Berlengas
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WORKSHOP

Reducing seabird bycatch in European Waters

Challenges & Opportunities

6th March 2019

PENICHE - PORTUGAL

PROGRAMME

09H30
Registration

10H00-10H15
Formal opening with LIFE Berlengas partners

10H15-10H45
Eliminating bycatch – are Europe's seabirds off the hook? **EUAN DUNN, RSPB**

How to mitigate seabird bycatch: technology and innovation

CHAIR: IVÁN RAMÍREZ - BIRDLIFE INTERNATIONAL

10H45-11H00
Trialing different mitigation measures to reduce seabird bycatch in Ilhas Berlengas SPA
ANA ALMEIDA, SPEA BIRDLIFE PORTUGAL

11H00-11H15
Seabird bycatch mitigation in artisanal demersal longliners of the Mediterranean
VERO CORTÉS, SEO/BIRDLIFE

11H15-11H30
Sea ducks bycatch mitigation trails in Lithuania
JULIUS MORKUNAS, LOD BIRDLIFE LITHUANIA

11H30-11H45
Coffee break

11H45-12H00
Seabird bycatch mitigation - Research & Development **PETE KIBEL, FISHTEK**

12H00-12H15
Mitigation of seabird bycatch in the Special Protection Area (SPA) of Aveiro-Nazaré
JOSÉ VINGADA, SPVS PORTUGUESE WILDLIFE SOCIETY

12H15-12H30
Towards the development of novel mitigation measures in purse seine fisheries
NINA DA ROCHA, ALBATROSS TASK FORCE - RSPB

12h30-13H00
Q&A

13H00
Lunch

The future – how do we tackle the problem

CHAIR: LUIS COSTA - MAVA FOUNDATION

15H00-15H15
How the EU will eliminate seabird bycatch
EC REPRESENTATIVE

15H15-15H30
The shortcomings in tackling seabird bycatch in the EU
BRUNA CAMPOS, BIRDLIFE INTERNATIONAL

15H30-17H00
Roundtable and debate with national authorities **IPMA, ICNF & DGRM**

17H00-17H30
Wrap Up

17H30
Closing cocktail

spea · Life · Natura 2000 · Fundo Ambiental · Berlengas · ICNF · Município de Peniche · CICS.NOVA · FCSH · Escola Superior de Turismo e Tecnologia do Mar · BirdLife International

Marine Task Force, Peniche, 6 March 2019

Eliminating bycatch:

are Europe's seabirds off the hook?

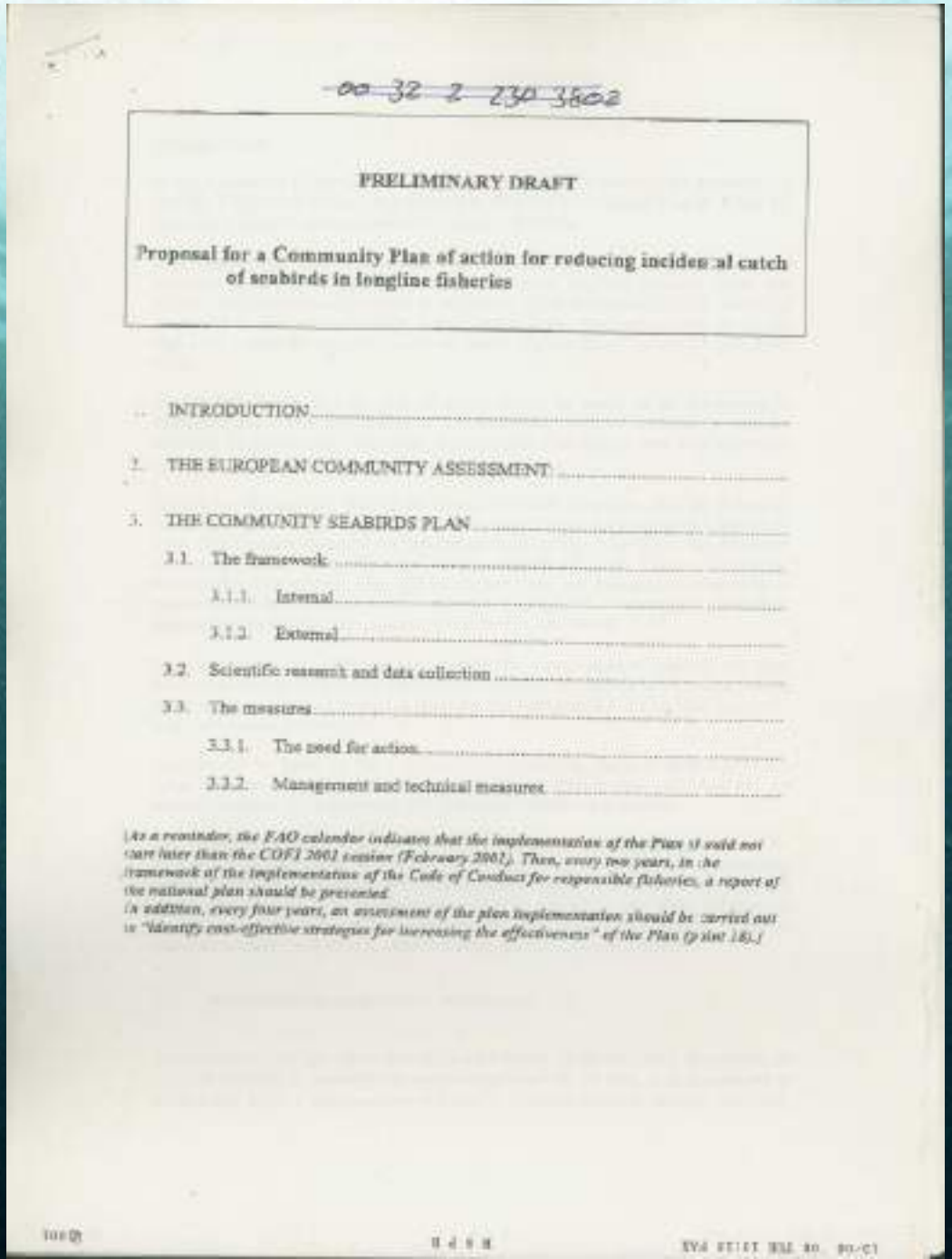
Euan Dunn

Outline

- EU Seabird Plan of Action
- Legislation
- Implementation
- Reflections and challenges

2001

Commission presents a ‘preliminary draft plan’ to FAO- COFI



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PRELIMINARY DRAFT

Proposal for a Community Plan of action for reducing incidental catch of seabirds in longline fisheries

[As a reminder, the FAO calendar indicates that the implementation of the Plan should not start later than the COFI 2002 session (February 2002). Then, every two years, in the framework of the implementation of the Code of Conduct for responsible fisheries, a report of the national plan should be presented.
In addition, every four years, an assessment of the plan implementation should be carried out to "identify cost-effective strategies for increasing the effectiveness" of the Plan (point 18).]

The case for a Community Plan of Action for reducing incidental catch of seabirds in longline fisheries

BirdLife INTERNATIONAL

European Community Plan of Action (ECPOA) for reducing incidental catch of seabirds in fisheries

Proposal by BirdLife International

September 2009

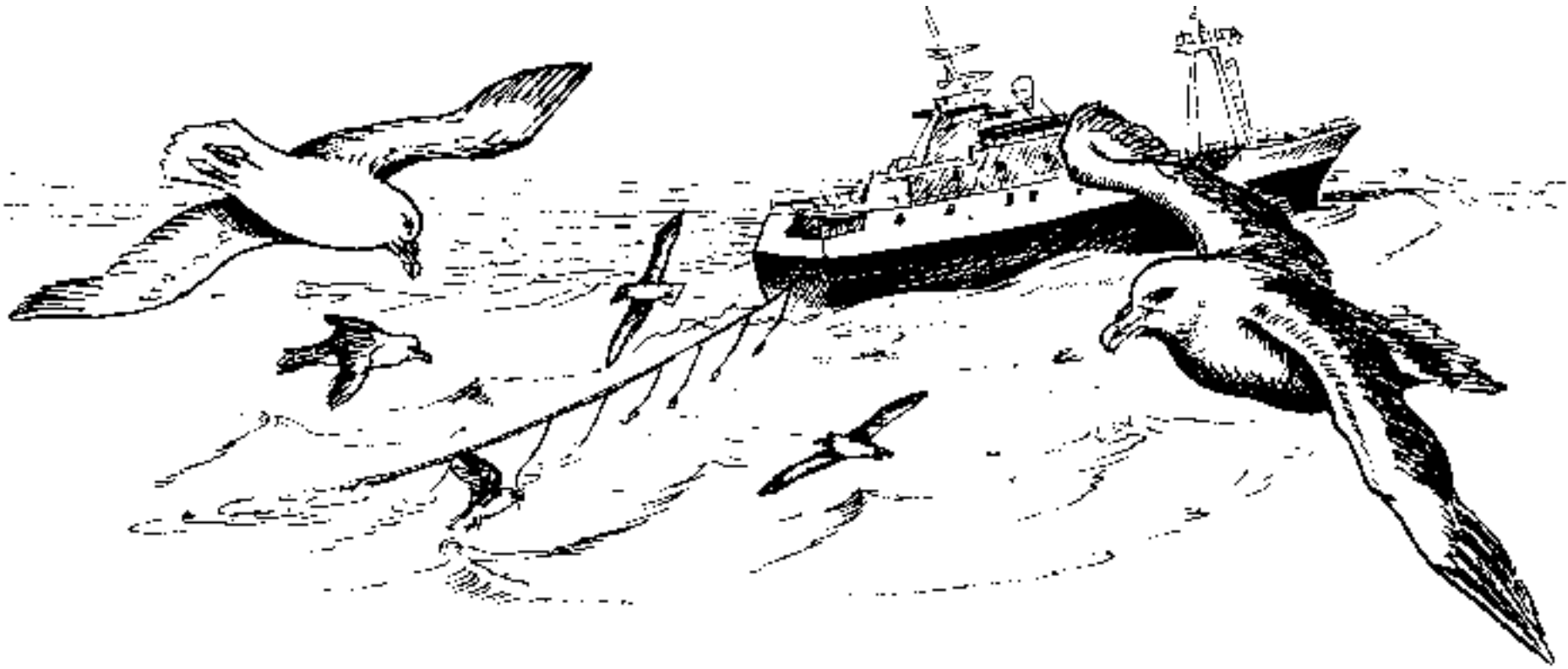
RSPB for birds for people for ever

BirdLife INTERNATIONAL


GLOBAL FISHING WATCH BETA
Gran Sol
Vigo
United Kingdom
Ireland
Netherlands
Belgium
Luxembourg
France
Switzerland
Andorra
Spain
FleetMon.com

Gran Sol hake longline fishing fleet (2017)

Spain (69), UK (12) France (10), Ireland (1)



Spanish fleet on the Gran Sol, 2006-07

Seabird	Birds caught per 1000 hooks (bycatch rate)	Estimated number caught per annum
Great shearwater	0.546	39,908
Fulmar	0.277	9493
Gannet	0.038	1331
Sooty shearwater	0.034	1303
Kittiwake	0.109	4114
Great black-backed gull	0.004	158
TOTAL	1.008	56,307

Biological Conservation 142 (2009) 1269–1281

Contents lists available at ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Review

Bycatch in gillnet fisheries – An overlooked threat to waterbird populations

Ramūnas Žydelis [a,*], Jochen Bellebaum [b], Henrik Österblom [c], Markus Vetemaa [d], Bernd Schirmeister [e], Antra Stipniece [f], Mindaugas Dagys [g], Mennobart van Eerden [h], Stefan Garthe [i]

[a] Duke Center for Marine Conservation, Nicholas School of the Environment, Duke University Marine Laboratory, Beaufort, NC 28516, USA
[b] Institute for Applied Ecology Ltd., Alte Dorfstr. 11, 18184 Neu-Broderstorf, Germany
[c] Baltic Nest Institute, Stockholm Resilience Centre, Stockholm University, 106 91 Stockholm, Sweden
[d] Estonian Marine Institute, University of Tartu, Vanemuise 46a, 51014 Tartu, Estonia
[e] Nature and Biodiversity Conservation Union (NABU), Usedom Regional Group, Seestraße 37a, 17429 Seebad Bansin, Germany
[f] Laboratory of Ornithology, Institute of Biology, University of Latvia, Miera Str. 3, Salaspils 2169, Latvia
[g] Institute of Ecology of Vilnius University, Akademijos 2, Vilnius LT-08412, Lithuania
[h] Centre for Water Management, Rijkswaterstaat, P.O. Box 17 NL-8200 AA Lelystad, The Netherlands
[i] Research and Technology Centre (FTZ), University of Kiel, Hafentörn 1, D-25761 Büsum, Germany

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Coastal fisheries
Populations
Seabirds
Conflict resolution

ABSTRACT

Bird mortality in fishing gear is a global conse
longline and trawl fisheries threatens several s
bycatch in small-scale gillnet fisheries on bi
bycatch in coastal gillnet fisheries in the Balti
nitude of this problem and potential effects o
the study region, including divers (loons), gr
been reported as dying in fishing nets. The cu
studies providing such information, suggests t
ber that is almost certainly a substantial ur
100,000 and 200,000 waterbirds are killed pe
ally matched species distribution and periods
cies' foraging technique and were influenced
additive mortality on bird populations, we a
three species with the most extensive bycatch
that bycatch is a matter of concern for at leas
research in Europe and beyond should aim at unification of principles for bycatch

Baltic – Europe's hottest gillnet hotspot!

