be addressed, noting that this is not specifically provided for in the audit process. We will seek a change in the MSC process to be able to have input into the audit process once the CAB has submitted its report.

Once conditions are closed, there is little incentive on the client to address what WWF-NZ considers to be outstanding issues.

Recognising these limitations, better, more timely and open dialogue with the client (DWG) may have been a means to address this. Despite best endeavours, WWF-NZ has gained little in the way of tangible outcomes from dialogue with DWG. This is disappointing.

WWF-NZ submits that the significant outstanding issues (including one condition that cannot be closed and some that should not have been) must be adequately addressed, given that this is the final audit in this certification.

IMM Response:Information provided by the client

IMM recognises the importance of stakeholder involvement in the annual surveillance process. DWG informed IMM that they have gone to great lengths to improve their relationship with WWF-NZ to and improve their communication and exchange of information with eNGO groups in general, arranging regular formal and informal meetings throughout the year.

IMM strongly encourages eNGOs to continue to input and participate in the management of the fishery.

However IMM cannot be an adjudicator between DWG and eNGOs.

Ecological risk assessment

IMM notes WWF's comments on the methodology adopted for the ERA in December 2010, including the lack of quantifiable management objectives. We note that the high level review of the ERA process also identified these concerns (Gunn 2011).

Despite the similarity to an impact assessment-type approach, the identification of 'acceptable impact' was critical to addressing the PI, and the workshop participants agreed on a working definition alongside which to conduct their deliberations. Stakeholders interviewed reflected that the ERA workshop met its objectives effectively and appropriately for a Level 1 assessment.

IMM has made a recommendation in their surveillance report that DWG continue the ERA process, for example, by undertaking the following actions:

- regular review of assigned risk levels, with respect to new information that becomes available
- progressing information-rich taxa and impacts to Level 2 risk assessment processes
- developing quantifiable fishery management objectives against which risks can be assessed, ultimately probabilistically.

Changes in management

- IMM concurs that any change in fishing effort requires concomitant assessment of environmental effects. Such assessment is taking place under the MFish Aquatic Environment projects assessing ETP bycatch rates and totals (MFish 10 year research programme for deepwater fisheries). Text has been included in the report to cover this.

Conditions of certificationCoC 1: Performance Indicator 1.1.4.2: Are appropriate target and limit reference points used?

While it is not required by the Harvest Strategy Standard, HSS, the stock assessment plenary reports fishing intensity for hoki (defined as the maximum over age of the catch-at-age divided by the numbers-at-age) relative to two target fishing intensities. IMM does not see the need for the formal adoption of a fishing intensity target given the constraints already imposed through the HSS. Given the HSS and the outputs from the assessment, specifically projected biomass under current and alternative TACCs, exploitation rates should remain within levels which should lead to the stock fluctuating within the target range.

CoC 3: Performance Indicator 2.1.1.1: Are the nature and distribution of habitats relevant to the fishing operations known?

IMM notes that the text of this PI relates to spatial characterisation of habitat. However, with reference to WWF's comment, IMM recognises that more specific and quantifiable guidance or objectives relating to fishery management (including benthic impacts) would be valuable and has made the recommendation (under PI 2.1.3.1) that quantifiable fishery management objectives be developed.

CoC 4: Performance Indicator 2.1.1.3: Are the trophic relationships of the target species known?

IMM notes that the WWF recommendation relates to management of trophic effects. This PI relates to knowledge. IMM recognises that further work could improve the understanding management of ecosystem effects of the hoki fishery. While we consider the progress in this area to date meets PI 2.1.4.1 at the SG80 level, during the fourth surveillance audit, we have made the recommendation that there is continued work on ecosystem impacts including:

- evaluating currently available indicators to determine their efficacy in monitoring the effects of fishing
- selecting meaningful headline indicators through which ecological effects of fishing can be assessed
- monitoring these indicators to assess fishery impacts on ecosystems
- development of appropriate fishery management responses where ecosystem issues of concern are identified.

CoC 5: Performance Indicator 2.1.2.2: Is there adequate knowledge of the impacts of fishing gear on the habitats where the fishery operates?

For the first Recommendation provided by WWF under this heading, IMM refers to 2.1.1.1 above.

