Agreement on the Conservation of Albatrosses and Petrels

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Criteria for Best Practice Seabird Bycatch Mitigation

Edward F. Melvin,

Washington Sea Grant, University of Washington

USA

SUMMARY

In the context of ACAP, the Seabird Bycatch Working Group updates reviews seabird bycatch mitigation measures for pelagic longline fisheries, trawl fisheries and demersal longline fisheries1 based on the results of studies to develop, test and improve fishery practices designed to reduce seabird interactions and mortalities from fishing gear (ACAP 2011, Annexes 2, 4, and 6). Based on these reviews the working group provides summary advice statements for these same fisheries that distil research results in to specific recommendations and specifications (Annexes 3, 5, and 7). These recommendations are widely referred to as best practice mitigation measures. This working paper aims to advance specific criteria to evaluate seabird bycatch mitigation measures for ACAP best practice status based on the FAO best practice technical guidelines and the seabird bycatch literature. If supported by the working group and the advisory committee, these criteria could serve as a checklist for evaluating seabird bycatch mitigation measures for best practice mitigation status.

RECOMMENDATIONS

The following are proposed criteria for ACAP recommended best practice mitigation measures to reduce the incidental mortality of albatrosses and petrels in fishing operations. Fishing technologies and practices shall be shown, through experimental research, to:

1. Significantly reduce the incidental mortality of seabirds to the lowest achievable levels as demonstrated by experimental research.
2. Have clear and proven specifications and minimum performance standards for their deployment and use.
3. Be practical, safe, cost effective and widely available.

[1] Although gillnet fisheries pose a considerable threat to albatrosses and petrels, reviews and specific recommendation have yet to be developed due to the paucity of research in this area.

4. Not significantly increase the bycatch of other taxa.
5. Not significantly decrease the catch rate of target fishes.
6. Include direction for monitoring and enforcement of recommended best practice fishing technologies and practices including their specifications and minimum performance standards.

Criterios de las mejores prácticas para la mitigación de la captura secundaria de aves marinas

En el contexto del ACAP, el Grupo de Trabajo sobre Captura Secundaria de Aves Marinas actualiza las revisiones de las medidas de mitigación de la captura secundaria de aves marinas para las pesquerías con palangre pelágico, las pesquerías de arrastre y las pesquerías demersales con palangre2 basadas en los resultados de los estudios, para desarrollar, probar y mejorar las prácticas pesqueras diseñadas para reducir las interacciones y mortalidad de aves marinas provocadas por los equipos de pesca (ACAP 2011, Anexos 2, 4 y 6). Sobre la base de dichas revisiones, el grupo de trabajo proporciona un resumen de consejos para estas mismas pesquerías que sintetiza los resultados de las investigaciones en recomendaciones específicas y especificaciones (Anexos 3, 5 y 7). Estas recomendaciones se conocen en general como medidas de mitigación con base en las mejores prácticas. Este grupo de trabajo tiene por objeto presentar criterios específicos para evaluar las medidas de mitigación de la captura secundaria de aves marinas para la condición de mejores prácticas del ACAP en las directrices técnicas de mejores prácticas de la FAO y la literatura sobre captura secundaria de aves marinas. Si cuentan con el apoyo del grupo de trabajo y el comité asesor, estos criterios deben usarse como una lista de verificación para evaluar las medidas de mitigación de la captura secundaria de aves marinas para la condición de mitigación con base en las mejores prácticas.

RECOMENDACIONES

A continuación se presentan los criterios propuestos para las medidas de mitigación con base en las mejores prácticas recomendadas del ACAP para reducir la mortalidad incidental de albatros y petreles en las operaciones pesqueras. Se debe demostrar a través de investigaciones experimentales que las tecnologías y prácticas pesqueras:

1. Reducen significativamente la mortalidad incidental de las aves marinas a los niveles más bajos posibles según lo demostrado en las investigaciones experimentales.
2. Tienen especificaciones claras y comprobadas, e indicadores de desempeño mínimos para su despliegue y uso.
3. Son prácticas, seguras, económicas y ampliamente accesibles.
4. No aumentan significativamente el aumento de la captura secundaria de otros

[2] Si bien las pesquerías con red de enmalle representan una amenaza importante para los albatros y petreles, aún no se han realizado revisiones y recomendaciones específicas debido a las pocas investigaciones en esta área.

taxones.

