

 <p data-bbox="215 533 454 571">Agreement on the Conservation of Albatrosses and Petrels</p>	<p data-bbox="507 241 1401 280">Tenth Meeting of the Seabird Bycatch Working Group</p> <p data-bbox="730 297 1401 336"><i>Virtual meeting, 17 - 19 August 2021 (UTC+10)</i></p> <p data-bbox="499 414 1393 510">ACAP seabird bycatch performance indicators and reporting framework</p> <p data-bbox="499 533 1393 616"><i>Sebastián Jiménez, Igor Debski, Wiesława Misiak, Tim Reid</i></p>
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SUMMARY

The ACAP Action Plan calls on the Advisory Committee to routinely review and update data on the mortality of albatrosses and petrels in commercial and other relevant fisheries. It has been agreed previously that the Status-Pressure-Response framework will be used by ACAP to measure performance, and that the main Pressure Indicator for bycatch P1 should be: total number of birds killed per year of ACAP species (by species where possible), and their bycatch rate, across each of the fisheries of member Parties.

Here we report on intersessional progress on the approach agreed at SBWG9. We identify the steps needed in the next intersessional period if any progress is to be achieved towards using seabird bycatch indicators to understand how ACAP can track and address the mortality of seabirds in fisheries.

RECOMMENDATIONS

We recommend that the Seabird Bycatch Working Group:

1. Advise on any further refinements to the reporting format to allow the collection of robust data for ACAP's bycatch indicator(s).
2. Endorse the proposed approach of focusing on fisheries with highest bycatch rates and/or estimated mortalities, including agreement on thresholds for bycatch rates for each gear type that would trigger discussion and further analysis.
3. Consider how ACAP can assist Parties and data providers to address barriers to reporting seabird bycatch estimates or rates in their fisheries.
4. Request that the Advisory Committee reiterates the importance of Parties and Range States reporting bycatch estimates using appropriate statistical methods, or where this is not available, observed bycatch data using relevant strata.
5. Request that the Advisory Committee reiterates the importance of Parties and Range States including fisheries where data are either extremely poor or lacking altogether in their reporting, and to identify the reasons this is so.

Indicadores de desempeño del ACAP para la captura secundaria de aves marinas y marco para la presentación de informes

RESUMEN

El Plan de Acción del ACAP solicita al Comité Asesor que revise y actualice en forma periódica los datos sobre mortalidad de albatros y petreles en pesquerías comerciales y demás pesquerías pertinentes. Con anterioridad, se ha acordado que el ACAP utilizaría el marco de Estado-Presión-Respuesta para la medición del desempeño y que el principal indicador de Presión (P1) para la captura secundaria debería ser la cantidad total de aves muertas por año que forman parte de las especies amparadas por el ACAP (en lo posible, según la especie) y la tasa de captura secundaria de estas últimas en cada una de las pesquerías pertenecientes a las Partes.

En este documento, se informa sobre los progresos logrados durante el período intersesional con respecto a la metodología acordada en la Reunión SBWG9. Identificamos los pasos necesarios para el próximo período intersesional si se quiere avanzar en el uso de indicadores de captura secundaria de aves marinas para entender cómo el ACAP puede vigilar y abordar la mortalidad de las aves marinas en las pesquerías.

RECOMENDACIONES

Se recomienda al Grupo de Trabajo sobre Captura Secundaria de Aves Marinas realizar las siguientes acciones:

1. Aconsejar sobre cualquier otra mejora del formato de presentación de informes para permitir la recopilación de datos sólidos favorables para los indicadores de captura secundaria del ACAP.
2. Respaldar el enfoque propuesto de centrarse en las pesquerías con mayores índices de captura secundaria y/o mortalidad estimada, incluido un acuerdo sobre los umbrales de los índices de captura secundaria para cada tipo de arte para dar lugar al debate y al análisis posterior.
3. Considerar la forma en que el ACAP puede ayudar a las Partes y a los proveedores de datos a abordar los obstáculos que impiden informar sobre las estimaciones o los índices de captura secundaria de aves marinas en sus pesquerías.
4. Solicitar al Comité Asesor que reitere la importancia de que las Partes y los Estados del Área de Distribución informen sobre sus cálculos de captura secundaria utilizando los métodos estadísticos que correspondan o, en caso de que no estén disponibles, sobre los datos de captura secundaria observada utilizando los estratos adecuados.
5. Solicitar que el Comité Asesor reitere la importancia de que las Partes y los Estados del Área de Distribución incluyan en sus informes las pesquerías sobre las que los datos son extremadamente escasos o inexistentes, y que identifiquen las razones de ello.