IMM considers the details of the second recommendation are more appropriately progressed through the Hoki fishery reassessment process, due to the timeframes involved. However, for the fourth Surveillance Audit, IMM has recommended (under PI 2.1.4.2) that work continues on benthic impacts of the hoki fishery, and that such work includes:

- maintaining up to date maps of the overlap between trawl tracks and BOMECS (or other appropriate) habitat classification
- using other relevant information, in addition to BOMECS, for future considerations of benthic effects and how to manage these, including spatial measures.

CoC 6: Performance Indicators 2.1.3.1, 2.1.4.1, 2.1.4.2:

IMM again recognises the utility that quantified fishery management objectives may have brought to the ERA process (please see earlier comments relating to this, and the associated recommendation). However, in the absence of such objectives, the workshop participants agreed on a working definition of acceptable impact, alongside which to conduct their deliberations. IMM considers that this working definition allowed the workshop to progress to reach useful outcomes and for the overall process to meet and exceed PI 2.1.3.1 SG80. IMM agrees that this approach is satisfactory.

CoC 7: Performance Indicator 2.2.3.1: Do the impacts of the fishery on protected, endangered, threatened or at risk species exceed unacceptable levels?

With respect to WWF's first recommendation, IMM again notes that during the fourth surveillance audit, we have made the recommendation under PI 2.1.3.1 that quantifiable fishery management objectives be developed.

However, IMM reflects that CoC 7 focuses explicitly on the risk of bycatch created by fish waste discharge, such that (p52, SGS 2007):

“This CAR overall will be satisfied when the evidence of bird bycatch from MFish observer data (or any other robust data source agreed with stakeholders and the audit team) verifies that the implementation of the offal management program through the VMP achieves a substantive reduction in both overall seabird mortality and in bycatch mortality of the four main at-risk species—Salvins albatross, White-capped albatross, Northern giant petrel and White-chinned petrel.”

While total bycatch has stabilised in recent years, catches are now much lower than, e.g., 2000 – 2003 (Abraham and Thompson 2011), prior to when offal management measures were introduced. Further, for white-capped albatrosses for example, bycatch rates have been 0.1 – 0.2 birds per hundred trawls since 2005-06, slightly lower than 0.3 birds per hundred trawls reported prior.

For white-chinned petrels, total catch rates have not shown a strong downward trend in recent years. This is unfortunate, given the seabird bycatch mitigation strategies introduced into the fishery. However, since the CAR was written, knowledge of this species’ interactions with fishing gear has progressed. We now understand that fisheries captures of some petrel species are often made in trawl nets, rather than predominantly on trawl warps. Consequently, while these birds are attracted to the contents of trawl nets (and mitigation is not in place to ameliorate this interaction), they will still be bycaught. For this species, we expect that offal management is a partial solution to bycatch, but we now know that it is not a complete solution.

Despite the variable responses by species in the observer data collected, targeted experiments in other NZ trawl fisheries have produced robust data demonstrating the efficacy of offal management in reducing seabird interactions with trawl fisheries. Attraction to fish waste discharged from vessels is the single largest risk factor for increased seabird bycatch (Bull 2007, 2009). Global best practice is to control offal discharge to reduce the risk of seabird bycatch. The intent of this CAR was to ensure the hoki fishery developed and implemented a waste management system that would reduce this risk.

The system of onboard offal control measures, Vessel Management Plans, crew education, and auditing, currently in place in DWG vessels fishing for hoki is exemplary. Vessel Management Plans are reviewed annually, and are audited by observers and DWG staff on vessels. While operational practices should be regularly reviewed and improved, including when new information becomes available, the Audit Team still considers that the systems in place meet the intent of CAR (7) as raised in 2007.

IMM does not consider significant new information is available to warrant revisiting the closure of this condition, and expects that such issues will be reviewed at any subsequent Surveillance Audits, and considered through the reassessment process. IMM suggests that WWF’s second recommendation under this CoC is more effectively considered as part of the management system for the fishery, and through any reassessment process.

CoC 8: Performance Indicators 2.2.3.1 and 2.3.1.1: Do the impacts of the fishery on protected, endangered, threatened or at risk species exceed unacceptable levels? Are management measures for the target species in place that allow for the rebuilding of the affected non-target populations?