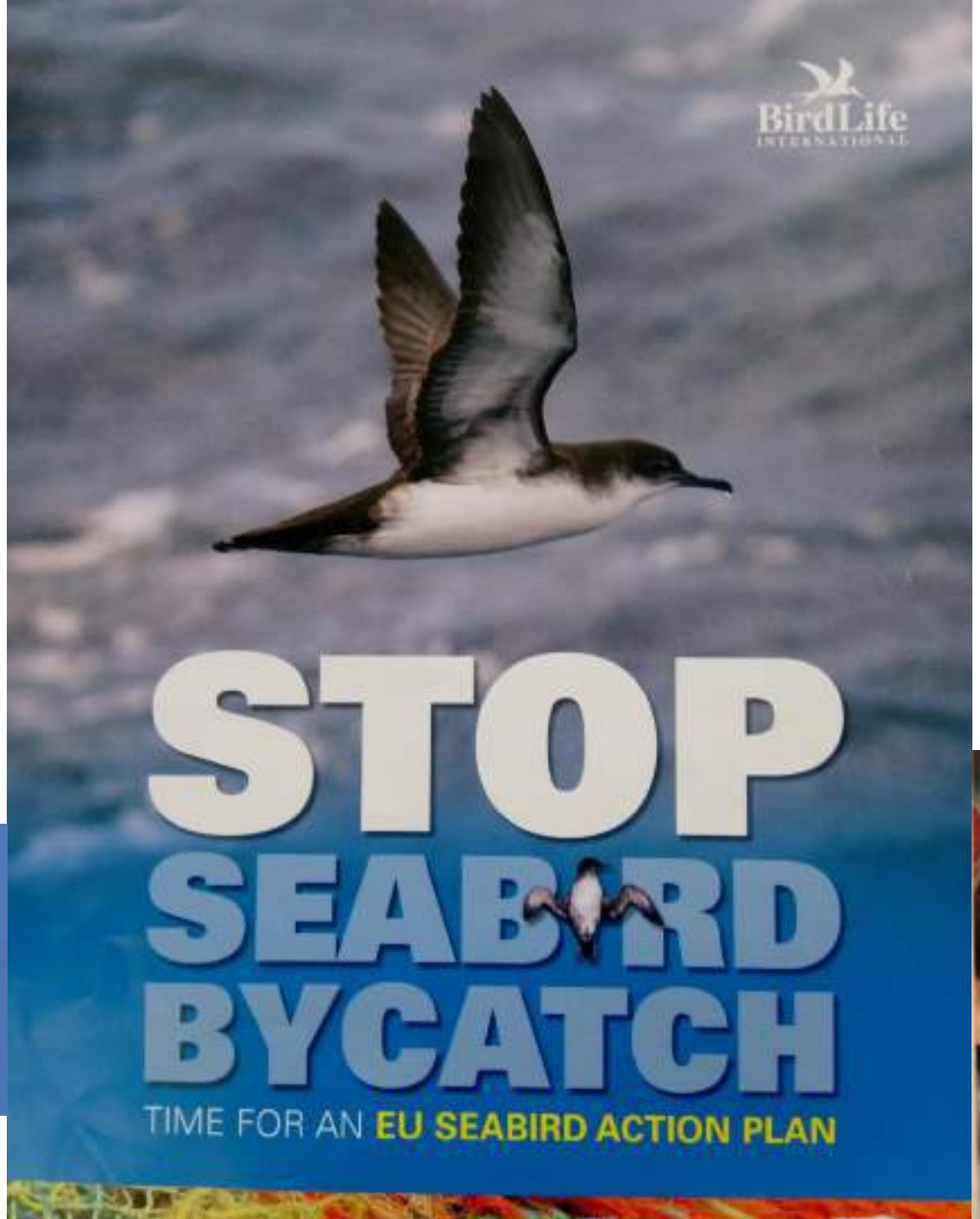
- Vulnerable species – pursuit divers & bottom feeders






- Conservatively, at least **76,000 birds/year**
- Bycatch levels unsustainable for at least two species


[Zydelis *et al*, 2009. Bycatch in gillnet fisheries – An overlooked threat to waterbird populations. Biological Conservation 142, 1269-1281]


BirdLife
INTERNATIONAL
STOP
SEABIRD
BYCATCH
TIME FOR AN EU SEABIRD ACTION PLAN

June 2010: Damanaki says '*It's time to do something*' – and commits to a plan by April 2011 (...then Feb 2012 etc)

Mosaic of seabird photos, each pixel representing 10 pledges from total of 23,000 EU citizens

16 Nov 2012: Commission finally adopted a Seabird Plan of Action - after just 12 years of campaigning !!!

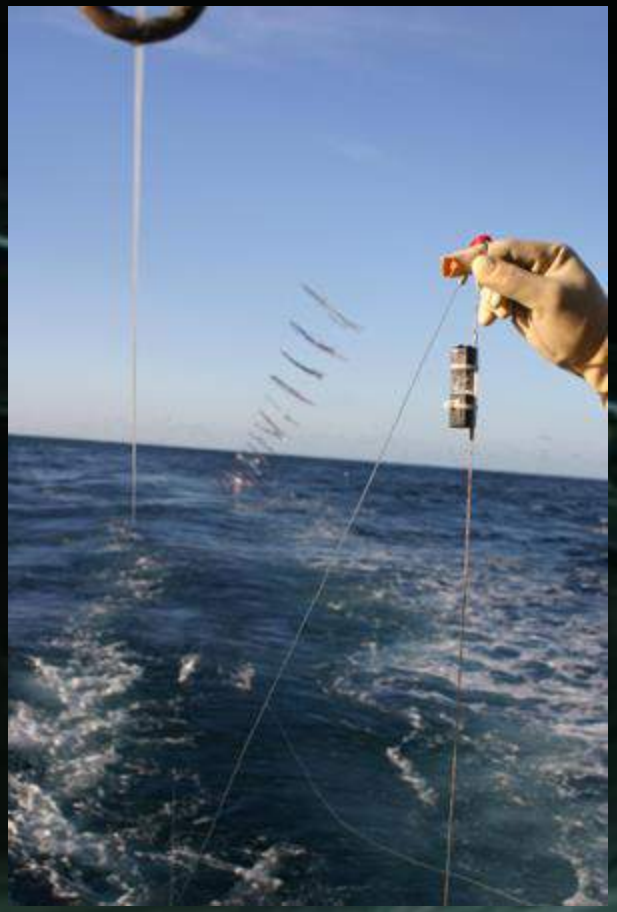
"The objective of the EU-POA is *to minimise and, where possible, eliminate the incidental catches of seabirds….*"

"Implement proven mitigation measures in longline fisheries in the Gran Sol, Mediterranean and non-EU waters… at least two of the following [BirdLife/ACAP best practice] measures should be used…. "

Night setting with minimum deck lighting

Bird-scaring (streamer/tori) lines

Line weighting



May 2017: Data Collection regulation

- new requirement to collect data on seabird bycatch

Member States must collect data on '*incidental by-catch of all birds, mammals and reptiles and fish protected under Union legislation and international agreements*'.

Will the CFP require seabird bycatch mitigation measures?

- New Technical Measures regulation still to be agreed

- In 2016 Commission proposed that Member States must take measures to '*minimise and where possible eliminate*' bycatch of seabirds, marine mammals and marine turtles in all sea basins

2018/19: Council position very weak:
not only 'business as usual' but worse!

- Proposes bycatch 'levels' whereas target should be to 'eliminate'
- Repeats what the Data Collection Regulation already requires (i.e. no new ambition): should be calling for NPOAs
- Specifies mitigation measures only for longlines, completely ignoring other fisheries and gears
- No mention of spatial measures

Feb 13, 2019 trilogue:
Council position unacceptable to BirdLife

BirdLife INTERNATIONAL
EUROPE AND CENTRAL ASIA

Brussels – 24 January 2019
For immediate release

Read online

France and Spain issue a death warrant for marine life

European governments fight to continue killing seabirds, dolphins and seaturtles and let fishing industry continue their status quo.

Implementation

OSPAR COMMISSION

Protecting and conserving the North-East Atlantic and its resources

HELCOM

ICES CIEM

OSPAR/HELCOM/ICES Working Group on Marine Birds (JWGBIRD) 2016

ToR 'b': *Review the implementation of the EU Plan of Action on Seabird Bycatch*

- More Member States need to develop and implement NPOAs
- NGOs (BirdLife partners) have initiated most projects and research with fishers (e.g. Lithuania, Germany, Portugal case studies in JWGBIRD Report)
- Member States need to build on these NGO initiatives
- Greater commitment needed to deploy REM (especially for vessels <12m)
- More focus needed on purse seines and recreational fishing

National Plans of Action

	Bycatch risk assessment + scoping of monitoring options (√) UK PoA now under development (2018-21) RSPB on advisory group for all these stages
	LOD to develop Lithuanian shadow plan (funded by Baltic Sea Conservation Foundation)
	BirdLife Cyprus to develop Cyprus shadow plan (MAVA funded)
	SEO/BirdLife may develop Spanish shadow plan (link to MAVA funding but unlikely before 2021)

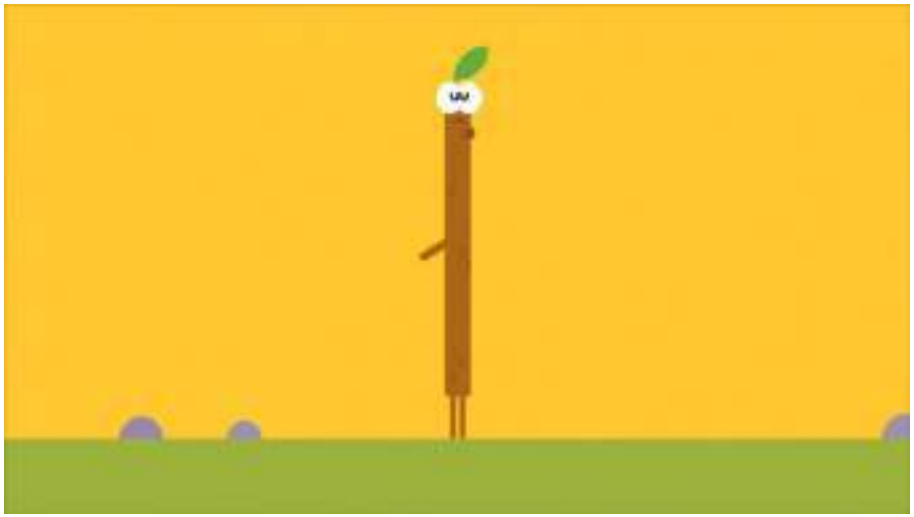
Geographical “hotspots” (case studies)


Activities
• Observer programmes
• Mitigation trials (incl ation)
• Alternative ge
• Data co uding Beached Bird Surveys)
• Wor d questionnaires with fishers
• Awareness-raising / outreach
Seabird Task Force
© Louise Hill

Reflections & challenges

- Seabirds are not yet ‘off the hook’ but major progress in the last 10-20 years, thanks largely to BirdLife
- *Overall aim for the fishing industry?*: Make an ecosystem-based approach just another cost of doing business!