Indicateurs de performance relatifs à la capture accessoire d'oiseaux de mer et cadre de communication des données

RÉSUMÉ

Le Plan d'action de l'ACAP prévoit que le Comité consultatif passe en revue et actualise régulièrement les données relatives au taux de mortalité des albatros et des pétrels enregistré dans les activités de pêche commerciale et autre pêche concernée. Il a été convenu précédemment que l'ACAP mesurera les performances à l'aide du Cadre état-pression-réponse, et que les principaux indicateurs de pression pour la capture accessoire P1 devraient être le nombre total d'oiseaux inscrits à l'ACAP tués par an (par espèce, dans la mesure du possible) et le taux de capture accessoire dans les pêches de toutes les Parties à l'Accord.

Le présent document constitue un rapport sur les avancées accomplies conformément à l'approche adoptée lors de la réunion du SBWG9. Nous devons déterminer quelles sont les mesures devant être prises lors de la prochaine période intersessions pour permettre une meilleure utilisation des indicateurs de capture accessoire d'oiseaux de mer, afin de mieux comprendre comment l'ACAP peut surveiller la mortalité des oiseaux marins dans les pêcheries et de définir les mesures à prendre en conséquence.

RECOMMANDATIONS

Nous recommandons que le Groupe de travail sur la capture accessoire des oiseaux de mer :

1. donne des conseils permettant d'affiner le format de communication des données afin d'améliorer la collecte des données pour les indicateurs de capture accessoire de l'ACAP ;
2. approuve l'approche proposée qui consiste à se concentrer sur les zones de pêche où l'on rencontre les plus importants taux de capture accessoire ou de mortalité estimée, en convenant des seuils pour les taux de capture accessoire pour chaque type d'équipement susceptible d'engendrer une discussion et une analyse plus approfondie ;
3. étudie la manière dont l'ACAP peut aider les Parties et les fournisseurs de données à lever les obstacles qui se posent à la communication des taux ou des estimations de capture accessoire d'oiseaux de mer ;
4. prie le Comité consultatif d'insister sur le fait qu'il est important que les Parties et les États de l'aire de répartition communiquent les estimations de capture accessoire à l'aide de méthodes statistiques adéquates ou, si ce n'est pas possible, en utilisant les données relatives à la capture accessoire observée à l'aide des strates pertinentes ;
5. demande au Comité consultatif de réaffirmer l'importance du recensement par les Parties et les États de l'aire de répartition des pêcheries où les données sont très rares ou inexistantes, et d'en déterminer les raisons.

1. BACKGROUND

The ACAP Action Plan calls on Parties ‘to collect reliable, and where possible, verifiable data to enable accurate estimation of the nature and extent of albatross and petrel interactions with fisheries’ (Action 4.2). The Action Plan also expects the Advisory Committee regularly to review and update data on the mortality of albatrosses and petrels in fisheries (5.1f) as well as data on the distribution and seasonality of fishing effort for those fisheries that overlap with species listed in Annex 1 of the Agreement (5.1g). In order to achieve this objective, a web-based reporting system was developed to capture and use fisheries and bycatch data submitted by Parties and collaborating Range States. Since its inception, (see AC6 Doc 16 and [SBWG4 Doc 25 Rev 3](#)), the reporting format has undergone a number of reviews ([SBWG5 Doc 16](#), [SBWG6 Doc 09](#), [SBWG7 Doc 05](#), [SBWG8 Doc 05](#)) to reflect discussions about the nature of data which would be submitted to ACAP and used to construct relevant bycatch indicators which would monitor changes in bycatch levels (and factors contributing to these changes), important data gaps that need to be filled, or capacity needs of Parties. The most recent reviews on the reporting format ([SBWG7 Doc 05](#), [SBWG8 Doc 05](#)) have reflected the recommendation made at SBWG6 that instead of providing raw or aggregated data, Parties could provide estimates that they themselves have derived. However, if these estimates are not available, the reporting format also allows unprocessed observer data to be incorporated.

2. RESULTS FROM AC12 REPORTING

The fishery and bycatch data reporting in 2021 was more comprehensive than in the previous round, although data was provided largely after the due date. A summary of the reporting status for each fishery is provided in **ANNEX 1**. Ten Parties or Range States (Argentina, Australia, Chile, New Zealand, Peru, South Africa, Spain, UK, Uruguay and USA) provided information for 2018 or later for at least one fishery.

The database contains 113 fisheries from 14 Parties and Range States. Some of the fisheries initially reported are no longer active or have been consolidated, and are not considered here. Trawl was the dominant gear type, reported for 41 fisheries, followed by demersal longline (33 fisheries), and pelagic longline (22 fisheries). Nine fisheries were reported to use purse seines, six employed pots or traps, and four gillnet and entangling nets. Squid jig and bait boats fishing for tuna were reported in two fisheries each. Eight fisheries employed more than one gear type. Five fisheries did not have their gear type specified, and no fisheries were identified as boat seines. (**ANNEX 2**).