IMM does not consider significant new information is available to warrant revisiting the closure of this condition. However, with respect to WWF’s recommendations, IMM refers to comments above re monitoring environmental effects of increased TACC and the fourth Surveillance Audit recommendation re development of quantifiable fishery management objectives (under PI 2.1.3.1).

Others

WWF raised issues about conditions that had been previously closed. In this report the Surveillance Team has investigated these and, where appropriate, has made recommendations to address some issues. However, there is little 'new' information that would suggest that further conditions need to be raised at this point in time.

In previous surveillances, where conditions were closed all relevant objective evidence was examined and relevant PSIGs relating to the conditions were rescored. Where the score was raised above SG80 the condition was closed.

As many of the issues raised in the written submission by WWF relate to details within the management of NZ hoki fishery, rather than to fishery's performance in relation to the Performance Indicators used to assess the fishery against the MSC FAM, the Surveillance Team recommends that WWF take their concerns up directly with DWG and with the Ministry of Fisheries.

IMM notes that WWF will seek a change in the MSC process to be able to have input into the audit process once the CAB has submitted its report.

References:

Abraham, ER and Thompson FN. 2011. Estimated capture of seabirds in New Zealand trawl and longline fisheries, 2002-03 to 2008-09. New Zealand Aquatic Environment and Biodiversity Report No. 79. Ministry of Fisheries.

Bull LS. 2007. Reducing seabird bycatch in longline, trawl and gillnet fisheries. Fish and Fisheries 8:31-56.

Bull LS. 2009. New mitigation measures reducing seabird by-catch in trawl fisheries. Fish and Fisheries 10:408-427.

Gunn J. 2011. High level review of the 2010 ecological risk assessment of the New Zealand hoki fishery. Unpublished report for the Deepwater Group Ltd. Available at: www.deepwater.co.nz

Ministry of Fisheries. 2010. 10 year research programme for deepwater fisheries: management and research summaries. Ministry of Fisheries, Wellington.

Annex 2: Interview records. All have been confirmed via email**MSC Interview Record MFish DW Ops Hoki audit****IMM Attendees**

Lead Auditor/Coordinator: Jo Akroyd

Team Members: Andre Punt, Johanna Pierre

Stakeholders:**Affiliation**

1. MFish

Representatives

Aoife Martin, Vicky Reeve

Location:**Date:** 14 November 2011**1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including**

- 4th Annual Surveillance audit
- Assessment Team
- Intertek Moody Marine as independent CAB accredited to carry out MSC audits
- Purpose of meeting – information collection , changes in management. Legislation operations and progress on conditions.

Comments:

Thanked MFish for their participation and encouraged input into process.

Meeting Attendance record signed and confidentiality arrangements explained.

.

Explained the purpose of the audit as to seek the views of the client and the stakeholders re

a. The fishery.

b. Its performance in relation to any relevant conditions of certification.

c. Issues relevant to the MSC's Principles and Criteria for Sustainable Fishing. Including selecting areas to inspect within the fishery for current or recent management activity for continued conformity with the MSC's Principles and Criteria for Sustainable Fishing, such as:

a. Review any potential or actual changes in management systems.

b. Review any changes or additions/deletions to regulations.

c. Review any personnel changes in science, management or industry to evaluate impact on the management of the fishery.

d. Review any potential changes to the scientific base of information, including stock assessments. of any concerns of stakeholders.

Evaluate progress against conditions at each surveillance audit

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO etc)

MFish deepwater Operations

3. IMM Questions

Assessment team questions for stakeholder response

Changes in management, legislation etc progress on Conditions
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The fish plan process has been approved and the first cycle is underway. First Annual Operational Plan has been produced and has been driving management actions since 1 July 2011.

4. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery?
(P1 – P2 – P3)

What information is available to allow us to determine the status of the fishery in relation to each issue?

-The TACC was increased by 10,000t for the 2011-12 fishing season, and was gazetted as a sustainability measure. The December 2010 survey in the sub-Antarctic area did not take place owing to the lack of the survey vessel because it was being refit in Singapore. The December 2011 survey in the sub-Antarctic is scheduled to start in two weeks. Vicky will provide the CB Team with (a) data on the 2010-11 catch as well as the split of the hoki catch to the western and eastern stocks, and (b) the surveys which will provide data for hoki for 2011 onwards.

-- ERA: MFish operations were involved in this process.

