Agreement on the Conservation of Albatrosses and Petrels

Twelfth Meeting of the Seabird Bycatch Working Group

Lima, Peru, 5 – 7 August 2024

Minimum Weight at the Hook Allowance of 50 g Inclusive of Hook Weight for Pelagic Longlines

Nigel Brothers

SUMMARY

When guidelines for best practice pelagic longline weighting were formulated, variability of hook weight was not taken into account. Hook weight becomes significant if line weight is added at the hook instead of away from the hook. This topic has been studied (Brothers 2009) and the issue considered without resolution by the ACAP (SBWG10 Inf 09, SBWG11 Doc15). The addition of weight at the hook, where it is most effective, is gaining operational acceptance.

There are five recognised operational improvements resulting from putting weight at the hook (Robertson et al 2013, Brothers 2009). The two-fold mitigation improvement is a faster sink time and a more immediate sink response. These benefits are achieved by weighting at the hook rather than placing this same weight at any currently specified maximum distance from the hook.

Success of an alternate line weighting option, such as a 'heavy hook', is dependent on providing fishers with an operationally agreeable product at a competitive cost, and also overcoming any new product reticence. More weight involves increased cost in both material and freight. Adherence to current guidelines and CMMs entails 10 g more weight at the hook than necessary.

It is proposed therefore in pelagic fisheries mitigation guidelines that line weighting at the hook be permissible using minimum 50 g total inclusive of hook weight.

It is a priority this be adopted across all relevant tRFMOs because otherwise the current CMMs only permit a minimum weight addition of 40 g at the hook with no consideration to hook weight. There is little to no mitigation performance gain by the extra 10g of weight added (if at the hook) and since 40g of added weight is acceptable in the guidelines if a fisher is using 10g hooks, a total weight minimum allowance of 50 g is only logical.

While adding 40g to a 10g hook makes sense, the addition of that same regulatory weight amount to a typical 18 g - 22 g hook results in excessive weight and little to no mitigation performance gain.

RECOMMENDATIONS

1. SBWG add to pelagic mitigation guidelines that 50 g inclusive of hook weight be an acceptable line weighting arrangement.
2. ACAP's RFMO engagement strategy adds the above to the revision process of CMM 2018-03 in preparation for submission to the 21st Regular Session of the WCPFC for approval.

Peso mínimo permitido en el anzuelo de 50 g, incluido el peso del anzuelo, para palangres pelágicos

RESUMEN

Cuando se formularon las directrices para las mejores prácticas de lastrado de palangre pelágico, no se tuvieron en cuenta los diferentes pesos de los anzuelos. El peso del anzuelo se vuelve importante si el peso de la línea se agrega al anzuelo en lugar de que esté alejado del anzuelo. Se ha estudiado este tema (Brothers 2009), y el ACAP considera que este problema se encuentra sin resolución (SBWG10 Inf 09, SBWG11 Doc 15). La suma de peso en el anzuelo, donde es más eficaz, está ganando aceptación operativa.

Al poner peso en el anzuelo, se obtienen cinco mejoras operativas reconocidas (Robertson et al, 2013; Brothers, 2009). La doble mejora de mitigación consiste en un tiempo de hundimiento más rápido y una respuesta de hundimiento más inmediata. Estos beneficios se logran al colocar el peso en el anzuelo en lugar de colocar este mismo peso a cualquier distancia máxima especificada actualmente desde el anzuelo.

El éxito de una opción alternativa de lastrado de líneas, como un "anzuelo pesado", depende de que se proporcione a los pescadores un producto aceptable desde el punto de vista operativo a un costo competitivo, y también de que se supere cualquier reticencia a los nuevos productos. Más peso conlleva un mayor costo tanto en material como en transporte. El cumplimiento de las directrices y CMM actuales implica 10 g más del peso necesario en el anzuelo.

Por lo tanto, en las directrices para la mitigación de las pesquerías pelágicas se propone que se permita el lastrado de líneas en el anzuelo utilizando un mínimo de 50 g en total, incluido el peso del anzuelo.

Es prioritario que esto se adopte en todas las OROP de atún pertinentes porque, de lo contrario, las CMM actuales solo permiten una adición de peso mínimo de 40 g en el anzuelo sin tener en cuenta el peso del anzuelo. Los 10 g adicionales de peso agregado (si está en el anzuelo) brindan poca o ninguna mejora en el rendimiento de mitigación, y, dado que 40 g de peso adicional son aceptables en las directrices si un pescador usa anzuelos de 10 g, una asignación mínima de peso total de 50 g es lógica.

Si bien agregar 40 g a un anzuelo de 10 g tiene sentido, la adición de esa misma cantidad de peso reglamentario a un anzuelo típico de 18 g a 22 g da como resultado un peso excesivo y poca o ninguna mejora de rendimiento de mitigación

RECOMENDACIONES

1. El GdTCS añade a las directrices de mitigación pelágica que 50 g, incluido el peso del anzuelo, sea un peso aceptable de lastrado de líneas.
2. La estrategia de interacción con las OROP de ACAP agrega lo anterior al proceso de revisión de CMM 2018-03 en preparación para su presentación a la 21.ª Sesión Ordinaria de la WCPFC para su aprobación.

