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Updating New Zealand's level two seabird risk assessment

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SUMMARY

New Zealand has made progress in reviewing and revising the seabird risk assessment that underpins its National Plan of Action (2013) to reduce the incidental catch of seabirds in New Zealand Fisheries. A workshop was held in November 2013 to review the inputs and associated outputs of the level two seabird risk assessment for the taxa with the highest risk ratios. The workshop considered that various data inputs needed to be modified according to evidence provided, and that these changes to the inputs will likely result in changes to the risk scores for 17 of the 26 species considered most at risk.

The risk assessment is currently being updated using the modified inputs, and this paper will be revised once the results have been finalised.

Actualización de la evaluación de riesgos de aves marinas de nivel dos de Nueva Zelandia

Nueva Zelandia ha avanzado con el estudio y revisión de la evaluación de riesgos para aves marinas, avalada por su Plan de acción nacional (2013), para reducir la captura incidental de aves marinas en las pesquerías neozelandesas. Se realizó un taller en noviembre de 2013 con el objetivo de estudiar los parámetros y resultados asociados de la evaluación de riesgos de nivel dos para los taxones de aves marinas con los mayores índices de riesgo. Durante el taller, se señaló que se debían modificar diversos parámetros de datos de acuerdo con las pruebas suministradas y que probablemente esas modificaciones se traduzcan en ciertos cambios en los índices de riesgo para 17 de las 26 especies consideradas de mayor riesgo.

En este momento, se está actualizando la evaluación de riesgos utilizando los parámetros modificados, y se revisará el presente documento en consecuencia una vez que se completen los resultados de tal actualización.

Mise à jour de l'évaluation de niveau deux des risques qu'encourent les oiseaux de mer en Nouvelle-Zélande

La Nouvelle-Zélande a accompli des progrès concernant le réexamen et la révision de l'évaluation des risques qu'encourent les oiseaux de mer sur lequel se fonde son Plan d'action national (2013) visant à réduire la capture accessoire incidente des oiseaux de mer dans les pêcheries de Nouvelle-Zélande. Un atelier s'est tenu en novembre 2013 pour examiner les contributions apportées à l'évaluation de niveau deux des risques qu'encourent les oiseaux de mer ainsi que les résultats qui en ont découlé pour les taxons affichant les ratios de risque les plus élevés. Il est ressorti de l'atelier que plusieurs données fournies devaient être modifiées en raison de nouvelles informations reçues, et que ces modifications impliqueraient des changements dans les cotes de risque de 17 des 26 espèces considérées comme étant les plus en danger.

L'évaluation des risques est actuellement mise à jour conformément aux données modifiées. Le présent document sera révisé une fois les résultats définitifs connus.

1. INTRODUCTION

This paper documents the progress New Zealand has made in regard to reviewing and updating the level two risk assessment used to underpin the National Plan of Action to reduce the incidental catch of seabirds in New Zealand Fisheries.

2. REVIEW WORKSHOP

The Ministry for Primary Industries convened an expert workshop on 19–20 November 2013 to review the level two seabird risk assessment results.

The core purpose of this workshop was to review the inputs and associated output of the level two seabird risk assessment for the taxa with the highest risk ratios as assessed by the level two seabird risk assessment in “Risk of commercial fisheries to New Zealand seabird populations”, a research report conducted by Dragonfly Science under contract to the Ministry for Primary Industries (Richard & Abraham 2013). The workshop specifically sought to determine whether the assessment of each species provides a reasonable assessment of risk. Underlying this is the intent to ensure that the prioritisation of further work and resources on seabirds in fisheries is most appropriately targeted where needed.

For each species:

- where there are data to suggest that the representation of risk may not be appropriate, the workshop aimed to document that information and suggest future work necessary to address the identified issues and modify the level two assessment accordingly; and
- if possible, in the context of the existing level two risk assessment framework, identify replacement input parameters or the imposition of Bayesian constraints on outputs consistent with the other data sources identified, to be implemented in the next iteration of the level two assessment.

As with all MPI fisheries science reviews, this review workshop was fundamentally about science quality assurance.

This review workshop was a scientific peer review of the output of the level two seabird risk assessment for the 26 seabird taxa with the highest risk ratios as assessed by the current implementation of the level two risk assessment (Richard & Abraham 2013), including the biological parameters and spatial distributions used to generate the outputs. The underlying method of risk assessment was out of scope for the workshop.

The workshop reviewed output for the 26 seabird taxa assessed to have the highest estimated risk ratios in the level two risk assessment (Figure 1, Richard & Abraham 2013); on the basis of these estimates these 26 seabird taxa were categorised at very high, high, medium or low fisheries-associated risk. Taxa categorised as being at negligible risk were not considered.

The workshop systematically reviewed the input data and other available information for the 26 seabird taxa with the highest risk ratios as assessed by the level two risk assessment. In summary, the results of the workshop are that:

- risk appeared to be overestimated for fourteen taxa, including black petrel;
- risk appeared to be reasonably estimated for nine taxa;
- risk appeared to be underestimated for three taxa: New Zealand king shag and Gibson's and Antipodean albatrosses.

A general preponderance of overestimated risk is acceptable in a risk assessment framework so long as results are used carefully. Risk assessments are generally designed to be precautionary in order to highlight gaps in information to direct future research accordingly. In contrast, any persistent significant underestimation of risk across many species is more problematic as a species may then not be subject to the additional research or management intervention required. Note however that the spatially explicit risk assessment framework is used not only to identify which species are potentially at risk, but also to inform choices about the likely effectiveness of various management options to reduce that risk, and to prioritize further research. In this context over-estimated risk scores for a particular species, fishery group, or area may lead to sub-optimal prioritization, and ultimately delay risk reduction interventions for those species genuinely at risk. For this reason, modification to improve the level two risk assessment consistent with the recommendations of this workshop is a high priority for all at-risk species, regardless of whether those modifications are expected to produce a decrease or an increase in overall species-level risk.

Where current risk estimates were thought to be biased in either direction, this workshop did not seek to replace or modify the existing estimates for each taxon, but rather gave advice on how to improve the risk assessment at the next iteration under the existing framework, and made recommendations for further research. In general, workshops like this should be seen as an important part of the risk assessment framework.

Where the workshop determined that the risk ratio (potential fatalities divided by PBR_1) was likely to have been overestimated, a change in the risk category (e.g., high, medium, low) for that species was not sought from the workshop, but it was taken as an indication that such a change was likely when the level two risk assessment was updated. Because of the complexity of the model, changes to risk category cannot be predicted accurately without a complete re-run of the level two risk assessment.

See the full report for the detailed recommendations for each species, available from Nathan Walker.

3. UPDATE OF NEW ZEALAND'S LEVEL TWO SEABIRD RISK ASSESSMENT

The level two risk assessment (Richard & Abraham 2013) is currently being revised based on the findings of the review workshop. Once the risk assessment is accepted as final by MPI, this paper will be revised and supplied to the Secretariat.

References

Richard, Y., and Abraham, E. R. 2013. Application of Potential Biological Removal methods to seabird populations. Final Research Report for research projects IPA2009/19 and IPA2009/20. Unpublished report held by Ministry for Primary Industries, Wellington. 32p.

ANNEX 1

TO BE REVISED.

ANNEX 2

TO BE REVISED.