-There was intention to involve Ministry scientists in ERA workshop, but due to scheduling issues, none were involved. There was good representation across stakeholders, and industry representatives attended and gave helpful guidance on at-sea operational matters.

-Moving to an ERA for the hoki/hake/ling complex now, this should be valuable.

- Benthic Protection Areas – in place until 2013. Towards the end of 2012, a review process on these will start. The focus of the review is maintaining the relevance of BPAs. Terms of reference are not yet developed for this review.

5. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- Are comments to be attributed?
- Timescale for completion, including further opportunities for stakeholder input

Confirmed 

BY EMAIL

IMM Lead Auditor

Stakeholders

MSC Interview Record MFish Science Hoki audit

IMM Attendees

Lead Auditor/Coordinator: Jo Akroyd

Team Members: Andre Punt, Johanna Pierre

Stakeholders:

Affiliation

1. MFish FM Science Team

Mary Livingston, Kevin Sullivan, Rohan Currey,

2. MFish FM Deepwater Team

Representatives

Martin Cryer, Pamela Mace,

Geoff Tingley

Vicky Reeve

Location: Level 4, ASB House, 101-103 The Terrace, Wellington

Date: 14 November 2011

1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including

- 4th Annual Surveillance audit
- Assessment Team
- Intertek Moody Marine as independent CAB accredited to carry out MSC audits
- Purpose of meeting – information collection, changes in management. Legislation operations and progress on conditions.

Comments:

Thanked MFish for their participation and input into the process.

Meeting Attendance record signed and confidentiality arrangements explained.

.

Explained the purpose of the audit as being to seek the views of the client and the stakeholders re

a. The fishery.

b. Its performance in relation to any relevant conditions of certification.

c. Issues relevant to the MSC's Principles and Criteria for Sustainable Fishing. Including selecting areas to inspect within the fishery for current or recent management activity for continued conformity with the MSC's Principles and Criteria for Sustainable Fishing, such as:

a. Review any potential or actual changes in management systems.

b. Review any changes or additions/deletions to regulations.

c. Review any personnel changes in science, management or industry to evaluate the impact on the management of the fishery.

d. Review any potential changes to the scientific base of information, including stock assessments, and any concerns of stakeholders.

Evaluate progress against conditions at each surveillance audit

2. Status

What is the nature of the organisation's interest in the fishery (e.g. client / science / management / industry / eNGO etc)

MFish Science: stock assessment, hoki biology, effects of fishing

3. IMM Questions

Assessment team questions for stakeholder response

Changes in management, legislation etc progress on Conditions

4. Stakeholder Key Issues

-The TACC for the 2011-12 fishing season is 130,000 t, an increase of 10,000 t from that in 2010-11. This TACC increase was selected to achieve the criterion that the spawning biomass and fishing intensity remain with the target ranges.

- The spawning stock biomass has continued to increase even given increased catches from the western stock in recent years. There was no survey in the sub-Antarctic area during December 2010, but one will take place there in December 2011. Historical CASAL assessments have given equal weight to models assuming natal fidelity (fish spawn in the area they themselves were spawned) or spawning ground fidelity (first time spawners select a spawning ground at random, but return to the same ground thereafter), but in the latest assessment, the natal fidelity hypothesis was chosen for the base case.

-A literature review has been undertaken and published as a FAR; it suggests that there is no reason to reject either fidelity model.

-The Harvest Strategy Standard includes a requirement that the probability of the stock being rebuilt to the target level needs to exceed 70% before a stock is considered rebuilt to encompass both biomass and age structure elements. A preliminary study has been undertaken to examine the current age structure relative to earlier years, but the Hoki Working Group was not able to determine what constitutes a "healthy" age-structure. This topic may be considered further by the Stock Assessment Methods Working Group.

-The impact of climate variability and long-term cycles or trends on hoki dynamics is being studied

-A Dragonfly Ltd draft report has been produced on the 2009/10 seabird bycatch assessment. This shows bycatch essentially occurring at consistent rates per unit fishing effort in recent years. For seabirds, there is a good understanding of risk. It is expected that the numbers of by-caught seabirds may increase commensurate with the effort increase brought about by higher TACC (~8%).

-Fur seals: Some work is underway on PBR, but it is problematic; e.g. due to lack of recent population estimates, information on trends, etc.