Modification du lestage minimum des hameçons à 50 g (poids de l'hameçon compris) pour les palangres pélagiques

RÉSUMÉ

Lors de la formulation des lignes directrices sur les bonnes pratiques en matière de pondération des palangres pélagiques, la variabilité du poids des hameçons n'a pas été prise en compte. Or le poids de l'hameçon devient significatif si le lest est ajouté au niveau de l'hameçon plutôt qu'à un autre endroit. Ce sujet a été étudié (Brothers 2009) et la question examinée sans résolution par l'ACAP (SBWG10 Inf 09, SBWG11 Doc15). L'ajout d'un lest au niveau de l'hameçon, là où il est le plus efficace, est de plus en plus accepté sur le plan opérationnel.

Cinq améliorations opérationnelles reconnues résultent du lestage de l'hameçon (Robertson et al. 2013, Brothers 2009). La double amélioration de l'atténuation est la suivante : un taux d'immersion plus rapide et une réaction à l'immersion plus immédiate. Ces avantages sont obtenus en plaçant le lest sur l'hameçon, plutôt qu'à la distance maximale actuellement spécifiée par rapport à l'hameçon.

Pour qu'une autre option de pondération de ligne, telle qu'un « hameçon lourd », soit adoptée avec succès, il conviendrait de fournir aux pêcheurs un produit acceptable sur le plan opérationnel à un coût compétitif ; il faudrait également surmonter les réticences à l'égard d'un nouveau produit. Un lestage accru implique une augmentation des coûts de matériaux et de fret. Le respect des directives et des MCG en vigueur implique 10g additionnels au niveau de l'hameçon.

Il est donc proposé, dans les lignes directrices en matière d'atténuation à destination des pêcheries pélagiques, que la pondération des lignes au niveau de l'hameçon soit autorisée en utilisant un total minimum de 50 g, poids de l'hameçon compris.

L'adoption de cette mesure dans l'ensemble des ORGP concernées est prioritaire ; en effet, les MGC actuelles n'autorisent qu'une augmentation de 40 g minimum au niveau de l'hameçon, sans tenir compte de son poids. Il n'y a que peu ou pas de gain de performance en matière d'atténuation avec l'ajout de 10 g de lest supplémentaire (s'il se trouve au niveau

de l'hameçon) ; par ailleurs, dans la mesure où 40 g de lest supplémentaire sont admis par les directives si un pêcheur utilise des hameçons de 10 g, une allocation de poids total minimale de 50 g est tout à fait logique.

Bien qu'il paraisse cohérent d'ajouter 40 g à un hameçon de 10 g, l'ajout de ce même poids réglementaire à un hameçon typique de 18 g à 22 g entraîne un poids excessif et peu ou pas de gain de performance en matière d'atténuation.

RECOMMANDATIONS

1. Le GTCA ajoute aux lignes directrices sur l'atténuation de la pêche pélagiques que 50 g, poids de l'hameçon inclus, représente une configuration acceptable de pondération de la ligne.
2. La stratégie d'interaction de l'ACAP avec les ORGP ajoute ce qui précède au processus de révision de la MCG 2018-03 en vue de sa soumission à la 21e session ordinaire de la WCPFC pour approbation.

EXPANDING EXISTING LINE WEIGHTING GUIDELINES

Current ACAP pelagic longline guidelines for line weighting which have been included in CMMs of RFMOs, accommodate no less than 40g if added at the hook, irrespective of hook weight, even though it is permissible for 40 g to be placed up to 0.5 m away from a hook of any weight. The insignificant improvement in sink rate performance (SBWG 11 Doc 15) gained by adding 40 g instead of 30g or even 20 g at or close to hooks (table 1) supports the case for a 50 g minimum at-hook weight allowance, particularly if the range in hook weights is taken into account.

Data provided in Tables 1 and 2 was obtained by sink rate experiments using the methodology described in Brothers (2009. These experiments measure the differences in sink rate performance with varying amounts of weight, including hook weight, in a far more accurate way than is possible during typical longline setting operations. Sink times were measured manually rather than electronically, to a depth of 5 m (10 repetitions for each gear change with bait size controlled), from a stationery vessel, thus removing the many other variables encountered on an operational longline vessel.

Table 2 indicates that a 52 g heavy hook sinks to 5m 0.85 seconds faster than a regular hook with 40 g or 45 g added at the permissible distance of 0.5 m. In addition, sink time to 5 m depth is similar between a hook weighing 52 g (8.61sec) and 62 g (7.50 sec) and this sink rate is comparable to current best practice weighting performance. There is also very little difference in sink time between 40 g and 45 g either at 0.5 m or 1 m from the hook.