18 fisheries (from Chile, New Zealand, Uruguay and USA) were able to report total estimated mortality of all seabirds or particular taxa. In the absence of estimates in a given fishery, bycatch rates of total seabirds or particular taxa were reported in 11 fisheries. In the absence of estimates of total mortality or bycatch rates in a given fishery, unprocessed observer data for any taxa or taxa grouping was reported for 57 fisheries (**ANNEX 2**).

The reasons for total estimates of mortality or rates of bycatch not being available were reported as:

- lack of resources/expertise to process data (four fisheries, Chile)
- no seabirds were observed caught, i.e. observed bycatch was 0 (eight fisheries, Spain, Uruguay),

- Modelling of data is still in progress (four fisheries, UK, Uruguay)
- Not enough captures in a small fishery to extrapolate (one fishery, Uruguay).

30 ACAP species were identified and reported bycaught in six (out of nine) gear types, along with 32 species identified in six additional families of seabirds. In the entire dataset, i.e. combined across all reporting years and fisheries, total bycatch was estimated for 17 ACAP species

Information on mitigation measures is not considered here given the time constraints of an online meeting format and the need to reach agreement on the treatment of bycatch data as a first step.

Some issues identified with reporting since the new forms were introduced in 2017 included:

- Parties continue to report data in the same format as earlier existing data, i.e. quarterly or yearly, with the option to report by other time period, eg. monthly, or at finer spatial resolution not utilized. In previous surveys data providers indicated that data is collected at a 'shot by shot' resolution, so there is opportunity to collate the data at different resolutions.
- Where no bycatch has been observed in a fishery, the relevant cells (for total birds) are often left blank rather than populated with a "0".

This shows an ongoing need to review and improve the instructions provided for the data entry form. We encourage further feedback from data custodians on the ease of use of the template, and suggestions for further amendments at any time.

3. ACAP INDICATORS

Pressure Indicators (P1)

ACAP has previously agreed that the primary Pressure Indicator for Bycatch (P1) should comprise two linked components: i) bycatch rates of seabirds (by species, where possible) across each of the fisheries of member Parties and ii) the total number of birds killed (bycaught) per year of ACAP species (again, preferably by species).

Due to only a small proportion of fisheries (16%) currently reporting total estimated mortality, it is not yet possible to address indicator P1 ii). However, some progress can be made with the first part of the indicator, using observer/raw data. In the absence of bycatch rates reported by Parties, figures 1 to 4 (**ANNEX 3**) provide some examples of how observer data could be used to extrapolate bycatch rate based on observed effort and fishing effort. In order to focus future reporting of this indicator, we propose that only the fisheries with highest rate of bycatch or estimated mortality are presented to SBWG, so that discussion or further analyses can identify the reasons behind high levels, and how they can be managed. Fisheries of concern would be identified as those that have a seabird bycatch rate above an agreed threshold at any time in the last 10 years, or in the last triennium, e.g. for pelagic longlines this could be 0.05 birds/1000 hooks. Thresholds for all gear types will need to be agreed by the SBWG. The number and proportion of fisheries with bycatch rates or estimates of mortality above an agreed level would then be reported each triennium to track progress.

State indicator (S2)

State indicator 2 (S2) relates to the availability of bycatch data relevant to ACAP species. Progress in the availability of bycatch data is measured as an increasing number of Parties and/or fleets reporting bycatch estimates over time, and a change in methods used to those producing most robust estimates. **ANNEX 2** compares level of reporting between 2019 (for AC11 reporting round) to the current levels of data provision (2020 being the most recent reporting year possible).

Response Indicators (R1, R2 and R3)

As noted above, the response indicators are not addressed here and will be progressed at SBWG11.

4. FUTURE IMPLEMENTATION

In order for the bycatch indicators work to move towards a more comprehensive analysis, the following issues need to be addressed:

1. Parties and collaborating Range States need to provide information on their relevant fisheries in a timely manner. The fishery forms are available outside the AC reporting process and therefore data can be entered at any time.
2. Consideration needs to be given to how ACAP can assist Parties and data providers to address barriers to obtaining or reporting seabird bycatch data in the preferred format.
3. The bycatch data forms need to be completed correctly in order to produce meaningful analysis. Blank fields and unanswered questions provide misleading reports. The forms will continue to be refined intersessionally to address this.

ANNEX 1

Table 1. Fisheries with number of bycatch records for each type of bycatch data.

