

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p>Eighth Meeting of the Seabird Bycatch Working Group</p> <p><i>Wellington, New Zealand, 4 – 6 September 2017</i></p> <p>Bycatch Mitigation Factsheets - New Designs and Updates</p> <p><i>Rory Crawford (BirdLife International) and Anton Wolfaardt</i></p>
---	---

SUMMARY

At SBWG7, it was noted that there is considerable duplication in the content of the ACAP Review and Best Practice Advice documents on the one hand and the Mitigation Fact Sheets on the other. Rather than integrating these two documents, the SBWG and AC recommended that they are retained as separate documents with appropriate links between them. The SBWG and AC further recommended that when the Mitigation Fact Sheets are next reviewed, they be simplified to better support practical implementation of bycatch mitigation measures. Updates to the recommended specifications for line weighting agreed at SBWG7 and AC9, and the new factsheet required for hook shielding devices provided an opportunity to trial new, simplified designs to improve the utility of the fact sheets for stakeholder outreach. Three proposed new designs are presented for consideration and approval by the SBWG and AC; soliciting feedback from industry contacts is also proposed.

RECOMMENDATIONS

The Seabird Bycatch Working Group is asked to:

1. Comment on the **suitability of the different design proposals**, potentially highlighting a preference for one.
2. Comment on the **content** of the new hook shielding devices sheet and the updated line weighting sheet.
3. Agree to update the full suite of factsheets, dependent on agreed amendments from SBWG and based on feedback from outreach 'testing'.

Hojas informativas sobre mitigación de la captura secundaria: nuevos diseños y actualizaciones

RESUMEN

En la GdTCS7, se advirtió que existía una duplicación considerable en el contenido de los documentos del ACAP sobre revisión y recomendaciones de mejores prácticas, por un lado, y de las Hojas informativas sobre mitigación, por el otro. En lugar de integrar los dos documentos, el GdTCS y el Comité Asesor (CA) recomendaron mantenerlos como documentos independientes, con los enlaces adecuados entre ambos. A su vez, el GdTCS y el CA recomendaron simplificar las Hojas informativas sobre mitigación la próxima vez que se revisaran para que, de esa forma, respaldaran mejor la implementación práctica de las medidas de mitigación de captura secundaria. Las actualizaciones de las especificaciones recomendadas para el lastrado de brazoladas acordadas en la GdTCS7 y la CA9, junto con la nueva hoja informativa requerida para los dispositivos de protección de anzuelos, permitieron probar diseños nuevos y simplificados para que las hojas informativas les resultaran más útiles para la concientización de las partes interesadas. Se presentan tres propuestas de nuevos diseños para la consideración y aprobación del GdTCS y el CA; asimismo, se propone que distintos contactos de la industria brinden sus opiniones.

RECOMENDACIONES

Se solicita al Grupo de Trabajo sobre Captura Secundaria que tenga a bien:

1. Comentar **cuán adecuadas son las diferentes propuestas de diseño**, con la posibilidad de remarcar su preferencia por alguna.
2. Comentar sobre el **contenido** de la nueva hoja sobre dispositivos de protección de anzuelos y la hoja actualizada sobre lastrado de brazoladas.
3. Acordar la actualización del juego completo de hojas informativas, en función de las enmiendas acordadas por el GdTCS y basándose en los comentarios recibidos de las “pruebas” de concientización.

Fiches pratiques sur l'atténuation des captures accessoires - Nouveaux modèles et mises à jour

RÉSUMÉ

Lors du GTCA7, il a été souligné que de nombreux doublons existaient dans le contenu des documents de révision et de conseils sur les bonnes pratiques de l'ACAP, d'une part, et des fiches pratiques sur la réduction des captures accessoires, d'autre part. Au lieu d'intégrer ces deux documents, le GTCA et le CC ont recommandé de préserver les deux types de documents en établissant des liens appropriés entre eux. Le GTCA et le CC ont également recommandé que les fiches pratiques sur la réduction soient simplifiées lors de leur prochaine révision pour mieux promouvoir la mise en œuvre pratique des mesures de

réduction des captures accessoires. Les mises à jour des spécifications recommandées pour le lestage des lignes convenues lors du GTCA7 et du CC9, ainsi que la nouvelle fiche pratique requise sur les dispositifs de protection de l'hameçon étaient l'occasion d'essayer de nouveaux modèles simplifiés destinés à accroître l'utilité des fiches pratiques pour toucher davantage d'acteurs. Trois nouveaux modèles proposés sont présentés pour examen et approbation par le GTCA et le CC ; il est également proposé de demander les observations du secteur.

RECOMMANDATIONS

Il est demandé au Groupe de travail sur la capture accessoire des oiseaux marins de :

1. Émettre des observations sur le **caractère approprié des différentes propositions de modèles**, en indiquant éventuellement une préférence pour l'un d'entre eux.
2. Émettre des observations sur le **contenu** de la nouvelle fiche sur les dispositifs de protection de l'hameçon et de la version mise à jour de la fiche sur le lestage des lignes.
3. Accepter de mettre à jour l'intégralité des fiches pratiques en fonction des modifications acceptées du GTCA et des observations issues des « tests » de diffusion.

1. OUTCOMES OF SBWG7 AND ADDITIONAL WORK

At SBWG7, the following action was agreed regarding updates to the BirdLife/ACAP Seabird Bycatch Mitigation Factsheets:

“The mitigation factsheet on line-weighting in pelagic longline fisheries needs to be updated to account for the updated minimum line weighting specifications agreed at SBWG7/AC9. A new factsheet needs to be developed for the hook-shielding devices, based largely on Annex 4 of the SBWG7 report.”

Noting the similar information in the ACAP Review and Best Practice Advice documents and the Mitigation Fact Sheets, the SBWG and AC recommended that these documents should be more distinct, and their respective formats should be designed to better target the specific audiences. Consequently, the SBWG and AC recommended that when the Mitigation Fact Sheets are next reviewed, they be simplified by, for example, removing references to scientific studies and other information not considered necessary to support practical implementation. The more detailed information, including references to relevant research and citations, would be retained in the ACAP Review and Best Practice Advice documents, and the two sets of documents would serve as complementary tools with appropriate links between them. It was anticipated that the line-weighting fact sheet would simply have the relevant content details updated (retaining the current format), and the new fact sheet on hook-shielding devices would be developed using a new simplified design that, once agreed, could be extended to the other fact sheets. However, a sub-group of the SBWG agreed interessionally that it would be more efficient to include the line-weighting factsheet in the re-design process.