Sticks or carrots?



Rules, regulations, remote monitoring, market pressure, campaigns, punitive measures

Help, support, collaboration, solutions-based research

Strong BirdLife role!

Sometimes it takes just one enterprising fishermen to transform a local fishery!

Decide when to hold Government's feet to the fire – we can't do everything ourselves

…Then choose your policy tools carefully

- EU PoA – as a voluntary instrument – has not driven change in most Member States
- Whereas the MSFD (Descriptor 1) has legal teeth, in theory forcing Member States to act to sustain seabird populations
- But we need a clear BirdLife position on GES threshold values for seabird populations and bycatch

Other challenges

- Small-scale fisheries (with often diverse gears)
- Recreational fisheries (Mediterranean, Baltic)
- Lack of bycatch data, especially for static gear
- Likewise for effort data
- Bycatch of species (notably Balearic shearwater) subject to irregular but often mass mortality events
- Observer access to vessels
- BirdLife project for Gran Sol (in 2006-07 the highest bycatch rate of any longline fishery in the world)

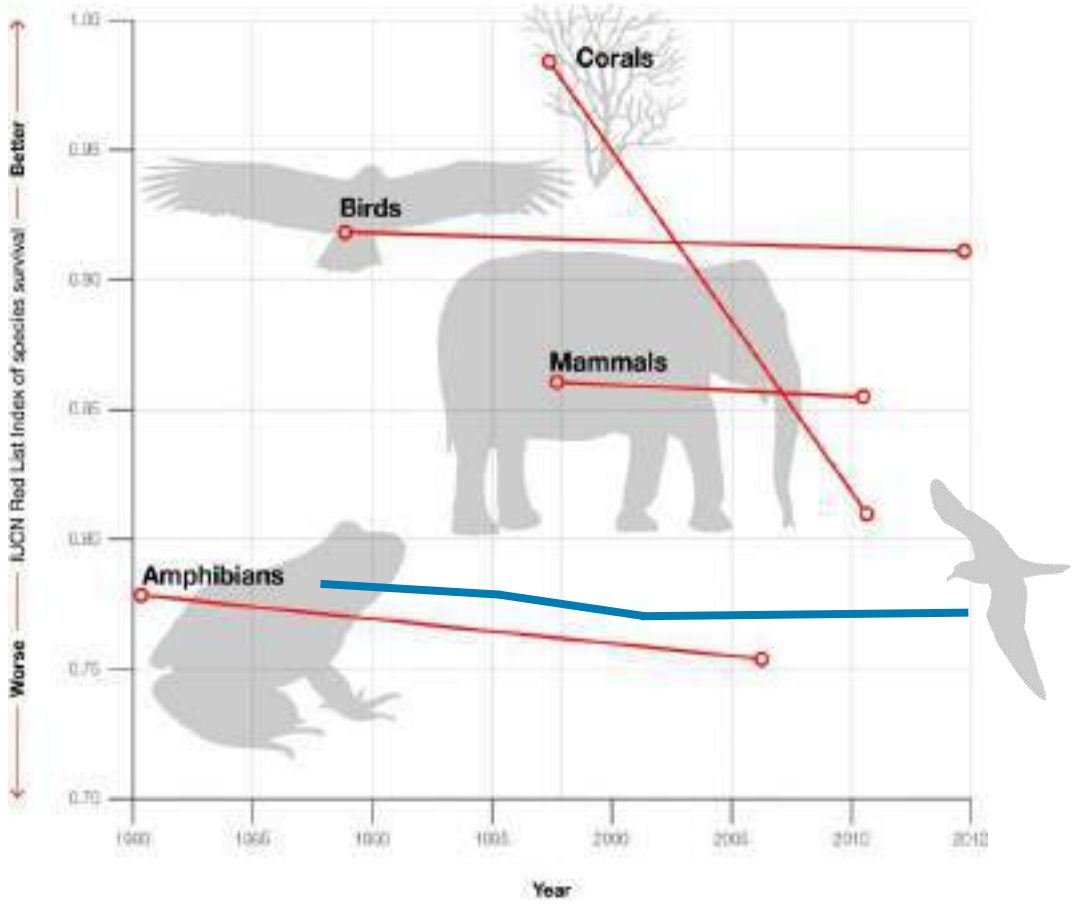
Acknowledgements

- BirdLife EU Marine and Fisheries Policy Officers (Tatiana Nemcova, Nathalie de Snijder, Johanna Karhu, Bruna Campos)
- BirdLife Marine Conservation Officers (Ivan Ramirez, Marguerite Tarzia, Lenke Balint)
- Ariel Brunner!
- RSPB and other BirdLife Partner colleagues
- Seabird-friendly fishers

Trialing different mitigation measures to reduce seabird bycatch in Ilhas Berlengas SPA

Ana Almeida, Nuno Oliveira, André Ferreira, Iván Gutiérrez, Ana Santos, Elisabete Silva e Joana Andrade | SPEA

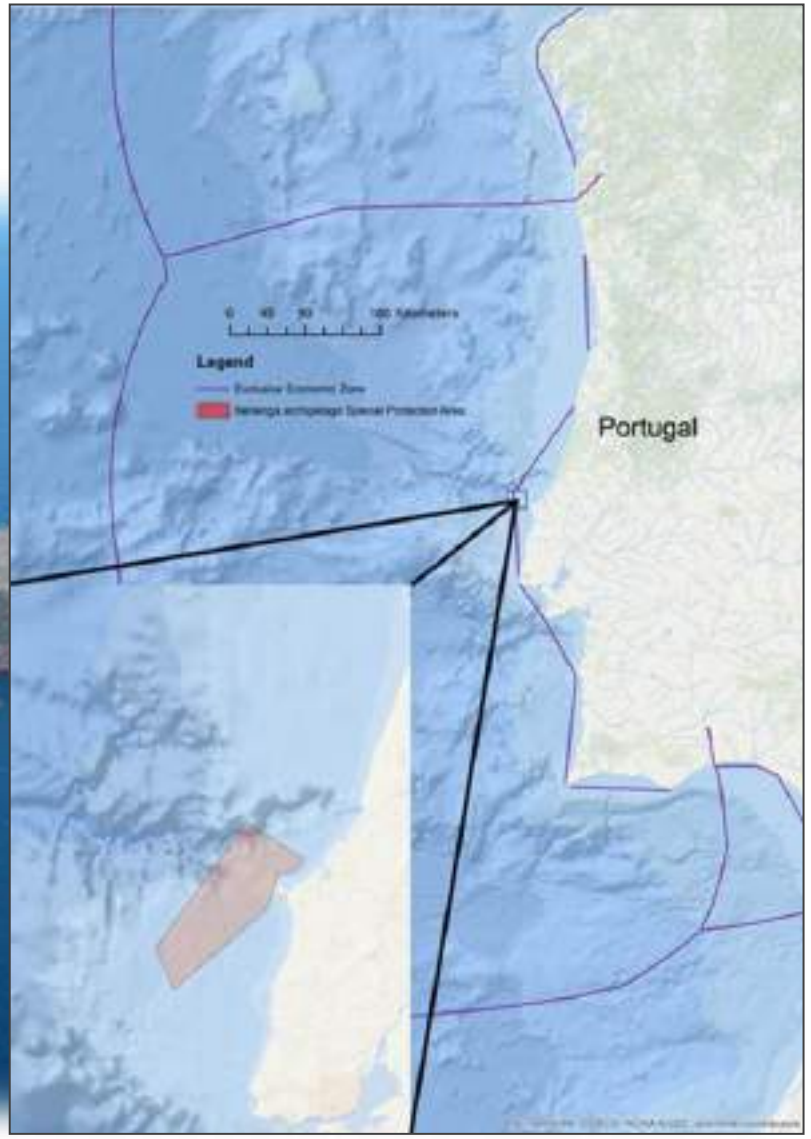
Why do we need to mitigate bycatch?



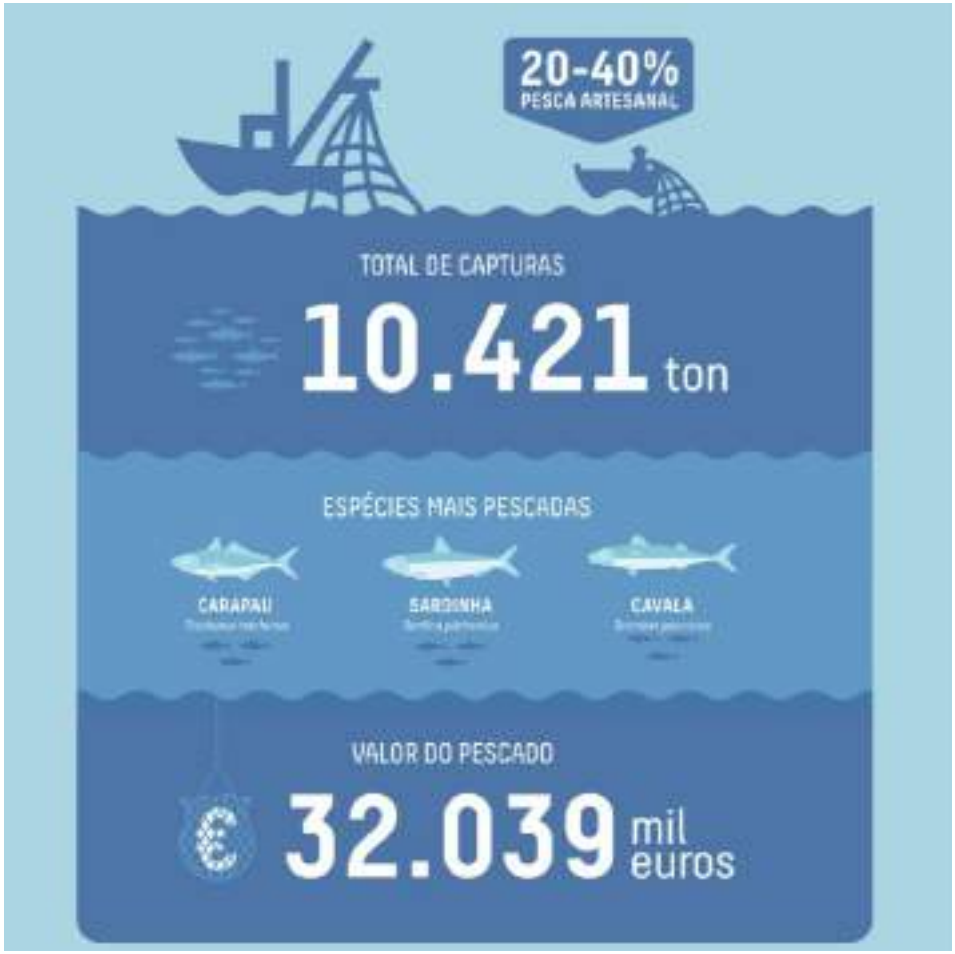
Seabirds are one of the most threatened group of animals