	Fishery	Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
Argentina	Fresqueros Altura - Merluza Hubbsi	Trawl	2008	2019			21
Argentina	Congeladores - Palangreros	Longline - demersal	2008	2018			15
Argentina	Congeladores - Tangoneros	Longline - demersal	2005	2012			19
Argentina	Congeladores – Poteros ¹	squid jig					
Argentina	Congeladores - Merluza Hubbsi	Trawl	2008	2019			13
Argentina	Congeladores - Merluza De Cola, Polaca Y Merluza Negra	Trawl	2008	2019			17
Argentina	Congeladores - Centolla Y Centollon ²	Trawl					
Argentina	Rada o Ria - Merluza hubbsi ³	Trawl					
Argentina	Rada o Ria - Variado Costero ³	Trawl					
Argentina	Rada o Ria - Merluza Hubbsi - Palangre	Longline - demersal	2009	2009			
Argentina	Costeros - Merluza Hubbsi ³	Trawl					
Argentina	Costeros - Pelagicas - Red De Media Agua	Trawl	2011	2018			9
Argentina	Costeros – Trampas ¹	pots/traps					
Argentina	Costeros - Variado Costero	Trawl	2017	2018			2
Argentina	Costeros - Flota Amarilla De Rawson	Trawl	2006	2012			11
Argentina	Congeladores – Vieira ⁴	Trawl					
Australia	Eastern Tuna and Billfish	Longline - pelagic	2004	2019			86
Australia	Heard Island and McDonald Islands - Trawl	Trawl	2004	2019			12
Australia	Macquarie Island - Trawl	Trawl	2004	2019			
Australia	Western Tuna and Billfish	Longline - pelagic	2004	2019			16
Australia	Great Australian Bight Trawl Sector	Trawl	2004	2019			4
Australia	Gillnet, Hook & Trap - longline sector	Longline - demersal	2004	2019			65
Australia	South-East Trawl including Victorian Inshore Trawl	Trawl	2004	2019			73
Australia	Heard Island & McDonald Islands - Longline	Longline - demersal	2004	2019			39

Fishery		Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
Australia	Macquarie Island - Longline	Longline - demersal	2004	2019			8
Australia	Small Pelagic Fishery	purse seines	2013	2019			11
		Trawl					
Brazil	Pelagic longline for tuna and swordfish	Longline - pelagic	2004	2013			43
Brazil	Monkfish gillnet	gillnet and entangling nets	2011	2013			16
Brazil	Pelagic Longline Fishery - Foreign-owned fishing boats rented by Brazilian fishing enterprises	Longline - pelagic	2011	2012			10
Brazil	Surface longline for dolphinfish	Longline - pelagic					
Brazil	Bottom longline	no data					
Canada	Commercial Pacific Halibut fishery (west coast of Canada)	no data	2004	2009			15
Canada	Commercial Rockfish (west coast of Canada)	no data	2004	2009			7
Canada	Commercial Pacific Salmon gillnet fishery	no data	2009	2010			6
Chile	Palangre industrial fábrica Bacalao	Longline - demersal	2004	2019	4		7
Chile	Pelagic longline	Longline - pelagic	2004	2018			56
Chile	Pelagic longline	Longline - pelagic	2004	2019			4
Chile	Palangre industrial fábrica de Merluza del sur y Congrio dorado	Longline - demersal	2004	2019	10		14
Chile	Gillnets Swordfish Fishery	gillnet and entangling nets	2011	2019	2	2	4
Chile	Arrastre industrial Fabrica (congelador) especies: Merluccius australis, Macruronus magellanicus, Genypterus blacodes, Micromesistius australis y otras especies demersales.	Trawl	2012	2017			32
Chile	Arrastre industrial fabrica Surimero especies objetivo : merluza de tres aletas (Micromesistius australis), Merluza de cola (Macruronus magellanicus)	Trawl	2012	2019			39

Fishery		Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
Chile	Arrastre industrial hielero especies merluza del sur (merluccius australis) y merluza de cola (macroronus magellanicus) y otras especies demersales.	Trawl	2012	2019	22		29
Chile	Arrastre de Crustaceos Demersales	Trawl	2013-2015	2019		4	13
Chile	Cerco industrial sardina y anchoveta)	purse seines	2014	2020			60
Chile	Cerco artesanal sardina y anchoveta	purse seines	2014	2020			67
Chile	Cerco industrial Jurel y caballa.	purse seines	2014	2020			37
Chile	Espinel artesanal de dorado de altura y tiburones	Longline - pelagic	2017	2019			8
Ecuador	Artisanal demersal longline fishery in Santa Rosa	Longline - demersal	2010	2013			2
France	Pêcherie palangrière À la L'Égine Australe	Longline - demersal	2004	2014			
New Zealand	Pelagic longline	Longline - pelagic	2004	2018-19	58	108	265
New Zealand	Demersal longline	Longline - demersal	2004	2018-19	53	95	226
New Zealand	Trawl ⁵	Trawl	2002/2003	2018/19	1361	1738	59
New Zealand	Setnet	gillnet and entangling nets	2012/13	2018/19		61	7
New Zealand	Purse seine	purse seines	2012/13	2018-19		8	5
Peru	Espinel artesanal	Longline - pelagic	2005	2019			8
Peru	Cerco : Pesca industrial de cerco para anchoveta	purse seines	2007	2020			14
Peru	Redes agalleras a la deriva	no data	2005	2009			4
Peru	Arrastre industrial	Trawl	2010	2016			
Peru	Palangre de fondo	Longline - demersal	2014	2016			
South Africa	Tuna Longline Fishery - Joint Venture Vessels only	Longline - pelagic	2004	2013			74
South Africa	Patagonian Toothfish Longline	Longline - demersal	2004	2020			9
South Africa	Tuna / Swordfish Longline (South African vessels only)	Longline - pelagic	2004	2012			27
South Africa	Hake Longline INSHORE	Longline - demersal					