The existing sheets are an important and comprehensive summary of existing knowledge on bycatch mitigation measures, and represent an immense collaborative effort on the part of the SBWG over several years, but their utility for fisheries managers and fishermen themselves is limited by the level of detail presented. So while details of published studies, reference lists and extensive background/context are all useful from a bycatch specialist's perspective, longer, text-heavy sheets with a lot of technical language are unlikely to engage the main target audience of the fact sheets: skippers and crew on vessels implementing the measures, or managers tasked with getting vessels to implement these measures. The more detailed information outlined above will be retained in the ACAP Review and Best Practice Advice documents, which will continue to serve as a summary of the relevant seabird bycatch mitigation research outputs, and an evidence base for ACAP advice. This new approach will reduce duplication between these two resources, and ensure they are more targeted towards the end users.

2. FACTSHEET RE-DESIGN

The SBWG worked on distilling the existing factsheet text to the essential elements, moving as much as possible into diagrams/pictures and limiting the information to one side of an A4 page. A designer was then commissioned to develop three different designs for the sheets:

- (i) An A4 sheet, with a refreshed and simplified design and less text (restricted to one side). Inclusion of an infographic on the back to highlight key mitigation messages (**ANNEX 1**).
- (ii) An A5 folded leaflet, with the same infographic on the inside, and the key information on the outside (**ANNEX 2**).
- (iii) A square folder, with infographic on the inside, and square inserts for each mitigation measure to keep inside (text on both sides) (**ANNEX 3**).

It is proposed that some 'testing' is conducted through existing outreach programmes (i.e. BirdLife Albatross Task Force; Common Oceans Areas Beyond National Jurisdiction (ABNJ) Tuna Project) with these designs to see which are the most effective, and to garner feedback from industry for further development.

The current designs are included here as Annexes. The Seabird Bycatch Working Group is asked to:

1. Comment on the **suitability of the different design proposals**, potentially highlighting a preference for one.
2. Comment on the **content** of the new hook shielding devices sheet and the updated line weighting sheet.
3. Agree to update the full suite of factsheets, dependent on agreed amendments from SBWG and based on feedback from outreach 'testing'.



Preventing Seabird Bycatch in Longline and Trawl Fisheries



LINE WEIGHTING

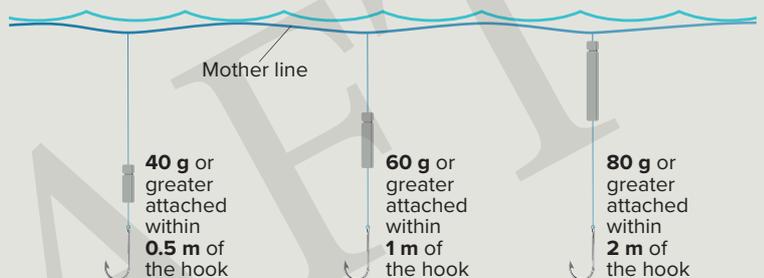
ACAP and BirdLife Best Practice Factsheet X
Updated July 2017

What is it and how does it work?

Seabirds are vulnerable to being caught during the short period between when the hooks leave the vessel and when they sink beyond their diving ranges. Line weighting branch lines helps sink hooks more quickly beyond the dive depths of surface and shallow-foraging seabirds and thus helps reduce the likelihood that birds will be able to access the baited hooks. Because most seabird dives occur in the upper reaches of the water column (down to 10m), effective line weighting should sink hooks rapidly (at least 0.5m per second) beyond this depth.

Both the mass of the weight and the distance between the weight and the hook play a vital role in achieving a fast sink rate. **Heavier weights closer to the hook are the most effective at sinking the baited hooks quickly and therefore reducing seabird bycatch;** lighter weights further from the hook can result in the hook lofting close to the surface for a period before it begins to sink beyond the danger zone for seabirds.

To counteract this effect, weights placed further from the hook need to be heavier. ACAP recommends that the following minimum line weighting standards represent best practice:



No effect on catch rates

A number of research projects have shown that adding weight to branch lines **does not affect the catch rates of the fish that are being targeted.**

Problems and troubleshooting

Crew safety: 'fly-backs', or weights flying back towards the vessel after bite-offs or line breaks, are a concern when line weighting is used. Sliding leads that slide down the branch line during bite-offs greatly reduce the incidence of fly-backs. In the USA, fishermen address fly-backs by altering the angle at which lines are retrieved so that crew are not directly in the path of the weight should the line break. Personal safety equipment, such as helmets and facescreens, and ensuring safe hauling practices, can help to minimise risks.

Propeller wash: to ensure that hooks sink quickly, they should be cast beyond the propeller wash, but still under the protection of bird scaring lines.

Combination with other measures

Line weighting is considered to be one of the most important mitigation measures, but to maximise its effectiveness, it should be combined with bird-scaring lines (Factsheet X) and night-setting (Factsheet Y). When used in combination, bird-scaring lines serve to protect the area behind the vessel in which the baited hooks are still accessible to seabirds (up to 10m depth), and the weights reduce the extent of the area that the bird-scaring lines need to protect.



Created by:



Preventing Seabird Bycatch in Longline and Trawl Fisheries



HOOK SHIELDING

ACAP and BirdLife Best Practice Factsheet X

Updated July 2017

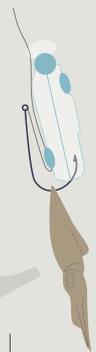
What is it and how does it work?

Hook shielding devices encase the point and barb of longline hooks during line setting, and thus prevent seabirds from being hooked during this period. Because these attacks occur primarily in the upper reaches of the water column (down to 10m), effective hook shielding devices should release hooks from their protective encasements at a depth of at least 10m, or after 10 minutes of soak time, by which time they would have sunk below 10m depth.

There are currently two hook shielding devices that have been formally assessed and are considered to meet ACAP 'best practice' criteria. This is based on experimental research demonstrating their effectiveness, their weight and associated sink rates (aligned with ACAP minimum branch line weighting requirements) and the time period or depth at which the hook is released. These are the 'Hook Pod' and the 'Smart Tuna Hook'.

Hook Pod

This device incorporates a 68g weight and is attached to the branch line directly at the hook, encasing the barb and point in a plastic housing. A pressure release mechanism opens the housing between 10 and 15m to release the baited hook.



Smart Tuna Hook

This device encases the barb and point of the hook in a metal housing, which weighs a minimum of 40g. The housing, or shield, remains attached for a minimum period of 10 minutes soak time, after which the alloy link that keeps the shield attached corrodes, causing the shield to fall away and the hook to be released.