200.000 birds are bycaught every year in European waters

Ilhas Berlengas SPA



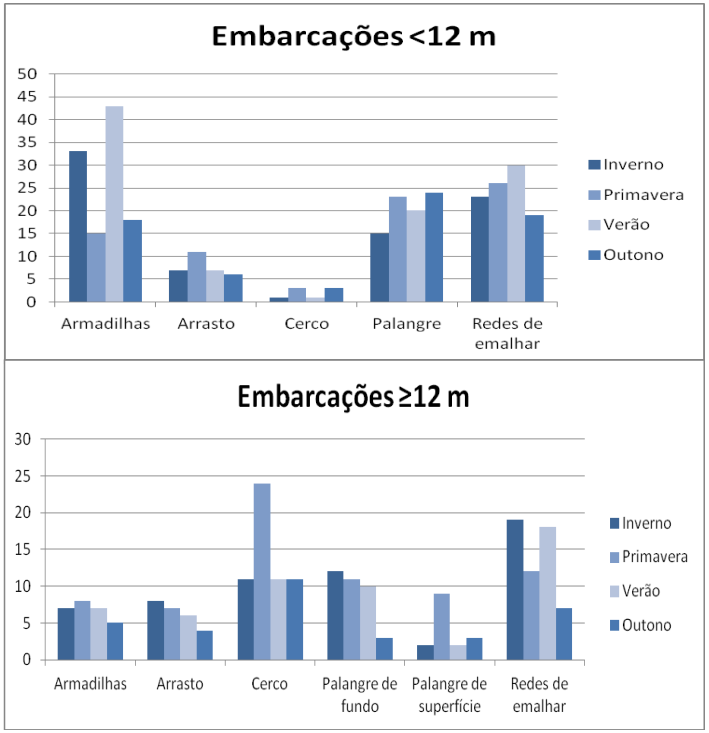
Peniche fishing fleet



2015 - 2018

- 295 fishing trips, 3880 events
- 18 vessels (pots, gillnets, demersal longline and purse seine)
- 233 hours @ sea
- *Sardina pilchardus, Scomber colias*, *Trachurus picturatus*, *T. trachurus*, *Octopus vulgaris*

- 594 interviews
- 169 vessels



On board observers program

Seabird species	Nº
Northern gannet	51
Cory shearwater	8
Shag	2
Cormorant	1
Great shearwater	1
Yellow leggeg gull	1
Larus fuscus/L. michahellis	1
Total	65

- Demersal longline and gillnets
- Spring and summer

Annual seabird bycatch estimate

	On board observers program		Interviews	
	Longline	**Gillnets**	**Longline**	**Gillnets**
Northern gannet	19783	1021	1078	2427
Cory shearwater	1543	0	31	1716
Shag	172	0	61	11
Gulls	634	74	134	368
Auks	0	0	27	22
Other species	345	0	72	0

Trialling contrast panels/ modified hooks

- Paired trials: experimental gear and control gear
- On board monitoring
- Collection of economic data

Mitigation measures effectiveness

- No seabird bycatch
- First opportunity to trial operablity of mitigation measures

Economic impact study

Net	Net length	Cost of material	Cost of material per net metre	Modification time (hrs)	Cost of labour to modify net	Total Cost to modify net	Original cost to manufacture net per metre	Cost to modify net with mitigation measure per metre	Increase in price per metre for modification (%)
1	600	281.25	0.47	18	56.9	338.15	1.4	0.56	40
2	1170	384.38	0.33	17.50	55.3	439.68	1.03	0.38	36.9
3	500	134.38	0.27	12	37.9	172.28	1.3	0.34	26.2

Impact of panel and hooks mitigation gear on fish catches

Experimental nets		**Experimental hooks**	
Total catch, all nets (kg)	**50.57**	**Total catch, all groups of hooks (kg)**	**9,6**
Mean catch per net/trip (kg)	2.53	Mean catch per group of hooks/trip (kg)	1,6
Max catch per net/trip (kg)	12.33	Max catch per group of hooks/trip (kg)	4,4
Min catch per net/trip (kg)	0	Min catch per group of hooks /trip (kg)	0
Sample size (n)	20	Sample size (n)	10
Control nets		**Control hooks**	
Total catch, all nets (kg)	**49.33**	**Total catch, all groups of hooks (kg)**	**23,9**
Mean catch per net/trip (kg)	2.74	Mean catch per group of hooks/trip (kg)	4,1
Max catch per net/trip (kg)	9.98	Max catch per group of hook/trip (kg)	14,8
Min catch per net/trip (kg)	0	Min catch per group of hooks/trip (kg)	0
Sample size (n)	18	Sample size (n)	10

Acceptability of mitigation measures

- Panels may influence fishing dynamics by increasing weigh on the gear
- Modified hooks last for less time
- All fishermen mention minimal impact on fish catches

What do we need?

- Simple and easy to use
- Cheap
- Do not influence fish catch or fishing operations
- **Significantly reduce seabird bycatch**

Final considerations

- More research on what seabirds find aversive
- More trials of different mitigation measures
- Collaboration between fishing industry, government bodies, expert bodies and academia
- Systematic and standardised data collection on fishing effort and bycatch in small scale fishing fleets
- Aditional funding

Next steps…

Cofinanciado por:

MedAves PESCA

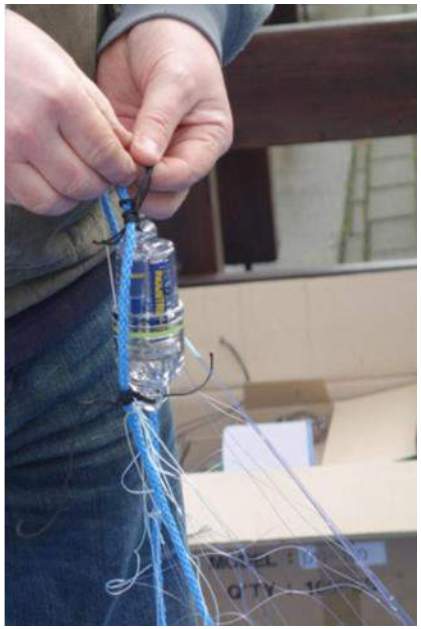
mar 2020

PORTUGAL 2020

UNIÃO EUROPEIA

Fundo Europeu dos Assuntos Marítimos e das Pescas

FISHTEK MARINE



Peniche , March 2019 | Ana Almeida | ana.almeida@spea.pt

www.spea.pt

www.facebook.com/spea.Birdlife | twitter.com/spea_birdlife

Seabird bycatch mitigation in artisanal demersal longliners of the Mediterranean

Vero Cortés

SEO BirdLife

PROGRAMA pleamar

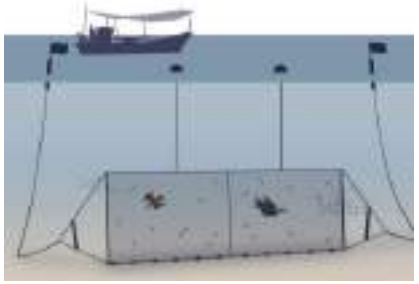
20 AÑOS

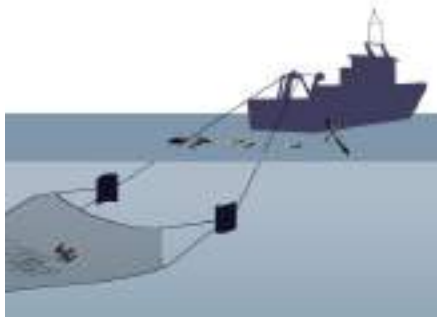
Unión Europea

Fondo Europeo Marítimo y de Pesca (FEMP)

Seabird bycatch – Spanish Mediterranean

- Bycacth detected in diverse gears, mainly **longlines** (demersal & pelagic), but also gillnets, purse-seiners & trawler



Martí Franch

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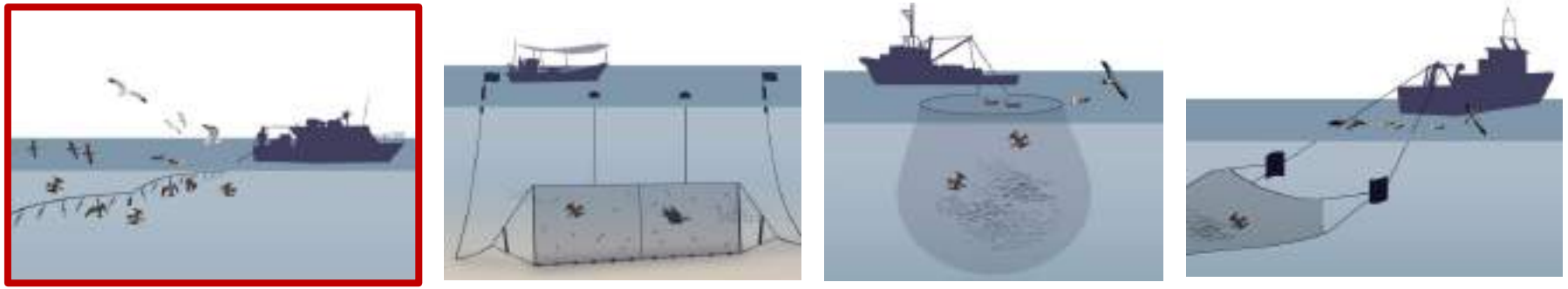

Martí Franch

- Major problem in small-scale fisheries (**artisanal**) – demersal longlines

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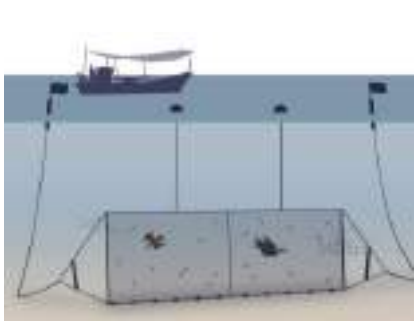
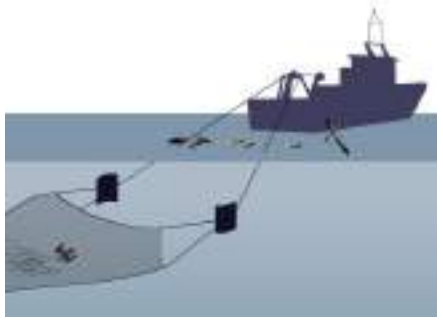




Martí Franch

- Major problem in small-scale fisheries (**artisanal**) – demersal longlines

- Bycatch rates vary between vessels – fishing practices, location of fishing grounds and the use of mitigation measures



Seabird bycatch – demersal longlines

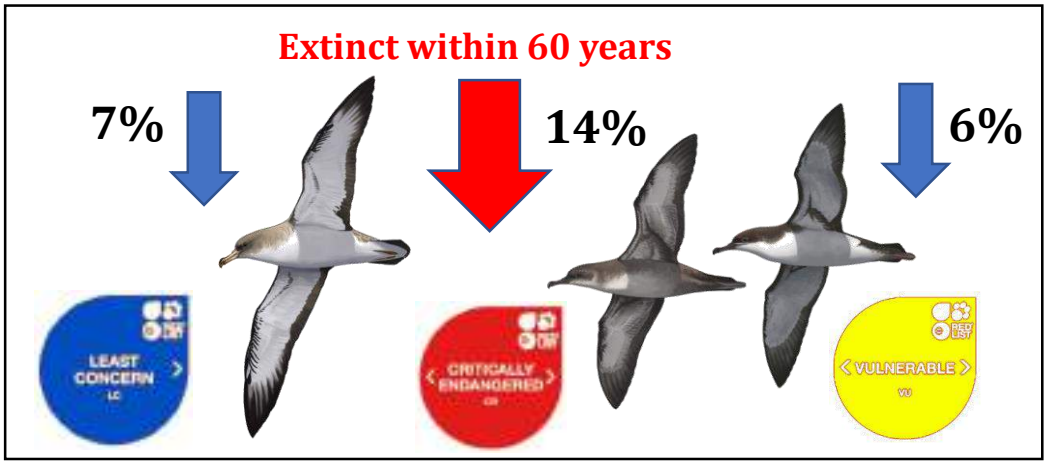
- Bird catches are relatively infrequent, but occasionally "mass mortality" events of birds (10s – 100s) - **Diving capabilities** (> 10 m) and **aggregative behaviour**