Fishery		Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
South Africa	Hake Longline OFFSHORE	Longline - demersal	2018	2020			8
South Africa	Demersal Shark Longline	Longline - demersal	2013	2013			
South Africa	Demersal Trawl OFFSHORE	Trawl	2004	2020			4
South Africa	Hake INSHORE Trawl	Trawl	2020	2020			4
South Africa	Demersal Hake trawl offshore	Trawl					
South Africa	Large Pelagics	Longline - pelagic	2014	2020			26
Spain	Pesquería de Palangre de fondo en el océano Antártico (CCAMLR)	Longline - demersal	2010	2020			
Spain	Palangre De Superficie Pacífico (IATTC)	Longline - pelagic	2011	2019		4	5
Spain	Pesquería De Cerco Dirigida A Atunes Tropicales Océanos Atlántico, Índico Y Pacífico	purse seines	2018	2020			
Spain	Palangre de superficie dirigido a grandes pelágicos del Mediterráneo	Longline - pelagic	2004	2019		43	50
Spain	Pesquerías Lejanas Arrastre Gran Altura Norte	Trawl	2012	2020			
Spain	Pesquería de arrastre de gran altura en Atlántico Sudoeste (ATSW-MALVINAS)	Trawl	2011	2020			1
Spain	Palangre de superficie dirigido a pez espada O. Atlántico (ICCAT-ATL)	Longline - pelagic	,2020	2020		2	2
Spain	Palangre de superficie dirigido a pez espada en océano Índico (IOTC)	Longline - pelagic	2004	2019		6	11
Spain	Pesquería de arrastre de fondo dirigida a la merluza en Atlántico Centro-oriental (CECAF)	Trawl	2010	2019			
Spain	Palangre de superficie dirigido a pez espada (WCPFC)	Longline - pelagic	2010	2011			1

Fishery		Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
Spain	Pesquería dirigida a especies demersales y pelágicas en zonas ICES (VI, VII, VIII y IX)	gillnet and entangling nets	2004	2020			2
		Longline - demersal					
		purse seines					
		Trawl					
Spain	Palangre y arrastre de fondo en el Mediterráneo español (excepto tñidos)	Longline - demersal	2009	2019			
		Trawl					
Spain	Pesquería de arrastre dirigida a crustáceos en Atlántico Centro-Este	Trawl	2010	2019			
Spain	Flota de arrastre cefalopodera y de peces de aleta congeladora (mãtier OTB_MCF>70_0_0)	Trawl	2015	2019			
Spain	Flota artesanal polivalente dirigida a especies demersales de Canarias (mãtier MIS_DES_0_0_0)	Longline - demersal	2015	2019			
		Longline - pelagic					
		pots/traps					
Spain	Flota artesanal de cerco dirigida a pequeños pelágicos en Canarias (mãtier PS_SPF_10_0_0)	purse seines	2017	2019			
Spain	Flota de cebo vivo de Canarias y tropical (base en Dakar) de tñidos y especies afines. Mãtiers: LHP_LPF_0_0_0 (TROP) y LHP_LPF_0_0_0 (MSP)	bait boats fishing for tuna	2016	2018			2
Spain	Palangre de Fondo dirigida a Austromerluza patagónica y otras especies, en aguas de SIOFA (Océano ãndico)	Longline - demersal	2017	2020		5	5
Spain	South East Atlantic Fisheries (SEAFO Convention Area)	Longline - demersal	2020	2020			
Spain	SPRFMO: South Pacific regional fishing Convention area.	Longline - demersal	2019	2019			
Spain	Flota vasca dirigida a tñidos	bait boats fishing for tuna	2018	2019			6
United Kingdom	Bluenose/Bluefish (Hyperoglyphe antarctica) - Tristan da Cunha	Longline - demersal	2004	2013			9