Problems and troubleshooting

The loop of the snood recreated when the hook is inserted into the hookpod may pose a tangling issue. This is yet to be observed or quantified.

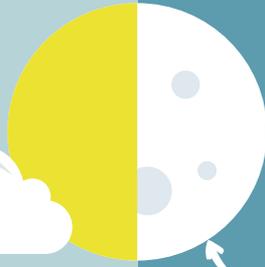
The Smart Tuna Hooks are single use and may be considered by some authorities as polluting.

Combination with other measures

These two hook-shielding devices can be used as stand-alone measures, but may be used with other measures, such as bird scaring lines and night setting. It is worth noting that these hook-shielding devices integrate two key performance requirements: shielding the baited hooks until they are released beyond the foraging depth of most seabirds, and weighting the branchlines to ensure rapid sink rates.

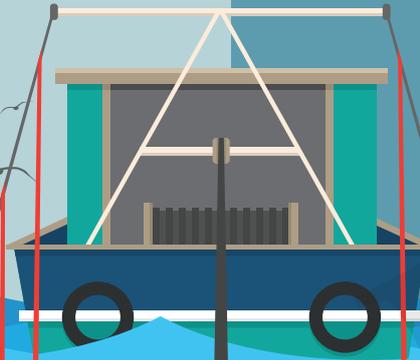
Where captures during the haul in daylight hours are of concern, day setting with hook shielding devices may allow for hauling at night and reducing the rate of both setting and haul caught seabirds.



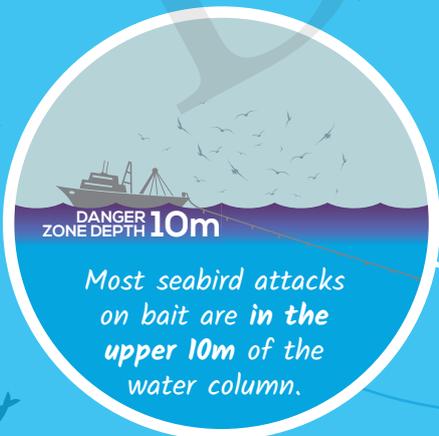


Night setting helps to limit bycatch as there are fewer birds around.

Albatrosses and petrels are the birds most impacted by longline and trawl fisheries.



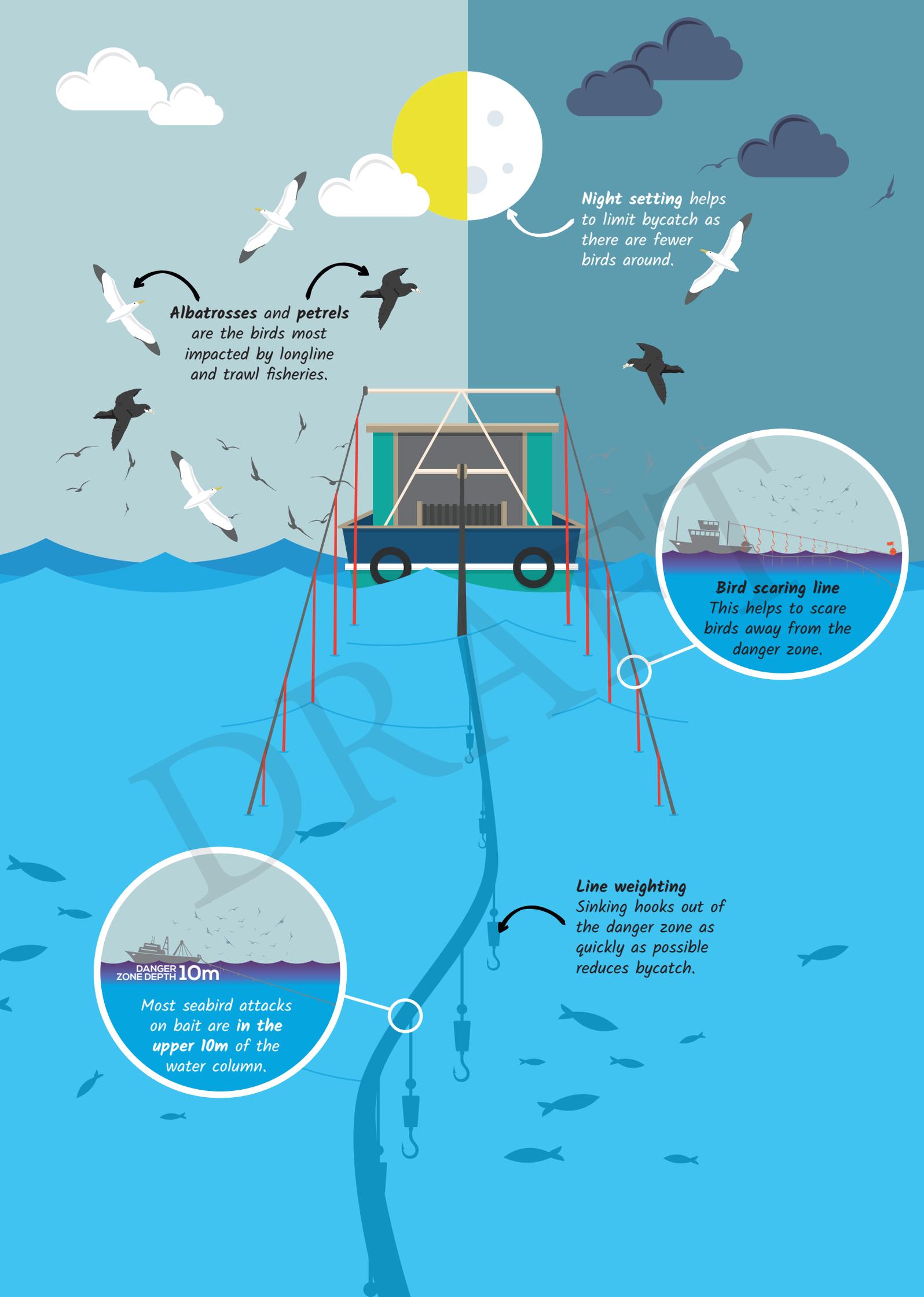
Bird scaring line
This helps to scare birds away from the danger zone.



DANGER ZONE DEPTH 10m

Most seabird attacks on bait are in the upper 10m of the water column.