5. No reducen significativamente la tasa de captura de los peces objetivo.
6. Incluyen instrucciones para el monitoreo y la aplicación de las tecnologías y prácticas con base en las mejores prácticas recomendadas incluidas sus especificaciones e índices de desempeño mínimos.

Critères de bonnes pratiques pour l'atténuation des captures accidentelles d'oiseaux marins

Dans le cadre de l'ACAP, le GTCA met à jour l'examen des mesures d'atténuation des captures accidentelles d'oiseaux marins pour la pêche à la palangre pélagique, la pêche chalutière et la pêche à la palangre démersale sur la base des conclusions des études pour développer, tester et améliorer les pratiques de pêche afin de réduire les interactions avec les oiseaux marins et les décès dûs aux engins de pêche (ACAP 2011, Annexes 2, 4 et 6). Sur la base de ces examens, le Groupe de travail propose un résumé de ses conseils pour les pêcheries qui fournissent les résultats de leurs recherches sous la forme de recommandations et de prérequis (Annexes 3, 5 et 7). Ces recommandations sont largement considérées comme les bonnes pratiques relatives aux mesures d'atténuation. Ce document propose des critères spécifiques permettant d'évaluer les mesures d'atténuation des captures accidentelles d'oiseaux marins afin de parvenir à des pratiques exemplaires de l'ACAP basées sur les lignes directrices techniques de la FAO et la littérature spécialisée dans le domaine des captures accidentelles d'oiseaux marins. S'ils sont avalisés par le Groupe de travail et le Comité consultatif, ces critères pourraient servir de référence pour l'évaluation des mesures d'atténuation des captures accidentelles d'oiseaux marins.

RECOMMANDATIONS

Les critères ci-dessous concernent les mesures d'atténuation recommandées par l'ACAP pour réduire les décès d'albatros et de pétrel au cours des opérations de pêche. Les technologies et pratiques halieutiques devraient être connues, par le biais de recherches expérimentales, pour :

1. Réduire de manière significative, et au minimum, les décès accidentels d'oiseaux marins comme démontré par les recherches expérimentales.
2. Disposer de prérequis clairs et de normes de performance minimales pour leur utilisation.
3. Être pratiques, sûres, rentables et largement disponibles.
4. Ne pas augmenter de manière significative la capture accidentelle d'autres espèces.
5. Ne pas réduire de manière significative le taux de capture de poissons-cibles.
6. Diriger le contrôle et la mise en œuvre des bonnes pratiques, des technologies de pêche y compris leurs prérequis et les normes de performance minimales.

1. INTRODUCTION

1.1. Although the term best practice mitigation is used by ACAP and others to describe recommended fishing technologies and techniques that most effectively reduce seabird bycatch in commercial fishing gear, definitions of best practice are elusive. The Oxford Dictionary defines best practice as "commercial or professional procedures that are accepted or prescribed as being correct or most effective". Several authors refer to best practice seabird bycatch mitigation, but fail to specifically define the term or the specific criteria by which this status is determined (Anderson et al., 2012; Bull 2009; Dietrich et al. 2008; Gilman 2011). A number of papers review seabird bycatch mitigation measures based on qualities such as efficiency, suitability, practicality, safety and cost, but without reference to the term best practice (Brothers et al., 1999; Bull 2007; Gilman et al., 2003 and 2005; Lokkeborg 2008 and 2011; Melvin and Parrish 2001).