Fishery		Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
United Kingdom	Demersal longline fishery for Patagonian toothfish - South Georgia ⁶	Longline - demersal	2004	2019			53
United Kingdom	Trawl fishery targeting Icefish (Champsocephalus gunnari) in CCAMLR 48.3 (South Georgia) ⁶	Trawl	2004	2013			20
United Kingdom	Trawl fishery for Antarctic krill (South Georgia) ⁶	Trawl	2004	2013			
United Kingdom	Demersal longline fishery for Patagonian toothfish (Dissostichus eleginoides) - Falkland Islands ⁶	Longline - demersal	2004	2019			33
United Kingdom	Finfish demersal trawl fishery - Falkland Islands ⁶	Trawl	2004	2019			52
United Kingdom	Loligo gahi demersal trawl fishery - Falkland Islands ⁶	Trawl	2004	2019			51
United Kingdom	Finfish pelagic trawl fishery - Falkland Islands ⁶	Trawl	2004	2012			5
United Kingdom	Illex argentinus jig fishery - Falkland Islands ⁶	squid jig	2004	2012			
Uruguay	Palangre pelágico	Longline - pelagic	2004	2010	12	147	12
Uruguay	Palangre de fondo (Merluza Negra Dissostichus eleginoides)	Longline - demersal	2015	2018		4	4
Uruguay	Arrastre de fondo (Merluza común M. hubbsi)	Trawl	2019	2019		3	3
Uruguay	Palangre de fondo (Cherna Polyprion americanus)	Longline - demersal	2015	2020		9	9
USA	Pacific halibut (Alaska)	Longline - demersal pots/traps	2004	2020	34		
USA	Alaska Demersal Groundfish Trawl	Trawl	2004	2020	45		23
USA	Alaska demersal longline	Longline - demersal pots/traps	2004	2020	75		41
USA	Hawaii-based Pelagic Longline, Shallow Set	Longline - pelagic	2004	2019	156	393	392
USA	Hawaii-based Pelagic Longline, Deep Set	Longline - pelagic	2004	2019	106	555	556
USA	At-Sea Hake Trawl (Mothership Catcher Vessels & Catcher Processors; U.S. West Coast)	Trawl	2004	2019	90		14
USA	Limited Entry Sablefish-	Longline -	2004	2019	160		

Fishery		Gear Types	Earliest year	Latest year	Estimates	Rate	Raw data
	Endorsed Fixed Gear (U.S. West Coast)	demersal					
		pots/traps					
USA	Open Access Fixed Gear (U.S. West Coast)	Longline - demersal	2004	2019	81		
		pots/traps					
USA	Directed Pacific Halibut (U.S. West Coast)	Longline - demersal	2017	2019	21		
USA	U.S. WA/OR/CA Ocean Pink Shrimp Fisheries	Trawl	2007	2019	91		

¹ No interactions detected, no seabird observers

² No interactions

³ Small vessels, no observers

⁴ No observers

⁵ Originally reported separately as Deepwater, Inshore, Middle depth and Pelagic Trawl

⁶ A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty of the Falkland Islands (Islas Malvinas), South Georgia and the South Sandwich Islands (Islas Georgias del Sur e Islas Sandwich del Sur) and the surrounding maritime areas.

ANNEX 2

Summary of Reporting	2019	2019 %	2021	2021 %
Number of Parties/States reporting	14		14	
Total fisheries	91		113	
Total fisheries where at least one stratum reported total estimates of mortality (for any taxa or totals)	9	9.9	18	15.9
Total fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	10	11.0	11	9.7
Total fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	53	58.2	57	50.4
Total Longline - demersal fisheries	26	28.6	33	29.2
Total Longline - demersal fisheries where at least one stratum reported total estimates of mortality	3	3.3	8	7.1
Total Longline - demersal fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	4	4.4	3	2.7
Total Longline - demersal fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	17	18.7	11	9.7
Total Longline - pelagic fisheries	21	23.1	22	19.5
Total Longline - pelagic fisheries where at least one stratum reported total estimates of mortality	4	4.4	4	3.5
Total Longline - pelagic fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	8	8.8	4	3.5
Total Longline - pelagic fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	20	22.0	12	10.6
Total Trawl fisheries	30	33.0	41	36.3
Total Trawl fisheries where at least one stratum reported total estimates of mortality	2	2.2	5	4.4
Total Trawl fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	2	2.2	2	1.8
Total Trawl fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	20	22.0	19	16.8
Total squid jig fisheries	1	1.1	2	1.8
Total squid jig fisheries where at least one stratum reported total estimates of mortality	0	0	0	0
Total squid jig fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	0	0	0	0
Total squid jig fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	0	0	0	0
Total pots/traps fisheries	2	2.2	6	5.3
Total pots/traps fisheries where at least one stratum reported total estimates of mortality	0	0	4	3.5
Total pots/traps fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	0	0	0	0