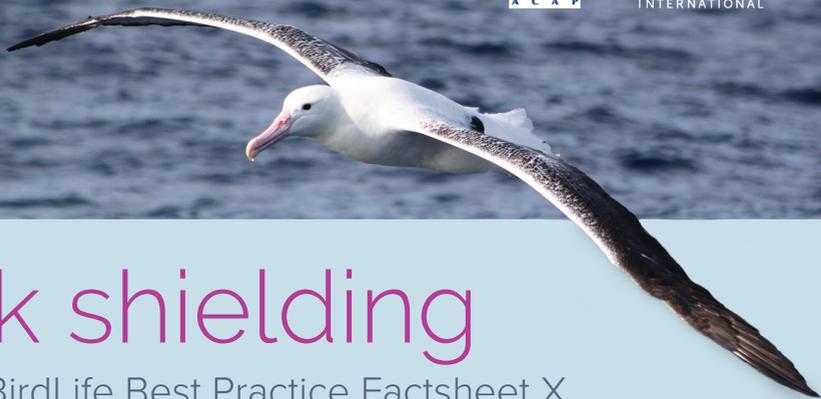
Line weighting
Sinking hooks out of the danger zone as quickly as possible reduces bycatch.



ANNEX 2. A5 folded leaflet

Preventing Seabird Bycatch in Longline and Trawl Fisheries

Created by:



Hook shielding

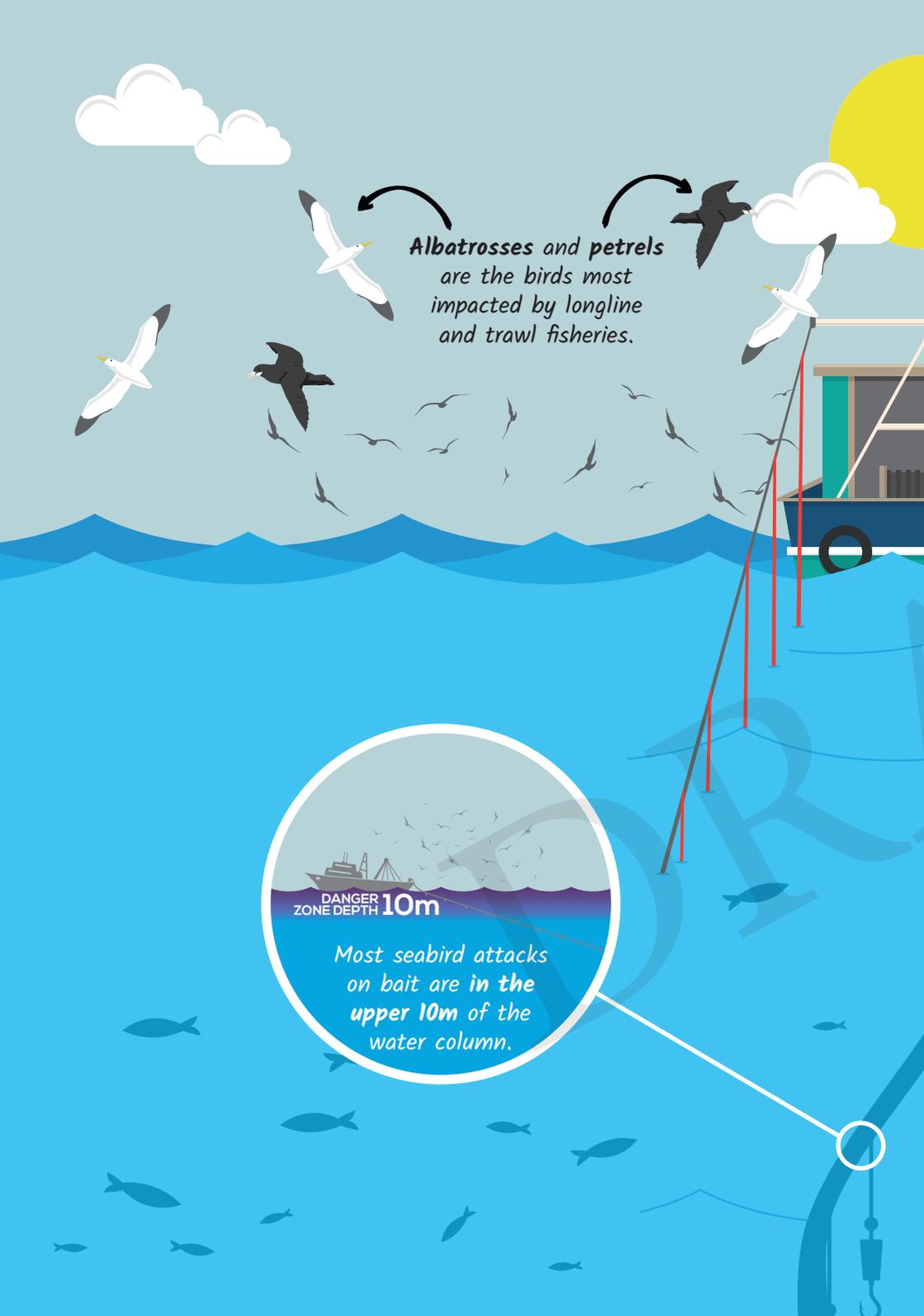
ACAP and BirdLife Best Practice Factsheet X

What is it and how does it work?

Hook shielding devices encase the point and barb of longline hooks during line setting, and thus prevent seabirds from being hooked during this period. Because these attacks occur primarily in the upper reaches of the water column (down to 10m), effective hook shielding devices should release hooks from their protective encasements at a depth of at least 10m, or after 10 minutes of soak time, by which time they would have sunk below 10m depth.