The most explicit advice for best practice seabird bycatch mitigation measures was outlined in the FAO expert consultation for IPOA/NPOA-seabirds (FAO 2008 and 2009). These documents outline Best Practice Technical Guidelines for mitigation measures and related standards (#4) and Mitigation Research (#5) for consideration by States and RFMOs. The following excerpt common to both documents details these best practice guidelines:

"**Best Practice Technical Guideline No. 4 – Mitigation measures and related standards**

States and RFMO/As should consider:

(i) Prescribing appropriate mitigation methods that are proven to be effective, practical and cost effective for the fishing industry.

(ii) Combining mitigation measures or devices to maximize their effectiveness.

(iii) Providing information for fishers and others that explain the operational aspects

of the mitigation devices and their precise operational configuration (e.g. Løkkeborg (2008).

(iv) Regularly reviewing the implementation and performance of mitigation measures, such as by a technical working group.

(v) Prescribing technical specifications for their design, construction and performance to optimize their effectiveness.

(vi) Ensuring that plans retain flexibility to allow fishers to use effective combinations of multiple mitigation measures."

"**Best Practice Technical Guideline No. 5 – Mitigation research**

States and RFMO/As should:

(i) Encourage innovation through collaboration of fishing industry, scientists and resource managers. This should include investigating the operational characteristics of new measures as an initial research step.

(ii) Ensure that plans provide the opportunity for research to test the effectiveness of new mitigation measures and to facilitate the continued refinement of existing mitigation measures.

(iii) Support controlled experiments that investigate the effectiveness of single or combined mitigation measures under commercial fishing conditions.

(iv) Identify and develop new measures to enable adaptation to changing fishing practices.

(v) Encourage collaborative research between countries with fisheries that overlap with the distribution of seabirds that forage in distant waters."

In the context of ACAP the Seabird Bycatch Working Group updates reviews seabird bycatch mitigation measures for pelagic longline fisheries, trawl fisheries and demersal longline fisheries[3] based on the results of studies to develop, test and improve fishery practices that are designed to reduce seabird interactions and mortalities from fishing gear (ACAP 2011, Annexes 2, 4, and 6). Based on these reviews the working group provides summary advice statements for these same fisheries that distill research results in to specific recommendations and specifications (Annexes 3, 5, and 7). These recommendations are widely referred to as best practice mitigation measures. This working paper aims to advance specific criteria to evaluate seabird bycatch mitigation measures for ACAP best practice status for recommendation to RFMOs and longline nations based on the FAO best practice technical guidelines and the seabird bycatch literature. If supported by the working group and the advisory committee, these criteria could serve as a checklist for evaluating seabird bycatch mitigation measures for best practice mitigation status.

2. RECOMMENDATIONS

2.1 The following are proposed criteria for ACAP recommended best practice fishing technologies and techniques to reduce the incidental mortality of albatrosses and petrels in fishing operations.

- Individual fishing technologies and practices shall be shown to significantly reduce the rate of seabird incidental mortality to the lowest achievable levels as demonstrated by experimental research. Experience has shown that experimental research comparing the performance of candidate mitigation technologies to a control of no deterrent, where possible, or to status quo in the fishery, yields definitive results (Melvin and Roberson 2000). Research questions imposed on fishery observer data after it has been collected regarding the relative performance of mitigation approaches are plagued with a myriad of confounding factors (Løkkeborg, 2008, 2011). Where a significant relationship is demonstrated between seabird behavior and seabird mortality in a particular system or seabird assemblage, significant reductions in seabird behaviors, such as the rate of seabirds attacking baited hooks, can serve as a proxy for reduced seabird mortality. Ideally, when simultaneous use of fishing technologies and practices is recommended as best practice, research shall demonstrate significantly improved performance of the combined measures.
- Fishing technologies and practices, or combination thereof, shall have clear and proven specifications and minimum performance standards for their deployment and use. Examples would include: specific bird scaring line designs (lengths, streamer length and materials; etc.), number (one vs. two) and deployment specifications (such as aerial extent), night fishing defined by the time between nautical dusk and nautical dawn, and line weighting configurations specifying mass and placement of weights or weighted sections.