Summary of Reporting	2019	2019 %	2021	2021 %
Total pots/traps fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	1	1.1	0	0
Total purse seines fisheries	7	7.7	9	8.0
Total purse seines fisheries where at least one stratum reported total estimates of mortality	0	0	0	0
Total purse seines fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	1	1.1	1	0.9
Total purse seines fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	5	5.5	6	5.3
Total boat seines fisheries	0	0	0	0
Total boat seines fisheries where at least one stratum reported total estimates of mortality	0	0	0	0
Total boat seines fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	0	0	0	0
Total boat seines fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	0	0	0	0
Total gillnet and entangling nets fisheries	4	4.4	4	3.5
Total gillnet and entangling nets fisheries where at least one stratum reported total estimates of mortality	0	0	1	0.9
Total gillnet and entangling nets fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	1	1.1	1	0.9
Total gillnet and entangling nets fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	3	3.3	2	1.8
Total bait boats fishing for tuna fisheries	1	1.1	2	1.8
Total bait boats fishing for tuna fisheries where at least one stratum reported total estimates of mortality	0	0	0	0
Total bait boats fishing for tuna fisheries where at least one stratum reported rates of bycatch (no estimates of mortality)	0	0	0	0
Total bait boats fishing for tuna fisheries where at least one stratum reported raw observer data (no estimates of mortality or rates)	0	0	2	1.8
Total fisheries where Gear type not specified	5	5.5	5	4.4

ANNEX 3.

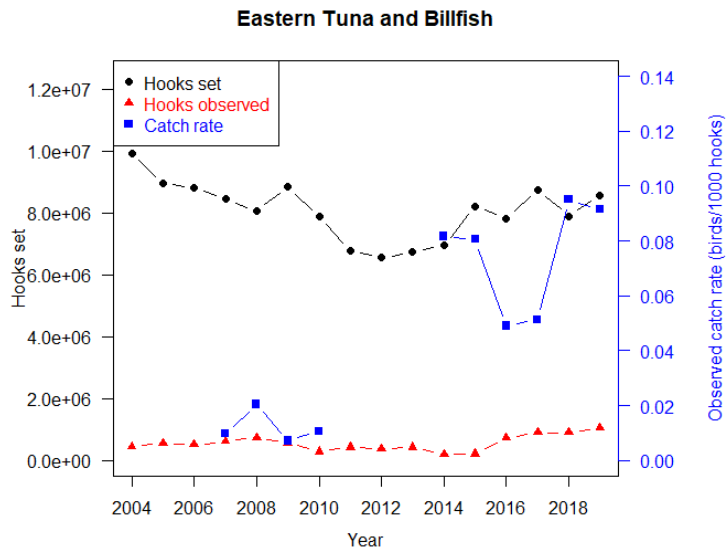


Fig 1. Total hooks set (Hooks set), hooks observed by the observer (Hooks observed) and estimated catch rate (number of birds recorded killed / Hooks observed *1000; Observed catch rate) for the Australian Eastern Tuna and Billfish fishery (pelagic longline). Total effort and proportion of hooks observed remained approximately constant throughout the period 2004-2019. Observed catch rate was low up to 2013 (<0.02 birds/1000 hooks). Several years had no birds noted as killed; it was unclear if this is due to no birds being observed killed (hence, a true zero), or simply no data being entered. Since 2014, observed catch rate has fluctuated between 0.05-0.10 birds/1000 hooks.

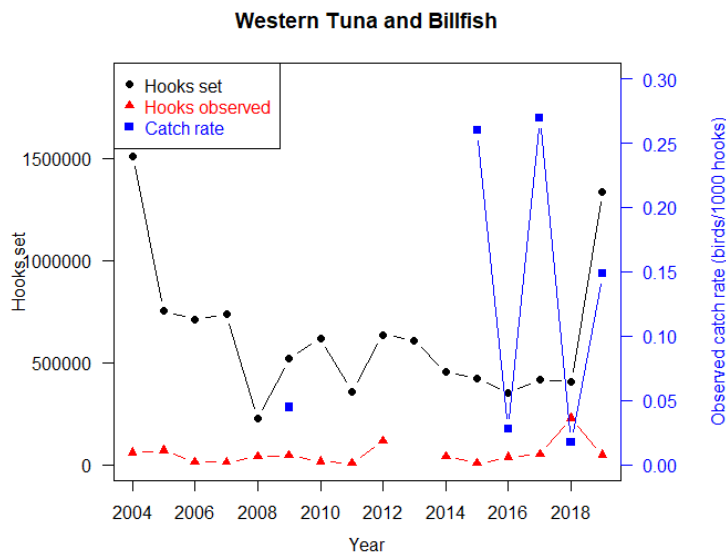


Fig 2. Total hooks set (Hooks set), hooks observed by the observer (Hooks observed) and estimated catch rate (number of birds recorded killed / Hooks observed *1000; Observed catch rate) for the Australian Western Tuna and Billfish fishery (pelagic longline). Total effort varied with high fishing effort in the year 2004 and 2019. Number of hooks observed remained approximately constant throughout the period 2004-2019. Most years up to 2014 had no birds noted as killed; it was unclear if this is due to no birds being observed killed (hence, a true zero), or simply no data being entered. Since 2014, observed catch rate has fluctuated considerably, with two years below 0.05 birds/1000 hooks, but three years over 0.15 birds/1000 hooks killed.