**DANGER
ZONE DEPTH 10m**

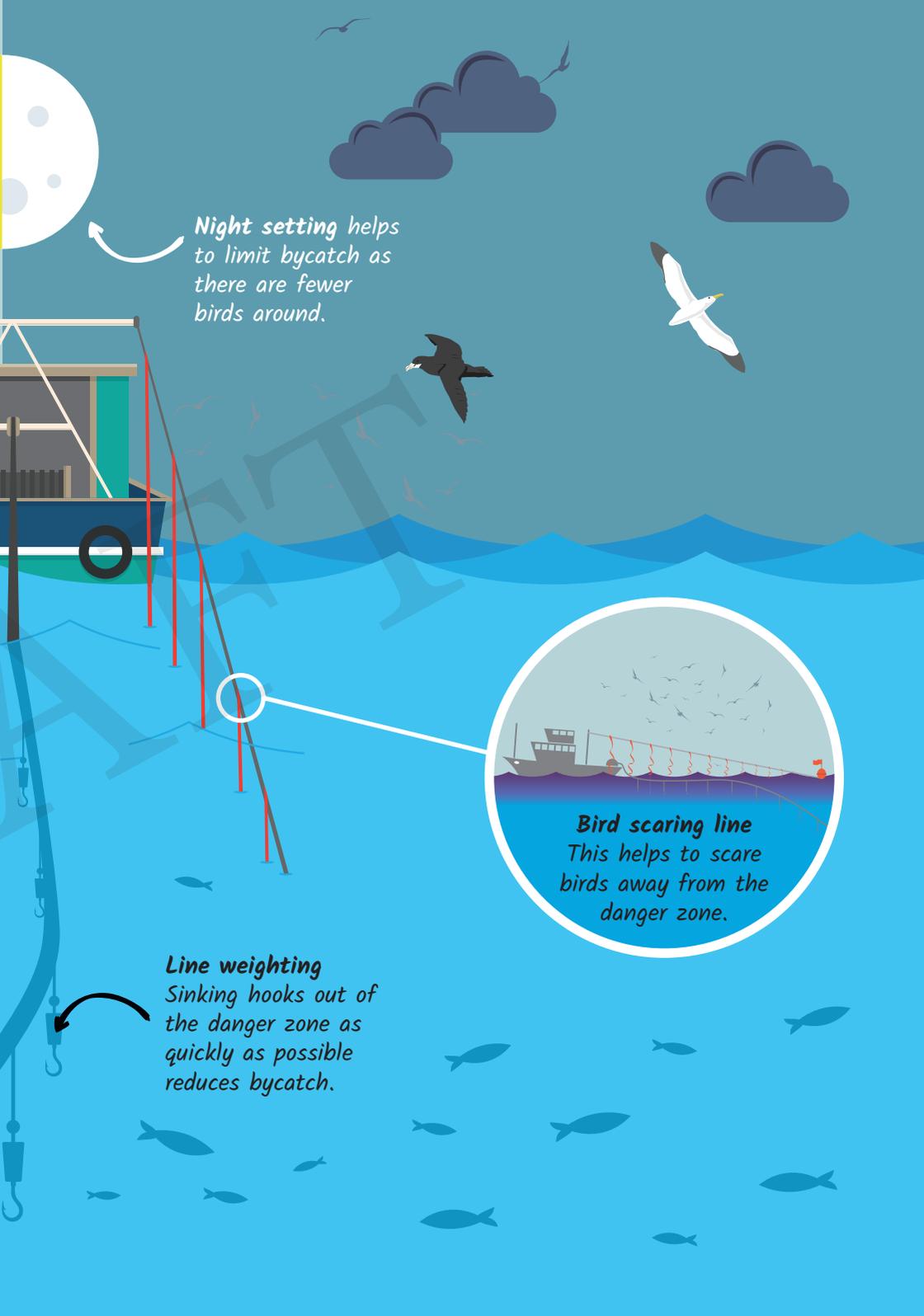


An illustration showing a fishing boat on the right side of the frame, with several red vertical lines representing longlines extending into the water. The sky is light blue with a large yellow sun in the top right corner and a few white clouds. Numerous seabirds, including white albatrosses and dark petrels, are shown in flight. Two curved arrows point from the text towards a white albatross and a dark petrel. The water is a deep blue with several small blue fish swimming. A circular callout box is positioned in the lower-left quadrant, containing a smaller illustration of a fishing boat and a dark purple shaded area representing a danger zone.

*Albatrosses and petrels
are the birds most
impacted by longline
and trawl fisheries.*

**DANGER
ZONE DEPTH 10m**

*Most seabird attacks
on bait are in the
upper 10m of the
water column.*



Night setting helps to limit bycatch as there are fewer birds around.

Bird scaring line
This helps to scare birds away from the danger zone.

Line weighting
Sinking hooks out of the danger zone as quickly as possible reduces bycatch.

There are currently two hook shielding devices that have been formally assessed and are considered to meet ACAP 'best practice' criteria. This is based on experimental research demonstrating their effectiveness, their weight and associated sink rates (aligned with ACAP minimum branch line weighting requirements) and the time period or depth at which the hook is released. These are the 'Hook Pod' and the 'Smart Tuna Hook'.

Hook Pod

This device incorporates a 68g weight and is attached to the branch line directly at the hook, encasing the barb and point in a plastic housing. A pressure release mechanism opens the housing between 10 and 15m to release the baited hook.



Smart Tuna Hook

This device encases the barb and point of the hook in a metal housing, which weighs a minimum of 40g. The housing, or shield, remains attached for a minimum period of 10 minutes soak time, after which the alloy link that keeps the shield attached corrodes, causing the shield to fall away and the hook to be released.



Problems and troubleshooting

The loop of the snood recreated when the hook is inserted into the hookpod may pose a tangling issue. This is yet to be observed or quantified.

The Smart Tuna Hook shields are single use items. They sink to the seafloor and corrode within 12 months, producing carbon and iron oxide as byproducts. Concerns have been expressed by some regarding the possible pollution impacts associated with these discarded shields.

Combination with other measures

These two hook-shielding devices can be used as stand-alone measures, but may be used with other measures, such as bird scaring lines and night setting. It is worth noting that these hook-shielding devices integrate two key performance requirements: shielding the baited hooks until they are released beyond the foraging depth of most seabirds, and weighting the branchlines to ensure rapid sink rates.

Where captures during the haul in daylight hours are of concern, day setting with hook shielding devices may allow for hauling at night and reducing the rate of both setting and haul caught seabirds.

Contact us

Rory Crawford, BirdLife International Marine Programme, The Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire, SG19 2DL, UK. Email: rory.crawford@rspb.org.uk

BirdLife UK Reg. Charity No. 1042125

ACAP Secretariat, Agreement on the Conservation of Albatrosses and Petrels, 119 Macquarie Street, Hobart 7000, Tasmania, Australia. Email: secretariat@acap.aq

Preventing Seabird Bycatch in Longline and Trawl Fisheries

Created by:



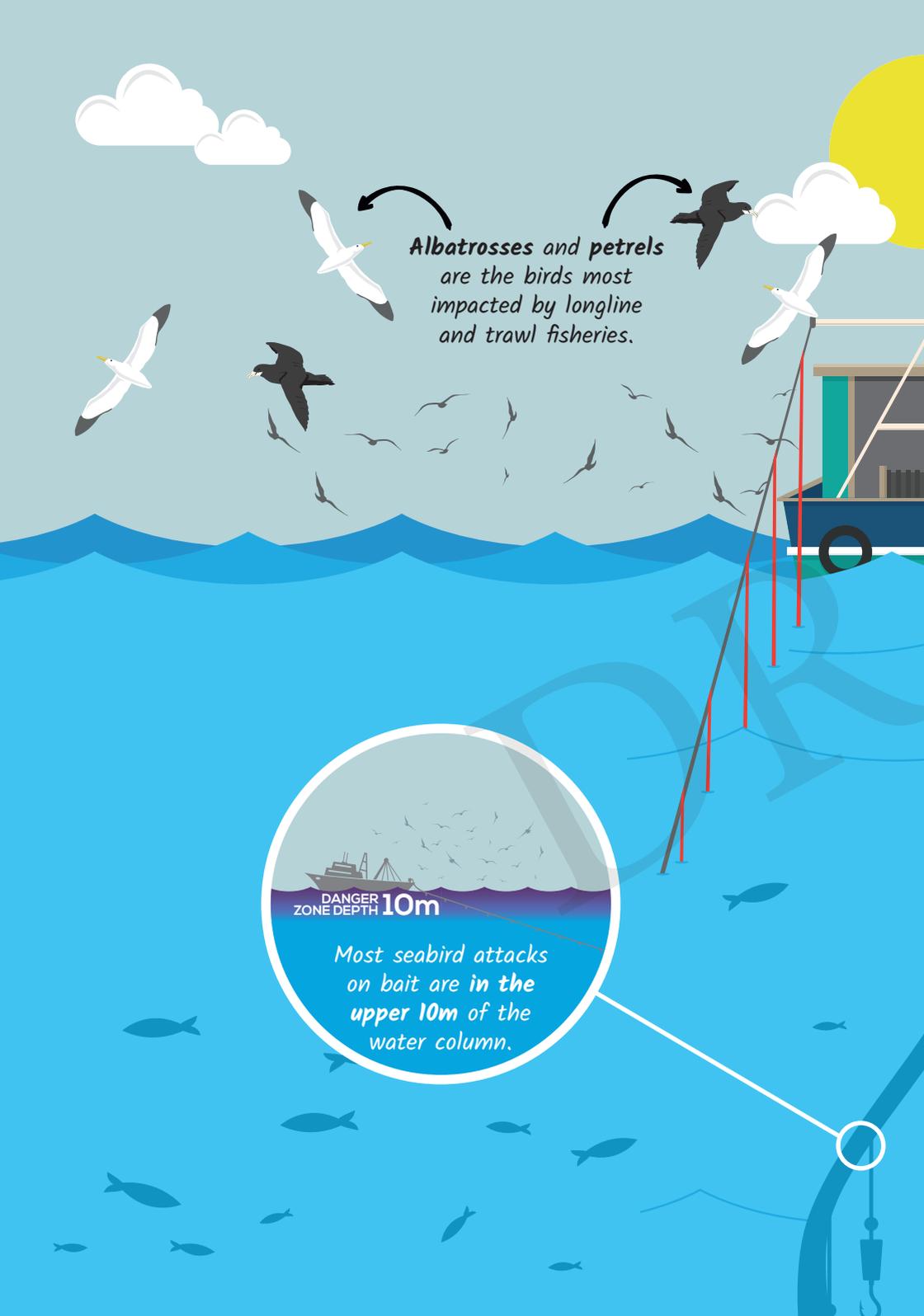
Line weighting

ACAP and BirdLife Best Practice Factsheet X

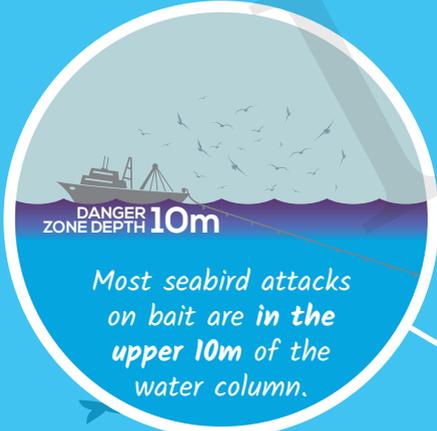
What is it and how does it work?

Seabirds are vulnerable to being caught during the short period between when the hooks leave the vessel and when they sink beyond their diving ranges. Line weighting branch lines helps sink hooks beyond the dive depths of surface and shallow-foraging seabirds and thus helps reduce the likelihood that birds will be able to access the baited hooks. Because most seabird dives occur in the upper reaches of the water column (down to 10m), effective line weighting should sink hooks rapidly (at least 0.5m per second) beyond this depth.



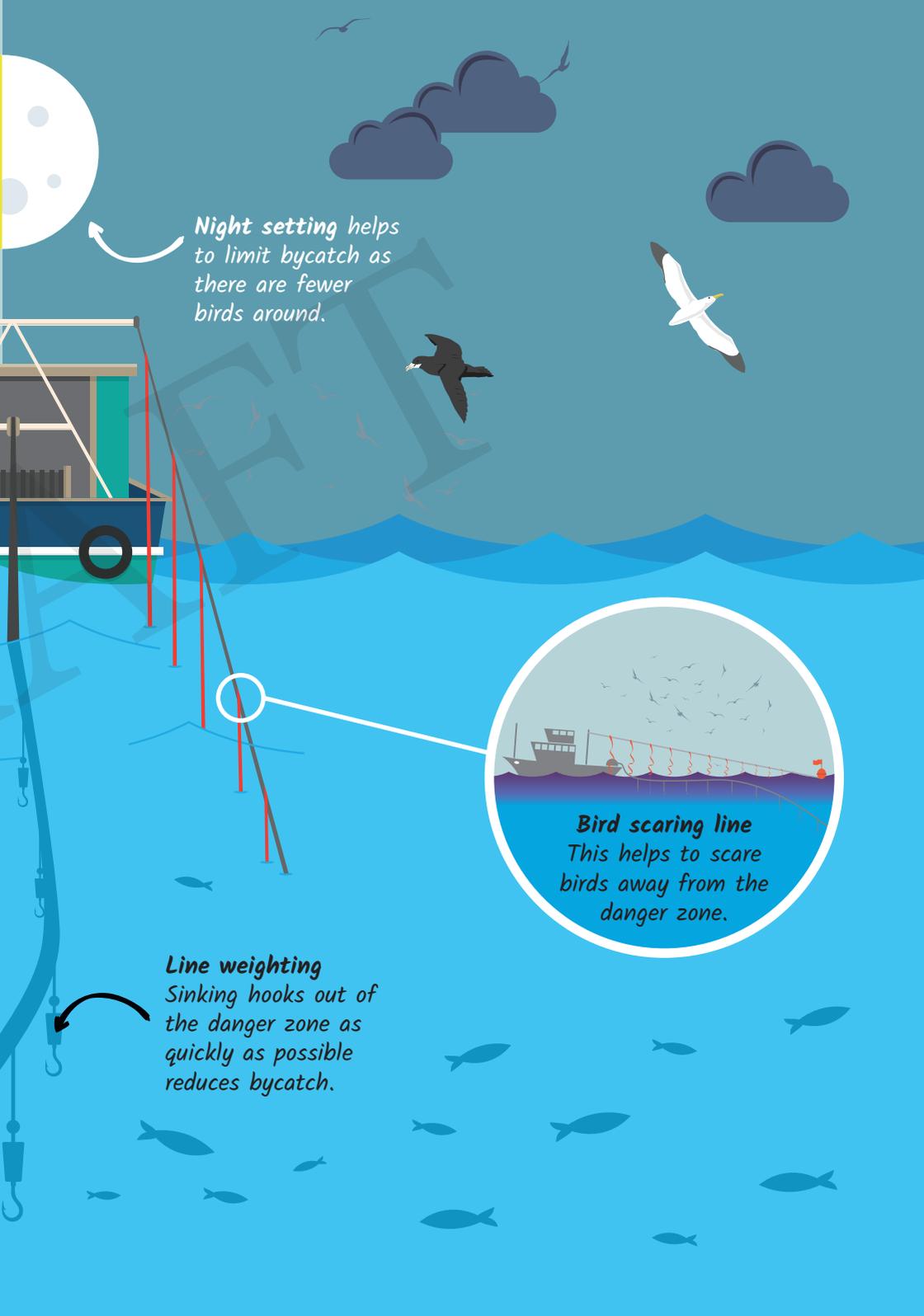
An illustration showing a fishing boat on the right side of the frame, with a longline extending from it into the water. Several birds, including white albatrosses and dark petrels, are flying in the sky above the boat. Two curved arrows point from the text towards a white albatross and a dark petrel. The background features a light blue sky with white clouds and a large yellow sun in the top right corner. The water is depicted with blue waves and various fish swimming below. A circular inset provides a closer look at the water column near the boat.