[3] Although gillnet fisheries pose a considerable threat to albatrosses and petrels, reviews and specific recommendation have yet to be developed due to the paucity of research in this area.

- Fishing technologies and practices shall be demonstrated to be practical, safe, cost effective and widely available (Løkkeborg, 2008, 2011). Research staged on fishing vessels engaged in production fishing are likely to select for seabird bycatch reduction measures that meet these criteria .
- Fishing technologies and practices shall not significantly increase the bycatch of other taxa (Melvin and Parrish 2001). For example, measures that increase the likelihood of sea turtle or shark catches shall not be considered best practice.
- Fishing technologies and practices shall not significantly decrease the catch rate of target fishes (Melvin and Parrish 2001). Measures that compromise efficiency of fishing operations are unlikely to meet with acceptance and compliance.
- Specifications for monitoring and enforcement of recommended best practice fishing technologies and practices and their specification and minimum performance standards should be specified. Examples might include port inspections of branchlines to determine compliance with branch line weighting requirements, determination of the presence of davits (tori poles) to support bird scaring lines, inspections of bird scaring lines for conformance with design requirements.

3. LITERATURE CITED

ACAP, 2011. Report of the Sixth Meeting of the Advisory Committee Guayaquil, Ecuador, 29 August – 2 September 2011. 177 pages.

Anderson, O.R.J., Small, C.J., Croxall, J.P., Dunn, E.K., Sullivan, B.J., Yates, O., Black, A., 2011. Global seabird bycatch in longline fisheries. End. Sp. Res. 14, 91–106.

Brothers, N., Cooper, J., Løkkeborg, S., 1999a. The incidental catch of seabirds by longline fisheries: worldwide review and technical guidelines for mitigation. FAO fisheries circular. No. 937. FAO, Rome.

Bull, L. S., 2007. Reducing seabird bycatch in longline, trawl and gillnet fisheries. Fish and Fisheries, 8, 31–56.

Dietrich, K. S., E. F. Melvin , and L. Conquest. 2008. Integrated weight longlines with paired streamer lines – Best practice to prevent seabird bycatch in demersal longline fisheries. Biol. Cons.141:1793-1805.

Gilman, E.L. 2011. Bycatch governance and best practice mitigation technology in global tuna fisheries. Marine Policy 35 (2011) 590–609.

FAO. 2008. Report of the Expert Consultation on Best Practice Technical Guidelines for IPOA/NPOA–Seabirds. Bergen Norway, 2–5 September 2008. FAO Fisheries and Aquaculture Report. No. 880. Rome. 37p.

FAO. 2009. Fishing operations. 2. Best practices to reduce incidental catch of seabirds in capture fisheries.
FAO Technical Guidelines for Responsible Fisheries . No. 1, Suppl. 2. Rome, FAO. 49p.

Løkkeborg, S., 2008. Review and assessment of mitigation measures to reduce incidental catch of seabirds in longline, trawl and gillnet fisheries. FAO Fisheries and Aquaculture Circular No. 1040. Food and Agriculture Organization of the United Nations, Rome.

Løkkeborg, S., 2011. Best practices to mitigate seabird bycatch in longline, trawl and gillnet fisheries – efficiency and practical applicability. Mar. Ecol. Prog. Ser. 435, 285-303.

Melvin, E.F., and Parrish, J.K.,. 2001. Symposium synthesis. In: Melvin E.F., Parrish, J.K. (eds) Seabird bycatch: trends, roadblocks, and solutions. University of Alaska Sea Grant, AK-SG-01-01, Fairbanks, 1-7.

Melvin, E.F, Robertson G., 2000. Appendix 3: Seabird mitigation research in longline fisheries: status and priorities for future research and actions. In: Cooper, J. (Ed.), Albatross And Petrel Mortality From Longline Fishing, International Workshop, Honolulu, HI, 11-12 May 2000. Marine Ornithology. 28,178-181.