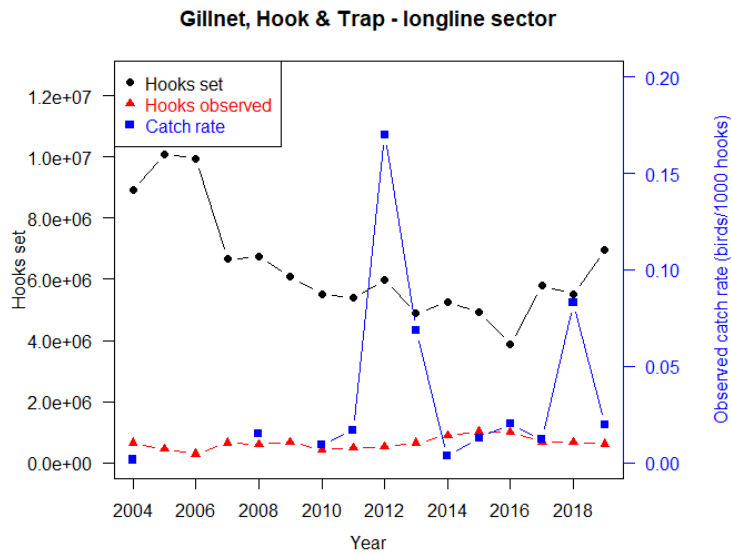


Fig 3. Total hooks set (Hooks set), hooks observed by the observer (Hooks observed) and estimated catch rate (number of birds recorded killed / Hooks observed *1000; Observed catch rate) for the Australian longline sector for the Gillnet, Hook and Trap fishery (pelagic longline). Total effort varied with highest fishing effort up to 2006. Number of hooks observed remained approximately constant throughout the period 2004-2013. Up to 2013, observed effort was approximately constant. Observing changed in 2013, and number of hooks observed was no longer recorded in the forms. However it was noted elsewhere that 10% of hooks were observed on video since 2015. Observed catch rate was low in most years, but with high observed catch rates in 2012, 2013 and 2018.

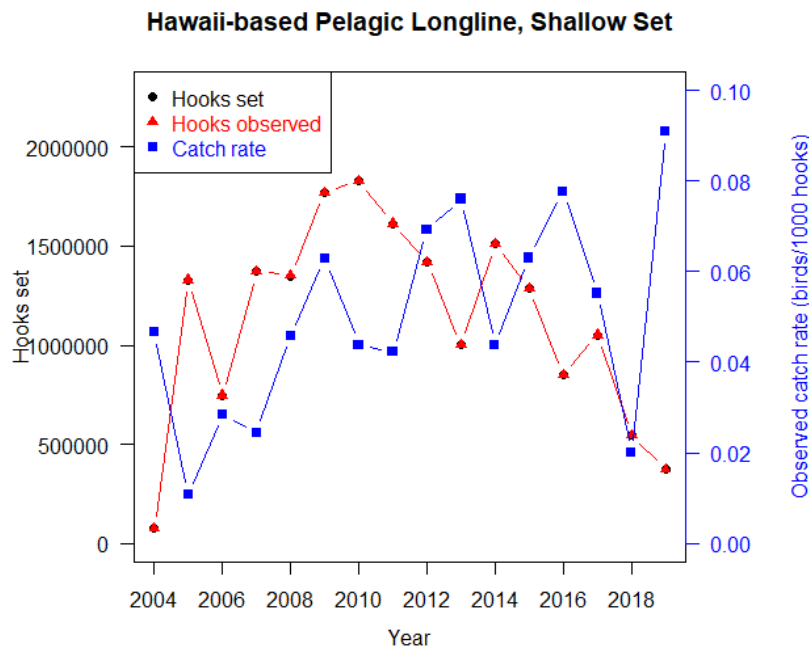


Fig 4. Total hooks set (Hooks set), hooks observed by the observer (Hooks observed) and estimated catch rate (number of birds recorded killed / Hooks observed *1000; Observed catch rate) for the Hawaiian shallowset pelagic longline. For shallow set fishery, 100% of hooks were observed. Total effort was quite variable over the period 2004-2019. Observed catch rate was also variable around 0.05 birds/1000 hooks.