Slower sinking individual baited hooks pose the greatest seabird capture risk. The slowest unweighted hook takes up to 24.75 sec to reach 5 m depth whereas the slowest weighted hook takes 10.47 sec (52 g hook); this is a 1.6 sec faster sink rate than if 40g weight was to be placed at 0.5 m.

ACAP pelagic longline seabird bycatch mitigation guidelines for line weighting have been incorporated into the CMMs of tRFMOs. To adhere to the current guidelines, fishers must use no less than 40 g, even though 30 g delivers an equivalent performance if added to a 22 g hook or as allowed 40 g, up to 0.5 m away (30g is more economical and operationally superior). As NZ is currently leading a review (CCSBT-ERS/2406/Info 05, Info 10) of WCPFC's CMM 2018-03, it is important to add this extra line weighting option to the current BP guidelines. Unless this happens the current RFMO line weighting requirements will continue to constrain mitigation options and efficacy outcomes for the foreseeable future, especially in the evolution of better weight-at-the-hook options. The success of a 'heavy hook' is dependent on its ease of use and its relative cost when compared to alternatives. The heavier the hook is, the greater the manufacture and shipping costs, so it is counter-productive to make the hook heavier than it needs to be, especially when extra weight does not improve the sink rate.

Table 1. Sink time (sec) to 5 m depth of 4 different weight hooks with the removal in 10 g increments of weight from the current 40 g permissible minimum line weight, (data is from Brothers 2009 table 9 plus new data, using the same methodology).

Hook weight (g)	**Time(sec) to 5 m + 0 g**	**Time(sec) to 5 m + 40 g**	**Time (sec) to 5 m + 30 g**	**Time (sec) to 5 m + 20 g**	**Time (sec) to 5 m + 10 g**
8	18.5	9.5	-	9.5	11.5
18	15.5	7.5	-	8.0	10.0
22	16.5	7.5	8.6	-	-
24	12.5	8.0	-	8.5	11.5

REFERENCES

Brothers N (2023) Procella Hook development update and heavy hook inclusion in ACAP best practice pelagic longline seabird bycatch mitigation advice. In: ACAP - 11th Meeting of the Seabird Bycatch Working Group. SBWG11 Doc 15, Edinburgh, UK

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Robertson, G., Candy, S. & Hall, S. (2013). New branch line weighting regimes to reduce the risk of seabird mortality in pelagic longline fisheries without affecting fish catch. Aquatic Conservation: Marine and Freshwater Ecosystems. 23. 10.1002/aqc.2346.

Table 2. Sink times (sec) to 5 metre depth of different line weighting configurations using size 16 baited 22 g, 52 g & 62 g circle hooks.

Weight & distance from hook	**Bait weight (g)**	**Sink time (sec) to 5 m depth**										**Mean**	**SD**	**Combined Mean**	**Combined SD**
22 g hook only	170	16.59	13.94	13.98	13.29	11.71	13.27	15.84	16.54	15.35	15.05	14.55	1.51	16.51	3.99
	320	24.75	19.78	17.37	14.75	14.75	22.95	24.15	11.55	12.53	22.15	18.47	4.68		
+40 g@0.5 m	170	10.10	10.25	9.25	8.94	9.57	9.50	12.07	9.78	8.28	10.12	9.79	0.95	9.46	0.83
	320	8.53	9.03	8.69	9.25	9.19	9.53	8.40	8.82	9.97	9.97	9.14	0.53		
+40 g@1 m	170	8.56	10.53	9.66	9.81	10.28	10.85	11.44	9.13	11.03	8.59	9.99	0.96	9.51	1.04
	320	9.13	8.90	11.06	8.13	8.72	9.38	9.29	9.56	7.56	8.56	9.03	0.89		
+45 g@ 0.5 m	170	9.60	9.50	10.22	9.82	10.03	9.06	10.06	9.94	10.18	9.81	9.82	0.34	9.42	0.66
	320	8.82	9.50	8.28	9.65	9.16	9.35	8.22	8.50	8.37	10.28	9.01	0.65		
+45 g@ 1 m	170	10.25	10.60	9.69	11.0	10.28	9.72	10.15	9.53	9.68	10.25	10.12	0.44	9.78	0.74
	320	8.87	9.50	9.47	9.97	7.50	10.26	9.28	9.10	9.85	10.58	9.44	0.81		
52 g hook only	170	7.65	8.28	7.06	9.31	7.41	7.82	7.84	8.22	8.90	9.93	8.24	0.85	8.61	0.93
	320	8.25	9.90	8.90	9.72	7.79	7.97	10.47	8.22	9.40	9.16	8.98	0.86		
62 g hook only	170	9.16	8.31	8.53	8.59	9.43	9.37	9.00	9.16	9.00	9.44	9.00	0.38	7.50	1.54
	320	5.53	6.00	5.85	5.69	5.78	6.63	6.13	6.53	6.18	5.72	5.99	0.37		