-Ecosystem indicators for trawl surveys: some candidate indicators have been examined under a completed project and this is an ongoing area of work under the 10-year Deepwater Research Plan. Appropriate indicators will be routinely updated. Consideration is being given to the opportunities of observers being located on vessels – is it possible/appropriate to collect additional ecosystem information at low marginal cost, as observers are deployed anyway?

Benthic Protected Areas: potential mining is a current issue for the BPA located on the Chatham Rise. Discussions are currently underway with the mining company on this.

- The Oceans 20/20 Chatham/Challenger biodiversity seabed habitat mapping is now complete – some of the work conducted is relevant to ecosystem effects of fishing, and compares new data with the BOMECA and MEC. Mary agreed to forward confidential copies of relevant reports.

-ERA: MFish Science did not take part in this, and have not been involved subsequent to the workshop. However, there is interest in prioritizing issues relating to the scoring (e.g. areas of low confidence / high consequence), and considering where the knowledge gaps are. The risk assessment MFish is developing that will be applied across deepwater trawl fisheries has been contracted to NIWA. Subsequent projects dealing with individual target fisheries will be commissioned over time.

- An Aquatic Environment & Biodiversity Annual Review is being developed as an analogue of the annual Fisheries Assessment Plenary. This document has been passing through the Aquatic Environment Working Group in chapter form, and one chapter remains to be finalized (on sea lions). There are chapters on the seabed, biodiversity, benthic impacts, climate, etc. Martin Cryer agreed to provide the team with a draft of the review, except for the sea lion chapter. A complete version will be provided once finalised.

5. Other issues

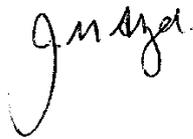
(e.g. any other stakeholders we should contact, any written submissions to follow?)

6. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- Are comments to be attributed?
- Timescale for completion, including further opportunities for stakeholder input

Confirmed



BY EMAIL

IMM Lead Auditor
email

Stakeholders by

MSC Interview Record (Hoki Audit)

IMM Attendees

Lead Auditor/Coordinator: Jo Akroyd

Team Members: Andre Punt, Johanna Pierre

Stakeholders:

Affiliation

1. NIWA

Representatives

Matt Dunn, Matt Pinkerton

Location:

Date: 16 November 2011

1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including

- 4th Annual Surveillance audit
- Assessment Team
- Intertek Moody Marine as independent CAB accredited to carry out MSC audits
- Purpose of meeting – information collection , changes in management. Legislation operations and progress on conditions.

Comments: Thanked the Matts for providing their time

Meeting Attendance record signed and confidentiality arrangements explained.

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The purpose of the audit as to seek the views of the client and the stakeholders re

a. The fishery.

b. Its performance in relation to any relevant conditions of certification.

c. Issues relevant to the MSC's Principles and Criteria for Sustainable Fishing. Including selecting areas to inspect within the fishery for current or recent management activity for continued conformity with the MSC's Principles and Criteria for Sustainable Fishing, such as:

a. Review any potential or actual changes in management systems.

b. Review any changes or additions/deletions to regulations.

c. Review any personnel changes in science, management or industry to evaluate impact on the management of the fishery.

d. Review any potential changes to the scientific base of information, including stock assessments. of any concerns of stakeholders.

Evaluate progress against conditions at each surveillance audit

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO etc)

NIWA – research provider

3. IMM Questions

Assessment team questions for stakeholder response

Condition 6 – ERA process

4. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery?
(P1 – P2 – P3)

What information is available to allow us to determine the status of the fishery in relation to each issue?

- ERA: More preparation time would have been useful, and would have allowed for pulling the data available together. Time was constrained at the workshop too, and more time for discussion would have been good. More representation from scientists working on ecosystem and benthic impacts would have been beneficial. Genetic effects (i.e. fishing-imposed evolutionary change) were not considered.

- Discussion overall was constructive, useful, and reported fairly.

- Envisage ERA workshop as the first step of process. A level 2 ERA would be possible on ecosystem and benthic/habitat impacts, although the methods for this are not well as developed as for the other areas the ERA workshop considered. Two broad methodologies, (i) The Australian-type approach: examine structural characters of a food web, extract indices reflecting vulnerability to being changed by fishing activity (to the extent these can be identified); (ii) use time series data available.