*Albatrosses and petrels
are the birds most
impacted by longline
and trawl fisheries.*

A circular inset showing a fishing boat on the surface of the water. Below the surface, a purple-shaded area represents a danger zone. The text 'DANGER ZONE DEPTH 10m' is written in white on this purple area. A line connects the bottom of this inset to a larger white circle on the right side of the image, which is part of the longline structure.

**DANGER
ZONE DEPTH 10m**

*Most seabird attacks
on bait are in the
upper 10m of the
water column.*



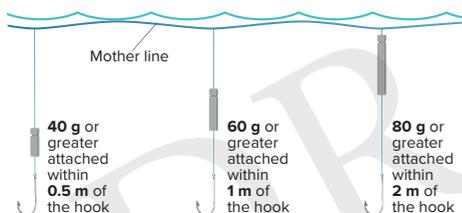
Night setting helps to limit bycatch as there are fewer birds around.

Line weighting
Sinking hooks out of the danger zone as quickly as possible reduces bycatch.

Bird scaring line
This helps to scare birds away from the danger zone.

Both the mass of the weight and the distance between the weight and the hook play a vital role in achieving a fast sink rate. **Heavier weights closer to the hook are the most effective at sinking the baited hooks quickly and therefore reducing seabird bycatch**; lighter weights further from the hook can result in the hook lofting close to the surface for a period before it begins to sink beyond the danger zone for seabirds.

To counteract this effect, weights placed further from the hook need to be heavier. ACAP recommends that the following minimum line weighting standards represent best practice:



No effect on catch rates

A number of research projects have shown that adding weight to branch lines **does not affect the catch rates of the fish that are being targeted.**

Problems and troubleshooting

Crew safety: 'fly-backs', or weights flying back towards the vessel after bite-offs or line breaks, are a concern when line weighting is used. Sliding leads that slide down the branch line during bite-offs greatly reduce the incidence of fly-backs. In the USA, fishermen address fly-backs by altering the angle at which lines are retrieved so that crew are not directly in the path of the weight should the line break. Personal safety equipment, such as helmets and facescreens, and ensuring safe hauling practices, can help to minimise risks.

Propeller wash: to ensure that hooks sink quickly, they should be cast beyond the propeller wash, but still under the protection of bird scaring lines.

Combination with other measures

Line weighting is considered to be one of the most important mitigation measures, but to maximise its effectiveness, it should be combined with bird-scaring lines (Factsheet X) and night-setting (Factsheet Y). When used in combination, bird-scaring lines serve to protect the area behind the vessel in which the baited hooks are still accessible to seabirds (up to 10m depth), and the weights reduce the extent of the area that the bird-scaring lines need to protect.

Contact us

Rory Crawford, BirdLife International Marine Programme, The Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire, SG19 2DL, UK. Email: rory.crawford@rspb.org.uk

BirdLife UK Reg. Charity No. 1042125

ACAP Secretariat, Agreement on the Conservation of Albatrosses and Petrels, 119 Macquarie Street, Hobart 7000, Tasmania, Australia. Email: secretariat@acap.aq