Seabird bycatch – demersal longlines

- Bird catches are relatively infrequent, but occasionally "mass mortality" events of birds (10s – 100s) - **Diving capabilities** (> 10 m) and **aggregative behaviour**

- Species highly sensitive, endemic to the basin:

Main cause of shearwater populations decline

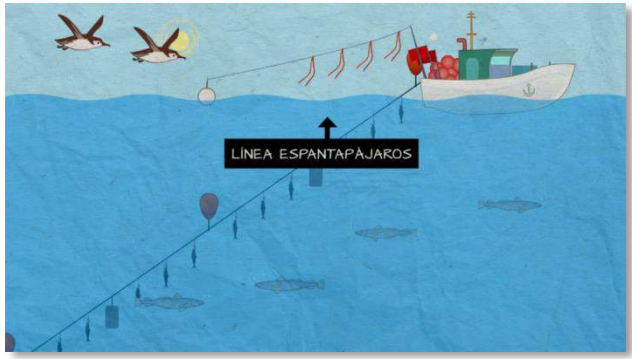


Best Practice Measures - demersal longlines

Night setting

Line weighting

Bird-scaring lines



Eduardo Rodríguez

<u>Other measures:</u>

- Area and seasonal closures
- Chilean system

Best Practice Measures - demersal longlines

Night setting

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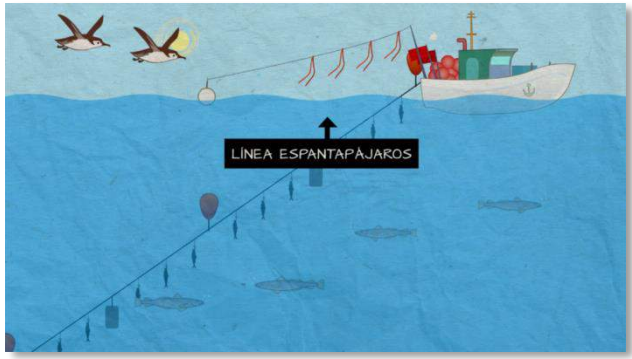

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INDUSTRIAL FISHERIES

Best Practice Measures - artisanal longlines

- Diversity of gears and methods used
- Small vessels and crew size
- Lack of mechanization
- Limited enforcement of existing regulations

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More flexible and less prescriptive approach

"Toolbox" of effective mitigation methods

Best Practice Measures - artisanal longlines

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- Small vessels and crew size
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More flexible and less prescriptive approach

"Toolbox" of effective mitigation methods

+

Educational/outreach campaigns

Long-term working plans

Training in safe handling and release

Definition of Best Practice

- Reduction of seabird mortality rate (Experimental research)
- Practical, safe and cost-effective measures
- Maintain catch rate of target species
- No effects on other protected species

A case study: Catalonia

Finding solutions to reduce seabird bycatch in artisanal fisheries

Mitigation measures used by fishermen

- Seabird interactions can cause significant economic losses for fishermen
- 85% small-scale and 62% of medium – scale fishermen have already tried to avoid seabird catches

  - **Bird- scaring devices**
  - **Night setting**
  - **Adding more weight to the line**
  - **Shorter and slower/faster settings**
  - **Avoiding places with large concentration of birds**

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.....but do not always work efficiently.....

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  - **Adding more weight to the line**
  - **Shorter and slower/faster settings**
  - **Avoiding places with large concentration of birds**

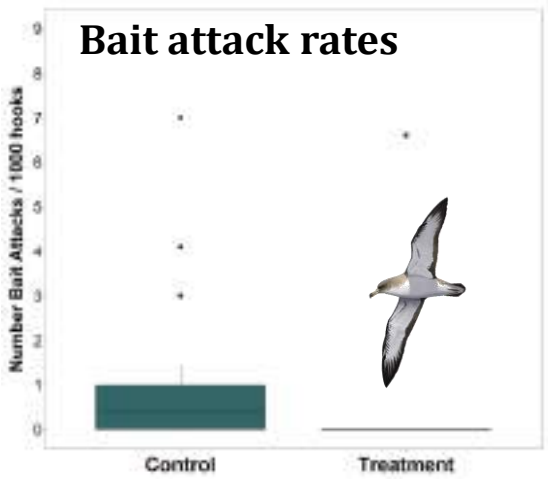
.....but do not always work efficiently.....

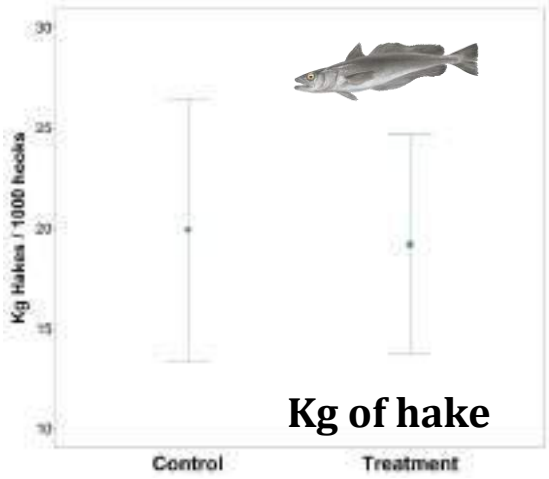
✓ **Help fishermen to refine their measures**

✓ **Encourage them to implement mitigation methods**

Mitigation measures tested

Night setting





Cortés & Gonzalez-Solís 2017

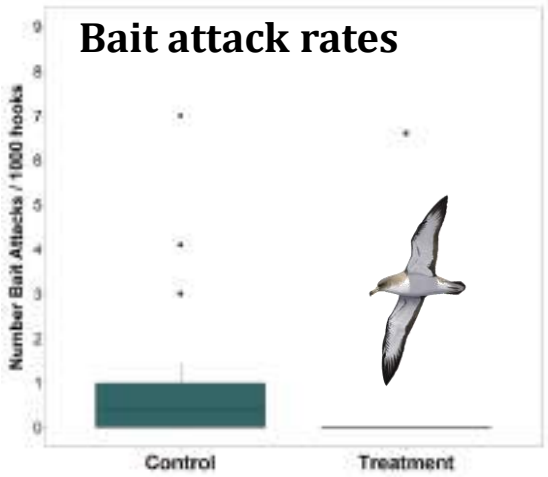
UNIVERSITAT DE BARCELONA

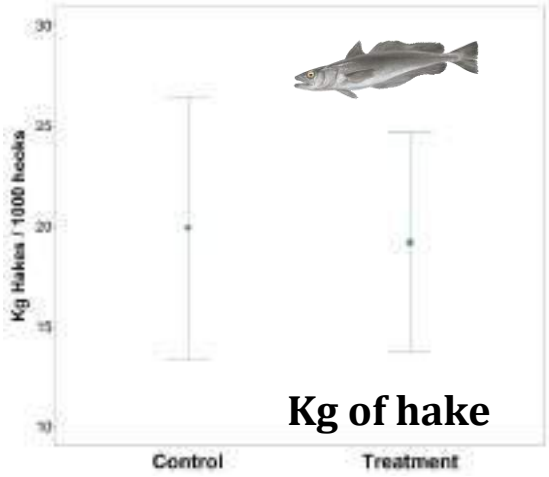
Reduction of seabird bycatch - No effect on target species

Nocturnal seabird species - Effects some commercial species

Mitigation measures tested

Night setting





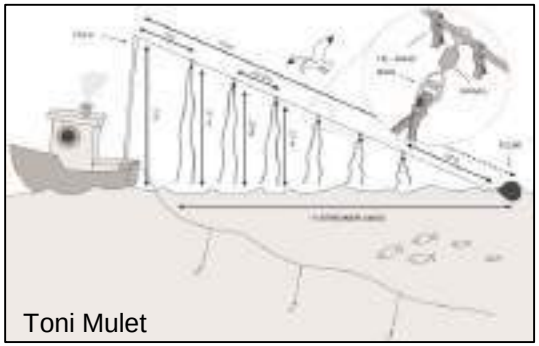
Cortés & Gonzalez-Solís 2017

UNIVERSITAT DE BARCELONA

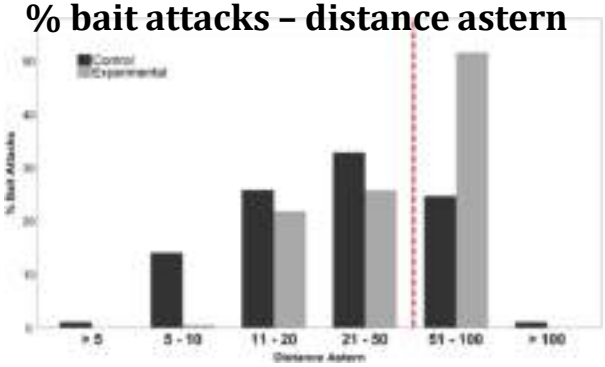
Reduction of seabird bycatch - No effect on target species

Nocturnal seabird species - Effects some commercial species

Bird-scaring lines



% bait attacks – distance astern

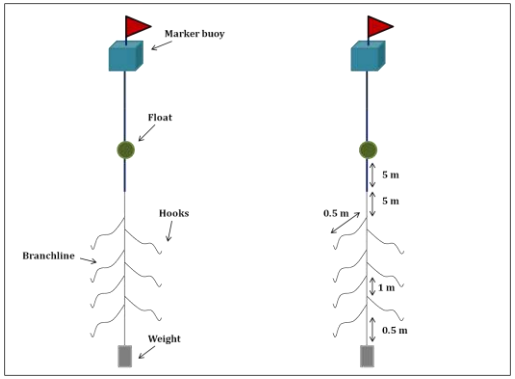


Reduction of bycatch risk
Easy to deploy and cheap

Ineffective in specific wind conditions

Mitigation measures tested

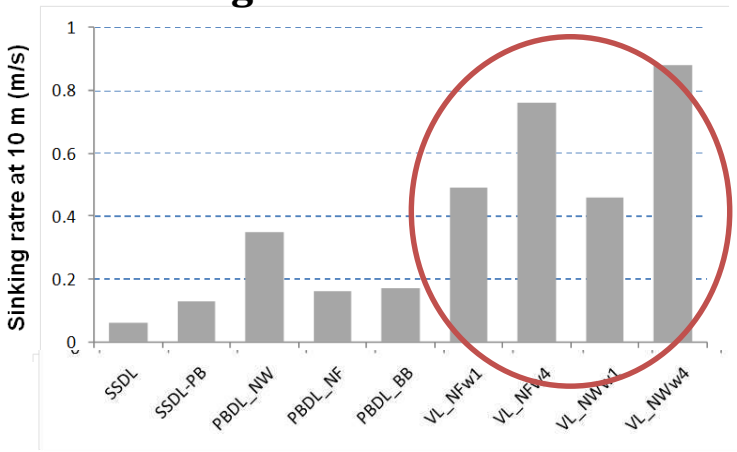
Vertical lines (Chilean system)



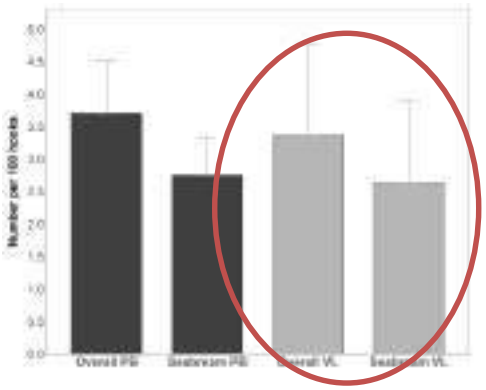
Increase hook sink rate
No effect on target species