- In current data, there is change occurring. The key issue is does this matter? With maintenance of the system at a level of harvesting (e.g. maximum sustainable exploitation), would expect ecosystem to settle at some new state over time. Unexpected changes are a sign that what's happening is not understood well. In that vein, if changes are occurring despite the system being under consistent conditions for some time, this may be cause for concern. If the system is overly stressed, it will not be as resilient to pressure. If all predators, for example, are at M_{SY} the current state is very different from the 'original' system. Value judgments come into play re what is 'desirable'.

6. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (by email sign if hard copy)
- Are comments to be attributed?
- Timescale for completion, including further opportunities for stakeholder input

Confirmed



IMM Lead Auditor
email

Stakeholders By

MSC Interview Record Hoki Audit

IMM Attendees

Lead Auditor/Coordinator: Jo Akroyd

Team Members: Johanna Pierre

Stakeholders:

Affiliation

1.DOC

Representatives

Ian Angus, Kris Ramm, Russell Harding, Clinton Duffy (phone), Don Neale (phone), Laura Boren (phone)

Location:DOC Head Office, Wellington, NZ

Date: 17 November 2011

1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including

- 4th Annual Surveillance audit
- Assessment Team
- Intertek Moody Marine as independent CAB accredited to carry out MSC audits

Purpose of meeting – information collection , changes in management. Legislation operations and progress on conditions

Comments: Thanked for their participation and encouraged input into process.
Meeting Attendance record signed and confidentiality arrangements explained.

Explained the purpose of the audit as to seek the views of the client and the stakeholders re

- a. The fishery.
 - b. Its performance in relation to any relevant conditions of certification.
 - c. Issues relevant to the MSC's Principles and Criteria for Sustainable Fishing. Including selecting areas to inspect within the fishery for current or recent management activity for continued conformity with the MSC's Principles and Criteria for Sustainable Fishing, such as:
 - a. Review any potential or actual changes in management systems.
 - b. Review any changes or additions/deletions to regulations.
 - c. Review any personnel changes in science, management or industry to evaluate impact on the management of the fishery.
 - d. Review any potential changes to the scientific base of information, including stock assessments..
- Evaluate progress against conditions at each surveillance audit

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGOetc)

Government

3. Stakeholder Key Issues

- ERA: Involvement was last minute and more preparation time would have been helpful. Website provided useful information. The most controversial topics were benthic and ecosystem impacts.

- BOMECS: As a biodiversity surrogate, this is limited but the best one currently available. However, previous work shows that biologically-based classifications are more useful than environmental classifications and are better surrogates for biodiversity.

- Basking sharks: Uncertainty re population status, which may be long-term decline. Distribution is poorly known but NZ may be the southern hemisphere hotspot for this species. Basking sharks may form one

global population – is low genetic diversity reported worldwide. Fisheries captures occur in Hoki, but also BAR, SQU, BNS, BYX, and in coastal gillnets as well as deepwater and inshore trawl nets.

- Linkage: Links between science and management decisions concerning the hoki fisheries not always obvious.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

6. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- Are comments to be attributed?
- Timescale for completion, including further opportunities for stakeholder input



Confirmed

by email

IMM Lead Auditor

Stakeholders

MSC Interview Record eNGOs Hoki audit

IMM Attendees

Lead Auditor/Coordinator: Jo Akroyd

Team Members: Andre Punt, Johanna Pierre

Stakeholders:

Affiliation

1. WWF-NZ
2. Royal Forest and Bird Protection Society
Subedar

Location: WWF offices, Wellington, NZ

Representatives

Rebecca Bird Bob Zuur
Kevin Hackwell, Katrina

Date: 14 November 2011

1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including

- 4th Annual Surveillance audit
- Assessment Team
- Intertek Moody Marine as independent CAB accredited to carry out MSC audits
- Purpose of meeting – information collection , changes in management. Legislation operations and progress on conditions.

Comments:

Thanked the NGOs for their participation and encouraged NGOs to input into process. Meeting Attendance record signed and confidentiality arrangements explained.

Explained the purpose of the audit as to seek the views of the client and the stakeholders re

a. The fishery.

b. Its performance in relation to any relevant conditions of certification.

c. Issues relevant to the MSC's Principles and Criteria for Sustainable Fishing. Including selecting areas to inspect within the fishery for current or recent management activity for continued conformity with the MSC's Principles and Criteria for Sustainable Fishing, such as:

a. Review any potential or actual changes in management systems.