ANNEX 3. Square folder, with inserts for each mitigation measure to keep inside

Preventing Seabird Bycatch in Longline and Trawl Fisheries

Updated July 2017

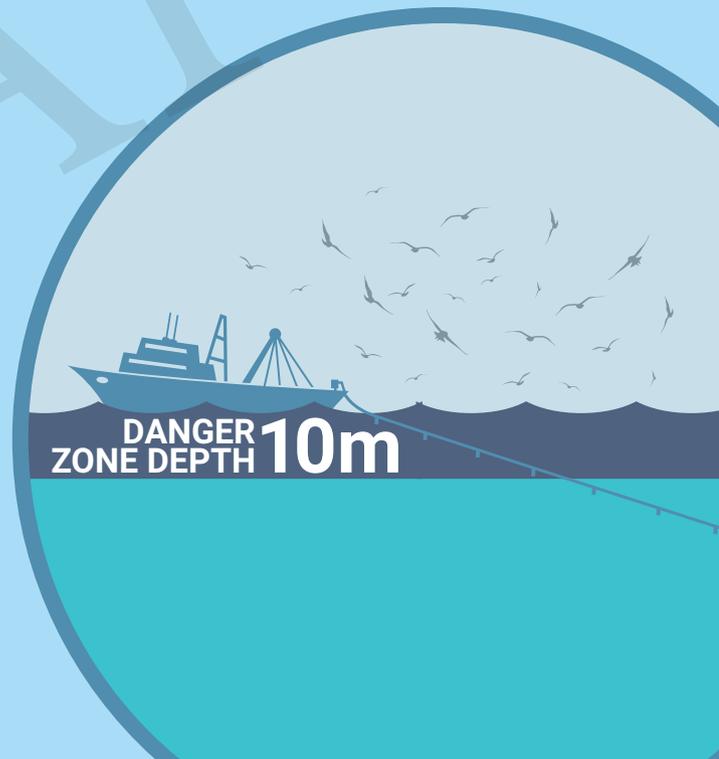


LINE WEIGHTING

ACAP and BirdLife
Best Practice
Factsheet X

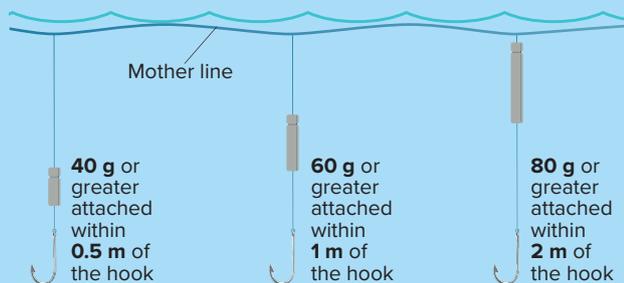
What is it and how does it work?

Seabirds are vulnerable to being caught during the short period between when the hooks leave the vessel and when they sink beyond their diving ranges. Line weighting branch lines helps sink hooks beyond the dive depths of surface and shallow-foraging seabirds and thus helps reduce the likelihood that birds will be able to access the baited hooks. Because most seabird dives occur in the upper reaches of the water column (down to 10m), effective line weighting should sink hooks rapidly (at least 0.5m per second) beyond this depth.



Both the mass of the weight and the distance between the weight and the hook play a vital role in achieving a fast sink rate. **Heavier weights closer to the hook are the most effective at sinking the baited hooks quickly and therefore reducing seabird bycatch**; lighter weights further from the hook can result in the hook lofting close to the surface for a period before it begins to sink beyond the danger zone for seabirds.

To counteract this effect, weights placed further from the hook need to be heavier. ACAP recommends that the following minimum line weighting standards represent best practice:



No effect on catch rates

A number of research projects have shown that adding weight to branch lines **does not affect the catch rates of the fish that are being targeted**.

Problems and troubleshooting

Crew safety: 'fly-backs', or weights flying back towards the vessel after bite-offs or line breaks, are a concern when line weighting is used. Sliding leads that slide down the branch line during bite-offs greatly reduce the incidence of fly-backs. In the USA, fishermen address fly-backs by altering the angle at which lines are retrieved so that crew are not directly in the path of the weight should the line break. Personal safety equipment, such as helmets and facescreens, and ensuring safe hauling practices, can help to minimise risks.

Propeller wash: to ensure that hooks sink quickly, they should be cast beyond the propeller wash, but still under the protection of bird scaring lines.

Combination with other measures

Line weighting is considered to be one of the most important mitigation measures, but to maximise its effectiveness, it should be combined with bird-scaring lines (Factsheet X) and night-setting (Factsheet Y). When used in combination, bird-scaring lines serve to protect the area behind the vessel in which the baited hooks are still accessible to seabirds (up to 10m depth), and the weights reduce the extent of the area that the bird-scaring lines need to protect.



Preventing Seabird Bycatch in Longline and Trawl Fisheries

Updated July 2017



HOOK SHIELDING

ACAP and BirdLife
Best Practice
Factsheet X

What is it and how does it work?

Hook shielding devices encase the point and barb of longline hooks during line setting, and thus prevent seabirds from being hooked during this period.

Because these attacks occur primarily in the upper reaches of the water column (down to 10m), effective hook shielding devices should release hooks from their protective encasements at a depth of at least 10m, or after 10 minutes of soak time, by which time they would have sunk below 10m depth.



There are currently two hook shielding devices that have been formally assessed and are considered to meet ACAP 'best practice' criteria. This is based on experimental research demonstrating their effectiveness, their weight and associated sink rates (aligned with ACAP minimum branch line weighting requirements) and the time period or depth at which the hook is released. These are the 'Hook Pod' and the 'Smart Tuna Hook'.



Hook Pod

This device incorporates a 68g weight and is attached to the branch line directly at the hook, encasing the barb and point in a plastic housing. A pressure release mechanism opens the housing at a depth of between 10 and 15m to release the baited hook.



Smart Tuna Hook

This device encases the barb and point of the hook in a metal housing, which weighs a minimum of 40g. The housing, or shield, is attached to the hook as part of the baiting process, and once deployed remains attached for a minimum period of 10 minutes' soak time, after which the alloy link that keeps the shield attached corrodes, causing the shield to fall away and the hook to be released.

Problems and troubleshooting

The loop of the snood recreated when the hook is inserted into the hookpod may pose a tangling issue. This is yet to be observed or quantified.

The Smart Tuna Hooks are single use and may be considered by some authorities as polluting.

Combination with other measures

These two hook-shielding devices can be used as stand-alone measures, but may be used with other measures, such as bird scaring lines and night setting. It is worth noting that these hook-shielding devices integrate two key performance requirements: shielding the baited hooks until they are released beyond the foraging depth of most seabirds, and weighting the branchlines to ensure rapid sink rates.

Where captures during the haul in daylight hours are of concern, day setting with hook shielding devices may allow for hauling at night and reducing the rate of both setting and haul caught seabirds.



Preventing Seabird **Bycatch** in Longline and Trawl Fisheries



Rory Crawford, BirdLife International Marine Programme, The Royal Society for the Protection of Birds,
The Lodge, Sandy, Bedfordshire, SG19 2DL, UK. Email: rory.crawford@rspb.org.uk
BirdLife UK Reg. Charity No. 1042125

ACAP Secretariat, Agreement on the Conservation of Albatrosses and Petrels, 119 Macquarie Street,
Hobart 7000, Tasmania, Australia. Email: secretariat@acap.aq

Created by:



TRAWLER

LONGLINE

Albatrosses and petrels are the birds most impacted by longline and trawl fisheries.

Offal/discard management - limiting offal discharge during shooting and hauling reduces bird attendance and bycatch.

Night setting helps to limit bycatch as there are fewer birds around.

Danger zones Seabirds collide with warp and netsonde cables and can get entangled in trawl nets.

Minimising the time the net spends on the surface, and ensuring it is clean before it is shot, helps to reduce bird interactions.

Bird scaring line This helps to scare birds away from the danger zone.

DANGER ZONE DEPTH 10m Most seabird attacks on bait are in the upper 10m of the water column.

Line weighting Sinking hooks out of the danger zone as quickly as possible reduces bycatch.