Long duration of fishing operations
Specific target species (red seabream)

Sinking rate at 10 m



Number of catches x 100 hooks



Tarzia *et al* 2017

In Progress

NISURI Fastset - artisanal demersal longline setting system (ZEPAMED I -II project – Pleamar)

Brothers *et al* 2014

- Baited hooks are loaded inside of a PVC pipe
- **Faster longline setting -** birds have less opportunities to take the baited hooks
- Cheap, safe and time-saving benefits

In Progress

NISURI Fastset - artisanal demersal longline setting system (ZEPAMED I -II project – Pleamar)

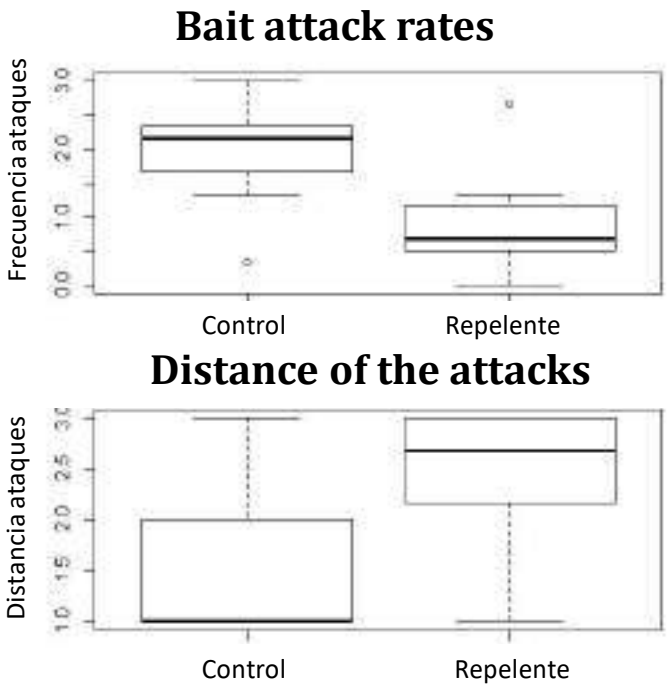
Brothers *et al* 2014

- Baited hooks are loaded inside of a PVC pipe
- **Faster longline setting -** birds have less opportunities to take the baited hooks
- Cheap, safe and time-saving benefits

Further work is needed to avoid some operational problems

In Progress

Olfactory repellent (ZEPAMED I project – Pleamar)



- Olfactory repellent used in agriculture to deter birds
- Reduce bait attacks and their distance to the stern

Need to assess its impact on environment and health and the effect of the wind direction

Educational/outreach campaign

- Informative videos
- Good practices manual
- Outreach materials
- Workshops
- Questionnaires
- Self-reporting logbook

Recommendations

- Vessel-specific management – “Toolbox”
- Economic incentives
- Easy to implement and manage
- Increase awareness on seabird bycatch
- Direct involvement of the fishermen
- Regulation to prescribe the use of mitigation


Juan Bécares


Josefina Maestre


Pep Arcos


Pau Marqués

THANK YOU!

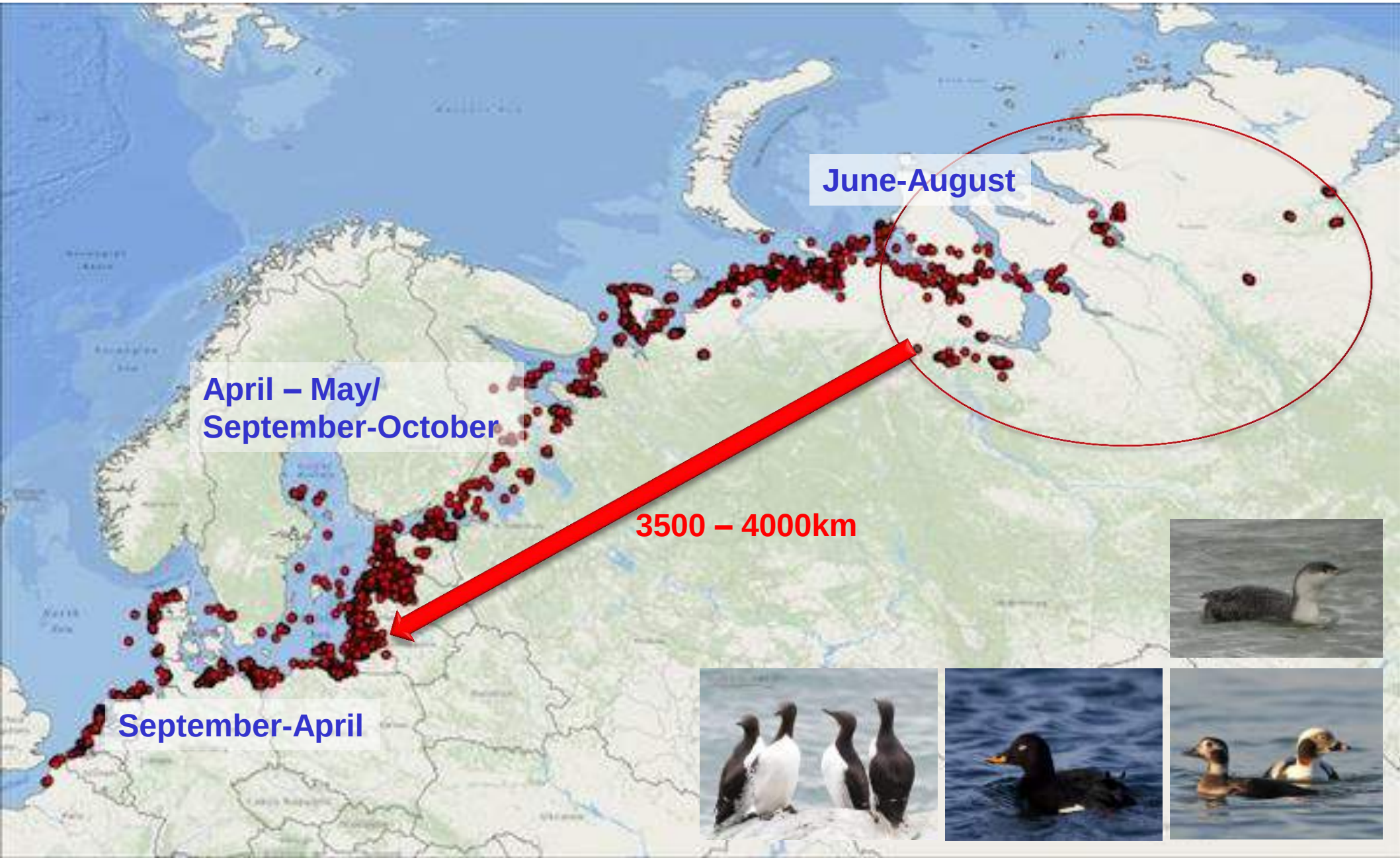
Sea ducks bycatch mitigation trails in Lithuania

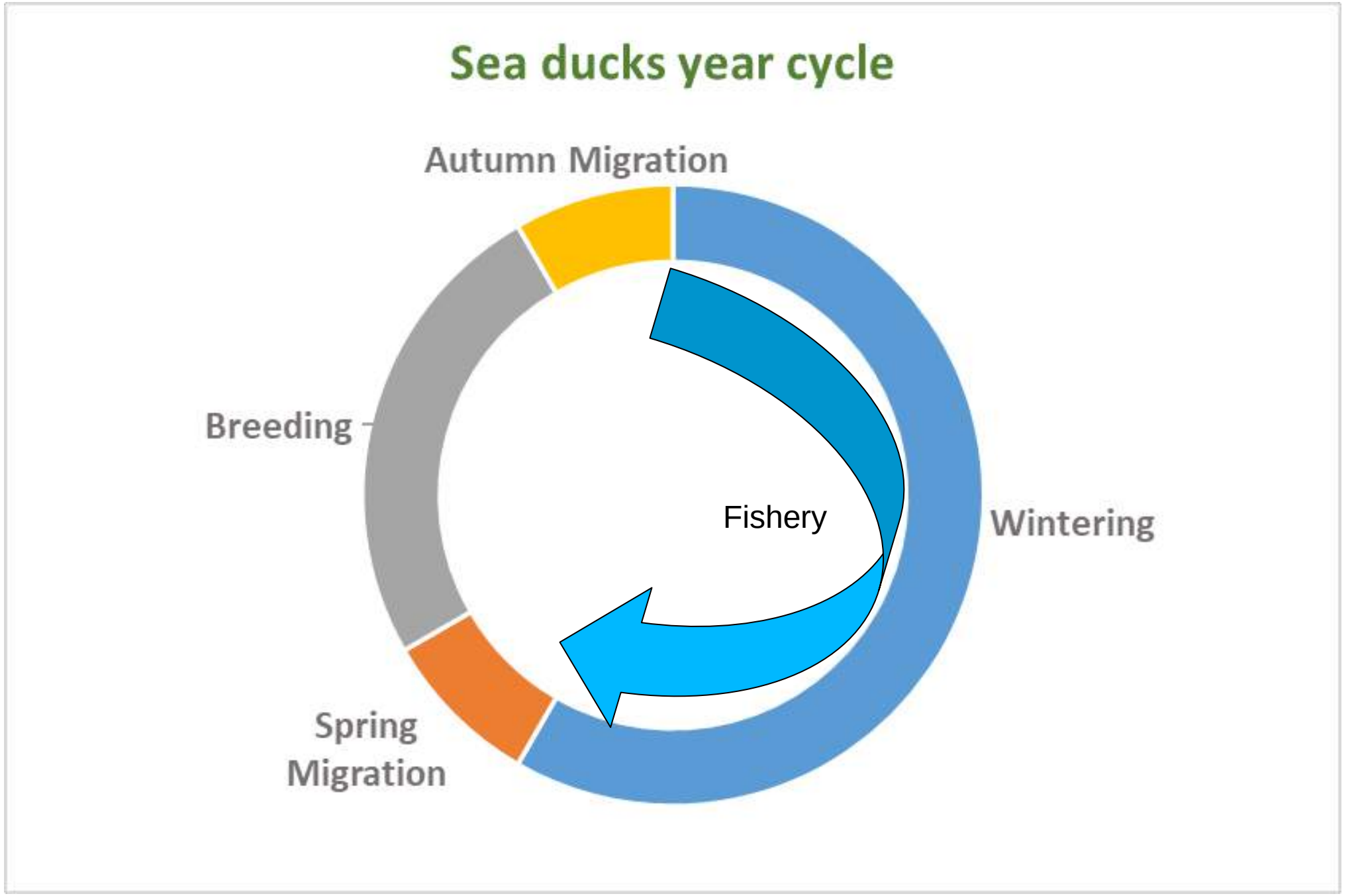
Marine Task Force | Lithuanian ornithological society

Julius Morkūnas | LOD


Baltic sea
Lithuania
90km
Laukžemė
Salantai
Darbėnai
Žibininkai
Palanga
Kretinga
Klaipėda
Gargždai
Priekulė
Vilkyčiai
Švencelė
Kuršių Nerijos nacionalinis parkas
Kuršių marių biosferos poligonas
Venta
Šilutė
Nida
Rusnė
Velviržėn
A13
A1
218
220
E272
168
216
227
141
167
165

Sea birds, where is the home of them?




Sea ducks year cycle
Autumn Migration
Breeding
Fishery
Wintering
Spring
Migration

Why Baltic Sea?