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c. Review any personnel changes in science, management or industry to evaluate impact on the management of the fishery.

d. Review any potential changes to the scientific base of information, including stock assessments. of any concerns of stakeholders.

Evaluate progress against conditions at each surveillance audit

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO etc)

E NGOs

3. Process issues raised by e NGOs

1. E NGOs felt that in previous audits they had provided information into the process but, despite this, some conditions had been closed that they believe should not have been and were particularly concerned that substantial submissions on these conditions had been largely ignored by the certification body in previous audits. They believe that once conditions have been “closed” it is much more difficult to engage on these issues and, if appropriate, reinstate conditions that should not have been closed. They are seeking a change in the MSC process to be able to have input into the audit process once the CAB has submitted its report.
2. Communication between the client group (DWG) and eNGOs still remains an issue. Although a large number of documents had been supplied to all stakeholders this occurred VERY late, not allowing enough time for due consideration prior to site visit. There were continuing problems with formal and informal meetings with DWG and often the eNGOs felt any invitations were of a “have to” nature for DWG rather than a “we value your input” nature. ENGOS would like to be involved in an at least quarterly engagement with DWG on progress with Conditions rather than a 1 * per year invitation. Although WWF had been involved in the ERA process they were concerned that follow up was being acted on by MFish and DWG without involvement with eNGOs. They considered the relationship with DWG had become more “adversary”. WWF believe that they have tried to encourage better communication with DWG but this hasn’t been the result. In relation to MFish Working Group meetings, although the eNGOs participated, and the meetings were open and transparent and provided useful information, the processes were suboptimal mostly due to inefficient and ineffective chairing.

4. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery?
(P1 – P2 – P3)

What information is available to allow us to determine the status of the fishery in relation to each issue?

WWF provided a detailed submission on the conditions 2 years ago and followed up in 2010. These included commentary re their concerns on premature closure of certification conditions. In their view, some of the conditions should not have been closed, and as some remain unaddressed still despite this being the final year of certification. In WWF’s view, there are still some outstanding and significant issues from the first certification, which was approximately 10 years ago

P2 The ERA was a useful compilation of information, e.g. providing new information on the trawl footprint and trophic impacts, both of which the ERA Panel noted as risks. However, stakeholder representation was not ideal, and nor was methodology used. The ENGOS are encouraged that ERA outcomes are feeding into management, but consider it unfortunate that the wider Panel hasn’t been involved in developing the fishery response to the issues the ERA highlighted. The eNGOs suggested that the ERA be based on the CSIRO methodology, but DWG did not accept this suggestion due to the perceived cost of this approach. The absence of clear management objectives limited the value of the ERA process, because it was not possible for the panel to assess risk in terms of probably of failing to reach a certain (specified) outcome.

There may be a broader issue of science quality in the future, given the range of providers and cost issues. The eNGOs noted MFish's standards document on research.

In relation to the TAC increase, the eNGOs commented that this is expected to lead to an increase in fishing effort, which will have flow on effects to retained, bycatch, and ETP species, as well as habitat and ecosystem impacts. For example, seabird bycatch rates have plateaued. So, at a higher fishing effort, more birds are expected to be captured/killed, ecosystem effects will be greater, and so on. While the stock assessment indicates that an TAC increase will not lead to depletion of the stock, greater environmental effects have not been addressed.

P3: WWF feel that is little opportunity to feedback into Conditions once they are closed because there is little incentive for the client to consider views. There are also major issues concerning consultation and stakeholder involvement in decision making processes.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

Written submission to follow – 7 -10 days

6. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- Timescale for completion, including further opportunities for stakeholder input

Confirmed



IMM Lead Auditor
Email

Stakeholders by

MSC Interview Record SeaFIC audit

IMM Attendees

Lead Auditor/Coordinator: Jo Akroyd

Team Members: Andre Punt, Johanna Pierre

Stakeholders:

Affiliation

1. New Zealand Seafood Industry Council
Macfarlane

Representatives

David Middleton, Alastair

Location:

Date: 15 November 2011

1. Introduction. MML Lead Auditor to introduce MSC assessment to Stakeholders, including

- 4th Annual Surveillance audit
 - Assessment Team
 - Intertek Moody Marine as independent CAB accredited to carry out MSC audits
- Purpose of meeting – information collection , changes in management. Legislation operations and progress on conditions

Comments: Thanked SeaFIC for their participation and encouraged input into process. Meeting Attendance record signed and confidentiality arrangements explained.