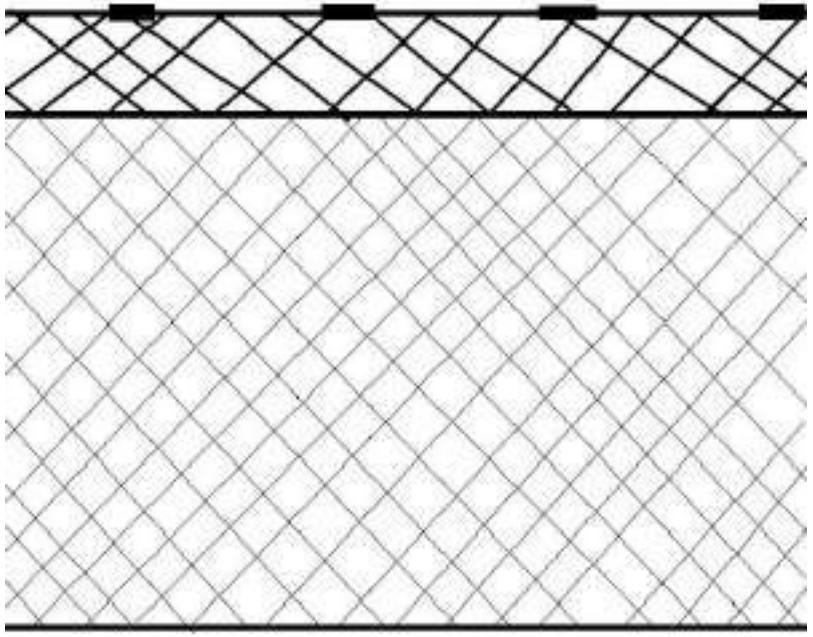




TP-854

What have been done in Lithuanian Baltic sea?

Net modifications

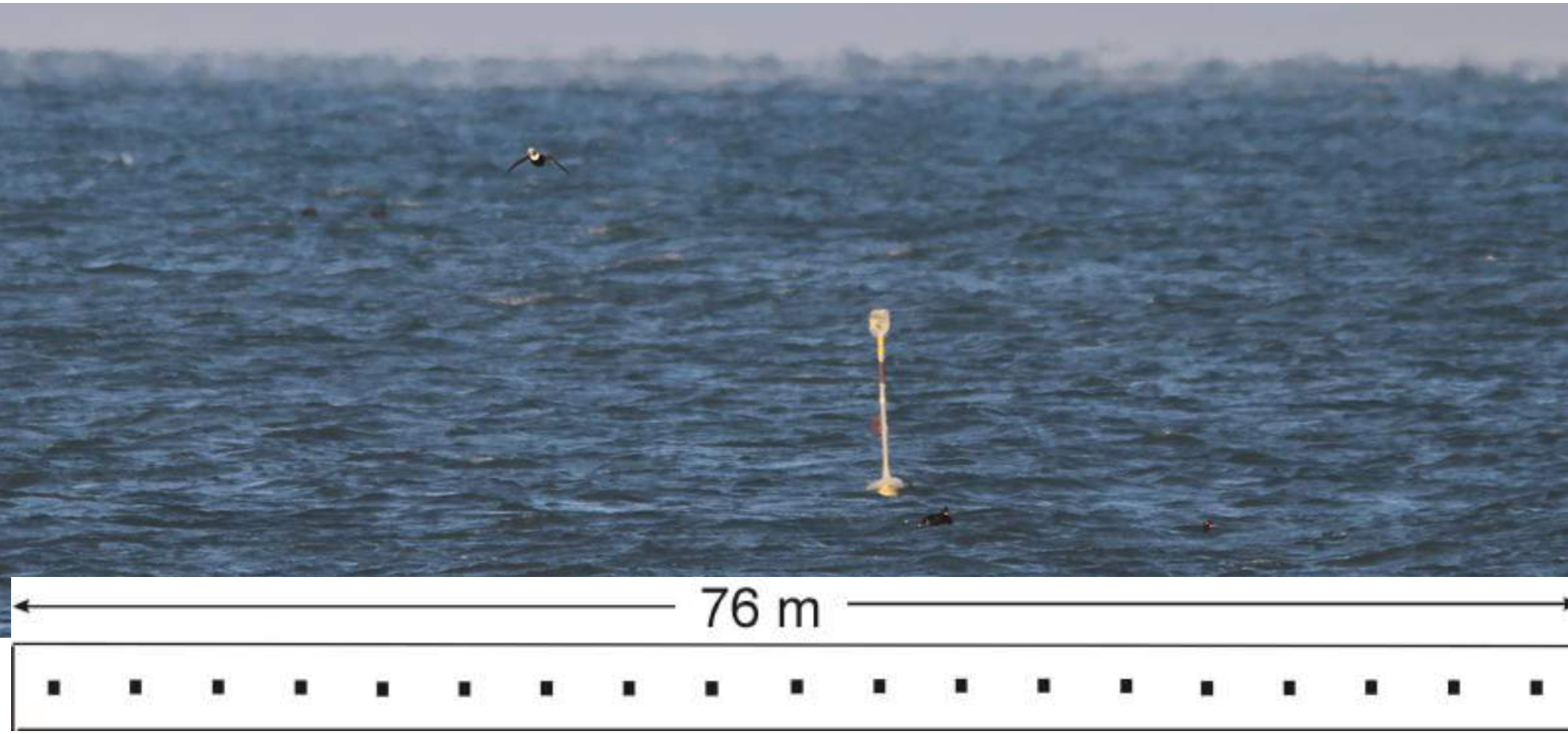


Baltic sea, Lithuania

Segre fundation 2015-2017

- Work with:
  - Fisherman, fisherman asociations
  - Authorities, decision makers, politics
  - Net makers
  - Experimental trails, two seazons
  - Work with media
  - Workshops with fisherman and authorities
  - Reports
  - Data of fish catch and bird bycatch collected and analyzed

Panels


76 m

- In winter 2014/2015, two inshore fishermen tried 36 modified gill nets with high visibility top panels (50-55mm)
- In winter 2015/2016, ten inshore fishermen started fishing cod with 87 modified nets, covering almost all of the Lithuanian coastal zone.

Results

Species recorded as bycatch from experimental nets:

Long-tailed Duck 48

Velvet Scoter 23

Common Scoter 6

Great crested Grebe 3

Red-throated diver 2

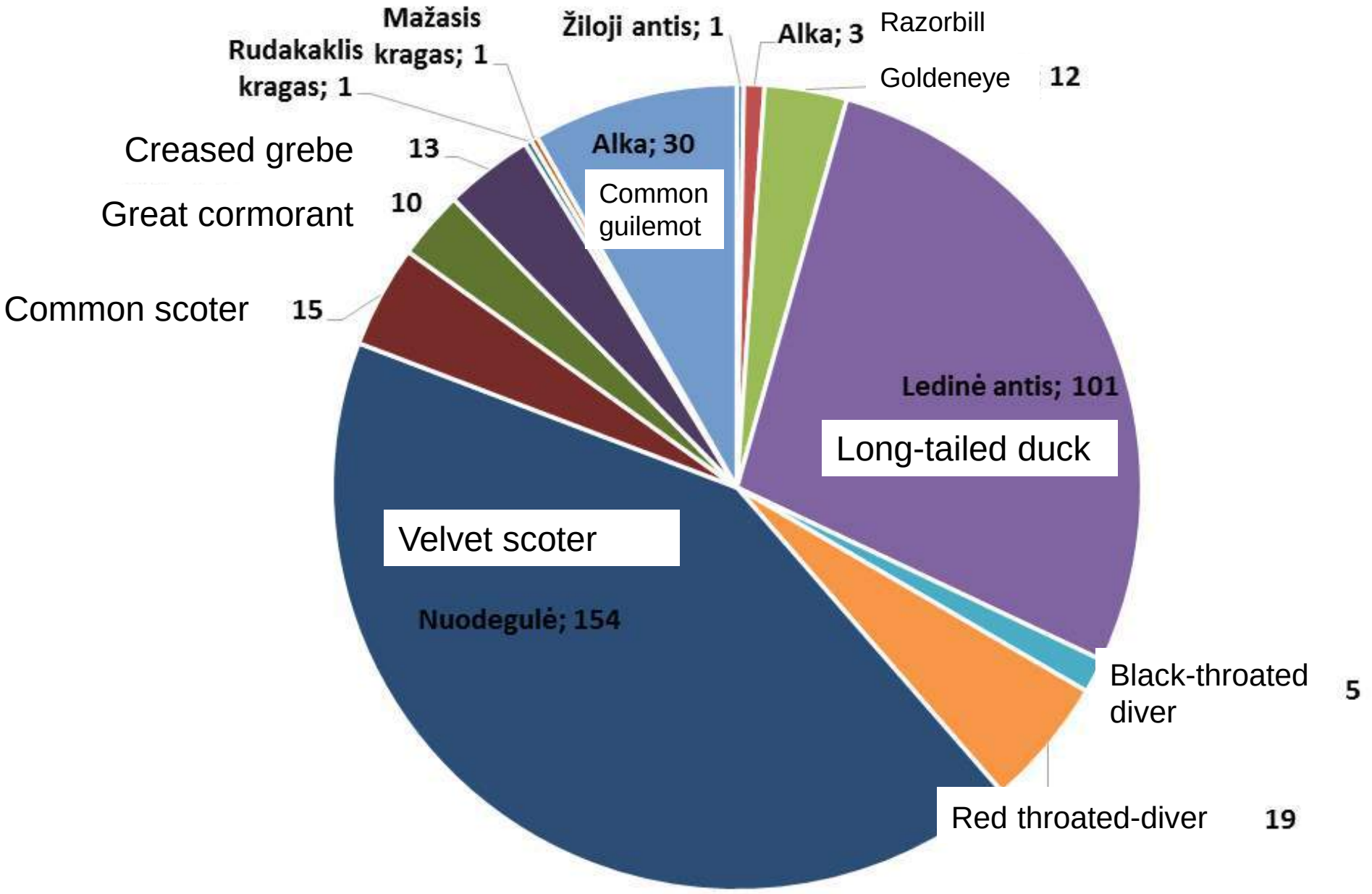
Arctic diver 2

Common guillemot 1

Estimated:

1000-1500 birds per season are drowning in gillnets each winter. This is ~10-15% of wintering population of sea birds in Lithuania.

2015/2016/2017 žiemomis iš žvejų surinkti žuvę paukščiai



Results

Estimated:

1000-1500 birds per season are drowning in gillnets each winter. This is ~10-15% of wintering population of sea birds in Lithuania.

For the small-scale (<8m length vessels) fleet, bycatch rates in Cod gillnets were on average higher than in Smelt nets in (**2015/16**: 1.468 sea-ducks/km Cod net day vs. 0.038 seaducks/km Smelt net day and **2016/17**: 0.254 seaducks/km Cod net day vs. 0.195 seaducks/km Smelt net day),

But there was large variability between months and species: while Long-tailed Ducks had occasionally very high bycatch rates in both Cod and Smelt fishing nets (e.g. Jan 2016 in Cod, Nov 2016 in Smelt) Scoters were only rarely caught in Smelt fishing nets.