Explained the purpose of the audit as to seek the views of the client and the stakeholders re

a. The fishery.

b. Its performance in relation to any relevant conditions of certification.

c. Issues relevant to the MSC's Principles and Criteria for Sustainable Fishing. Including selecting areas to inspect within the fishery for current or recent management activity for continued conformity with the MSC's Principles and Criteria for Sustainable Fishing, such as:

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c. Review any personnel changes in science, management or industry to evaluate impact on the management of the fishery.

d. Review any potential changes to the scientific base of information, including stock assessments. of any concerns of stakeholders.

Evaluate progress against conditions at each surveillance audit

2. Status

What is the nature of the organizations interest in the fishery (e.g. client / science / management / industry / eNGO etc)

Sea Food Industry representatives

3. IMM Questions

Assessment team questions for stakeholder response

Changes in management, legislation etc progress on Conditions

4. Stakeholder Key comments

- There is no difference in principle between how Tier 2 species, such as the warehouse, are managed and how hoki is managed.
- There is a need for a clear understanding of what data are being collected and how the data will be used. The expectation for Tier 2 species is collection of basic data (such as catch, effort and survey data). David Middleton outlined a proposed project (Trident) which will involve (a) non-regulatory catch sampling [length, catch and effort] for inshore finfish, (b) comprehensive regular fisheries characterizations for deepwater species using catch and effort data, and (c) identifying genetic management procedures for Tier 2 species. Funding for this project is currently being sought from quota holders
- While developing management procedures for Tier 2 species is clearly the priority, there is no conceptual barrier to applying the same concepts to Tier 3 species.
- ERA went better than expected overall, once the false starts were past. The workshop itself had a 'core' membership which was then augmented by experts with specific knowledge contributing at various points. With respect to the ecosystem effects section, most people in attendance were in agreement but not all. Agreement may have been greater had all participants been in attendance for the discussion prior to the ecosystem discussions per se.
- The ERA exercise was useful, although the thresholds/limits/targets scores were being based on were not clear. There was no probabilistic scoring of risk (i.e. risk of what, against what). There is useful work underway which will contribute to the areas of discussion at the ERA workshop.
- With respect to ecosystem impacts, assessment/exploration of indices generated would be helpful, in terms of the utility of these indices for examining fishing impacts. That is, which indices identify things to worry about (from a science or fisheries management perspective)?, what does index X actually mean for an ecosystem?, etc.
- BOMECA: This was useful in the context of the workshop. As a piece of work, it is not well documented. However, it does provide useful pointers on potential research/management issues.
- There was a follow-up meeting to the ERA workshop, to which all participants were invited. A document was circulated that described the DWG response to the ERA. SeaFIC hasn't been involved subsequently in discussions with DWG about responses to the points raised at the ERA workshop or follow-up meeting. However, they have had discussions about the content of the 10-year Research Plan (particularly filling perceived 'gaps' in that). They have also requested a compiled list from MFish of information about projects contracted, to clarify what research is occurring.
- Splitting fish species into the MFish's Tier 1, 2, and 3 makes sense from a research planning perspective. Work on Tier 2 species comprises regular fishery characterization

and collecting data to establish an index of abundance. Once the information is collected, MFish is less clear about what to do with it, including how to interpret it.

- The MOU between MFish and DWG appears to have been an effective vehicle through which the two parties have worked together. It is somewhat opaque what happens inside that relationship, but it seems to have made for a more relaxed relationship, with industry involvement in management occurring at earlier stages than previously. However, the IPPs and such are clearly still considered by the Minister who has the final say in decision-making. The MOU clearly identifies the Ministry as the manager of the fishery, which is a classical approach and somewhat at odds with SeaFIC's proposition of devolving day to day responsibilities to industry – the 'manage our own ship' approach.

6. Closing

IMM Lead Auditor:

- Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- Are comments to be attributed?
- Timescale for completion, including further opportunities for stakeholder input

Confirmed



by email

IMM Lead Auditor

Stakeholders by