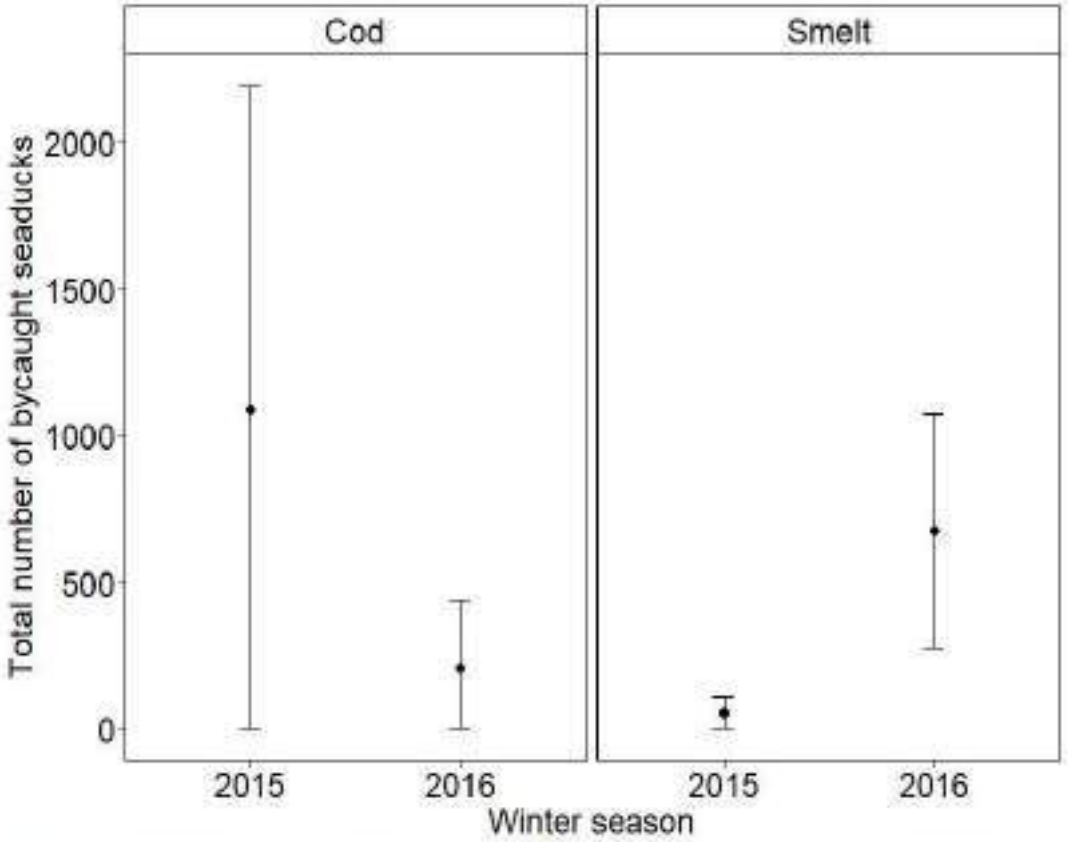


Figure 7. Estimated total bycatch (mean ±95% confidence interval) of all seaduck species across the Lithuanian Cod and Smelt gillnet fisheries in two winters based on a generalised linear model parameterised with observed bycatch data (Table 2) and extrapolated to the total fishing effort in Lithuania for each winter and fishery.

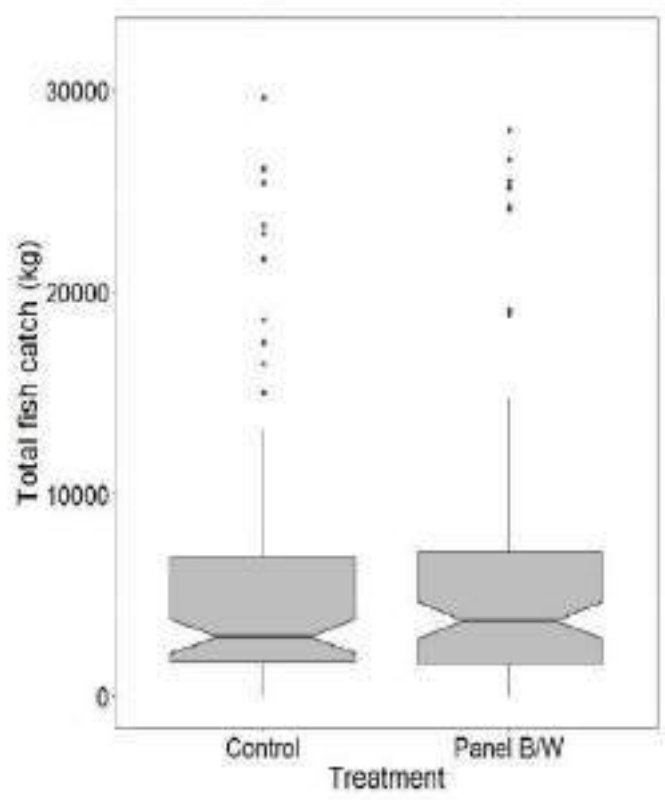
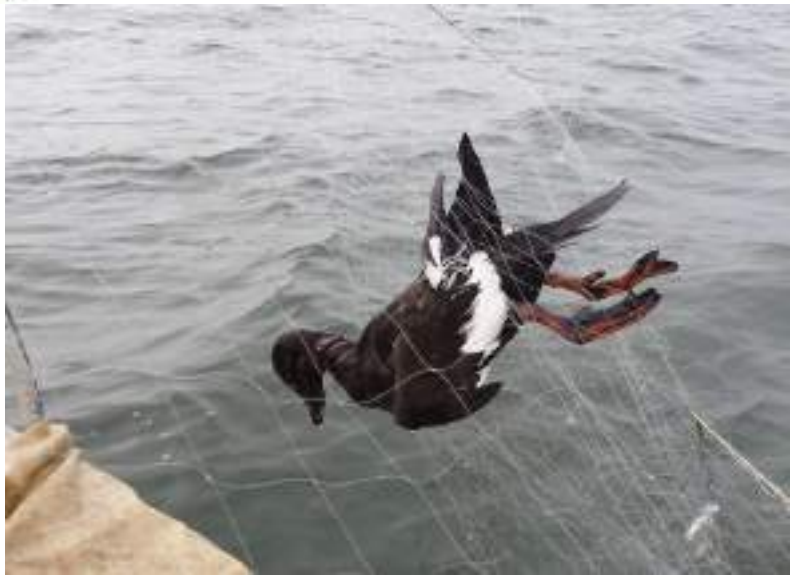


Figure 8. Total fish catch in control and experimental nets in 2015/16. Horizontal lines are the median, boxes the interquartile range, error bars the 95% CI, and dots are final outliers.

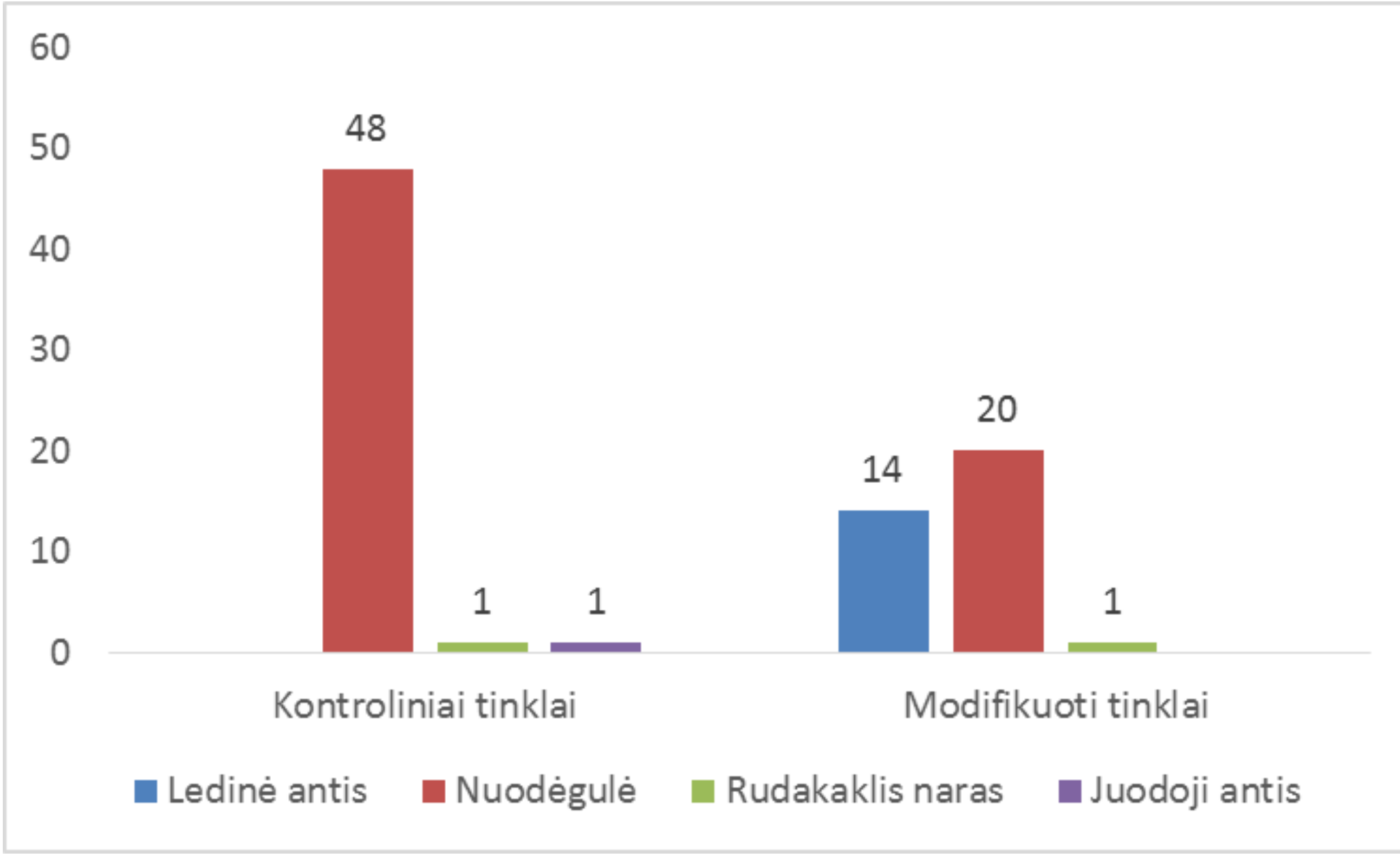


Results

In total, 40 birds were caught (again, predominantly Velvet Scoter and Long-tailed Duck) - 20 in experimental nets and 20 in control nets.

Overall, the probability of bycatch occurring was 0.150 $\pm$ 0.034, and the intensity of bycatch (bird/km net day) was 0.024 $\pm$ 0.002.

Modified panel nets



LOD

FONDATION SEGRÉ

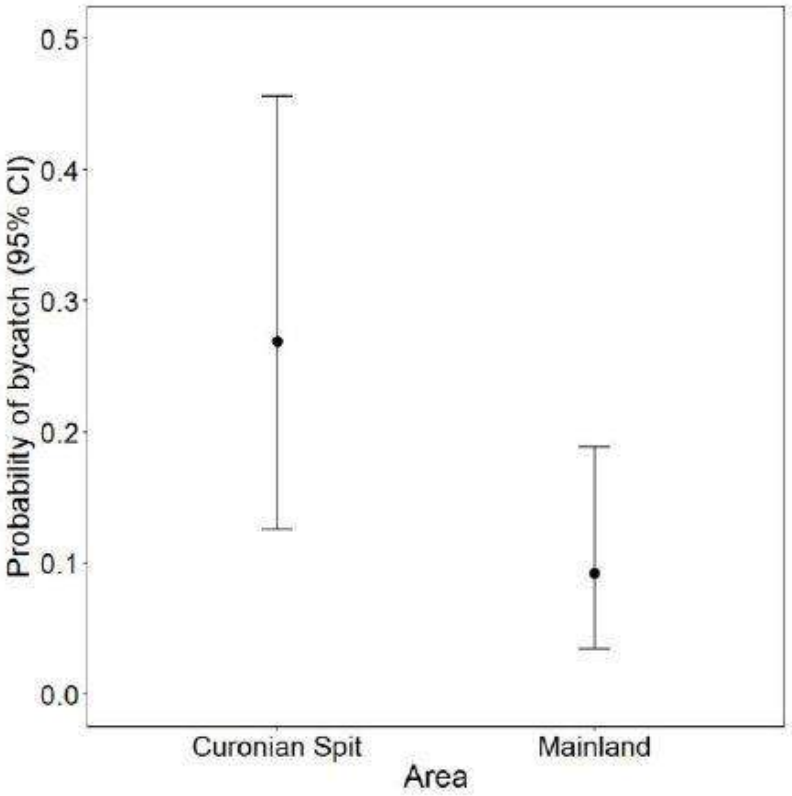
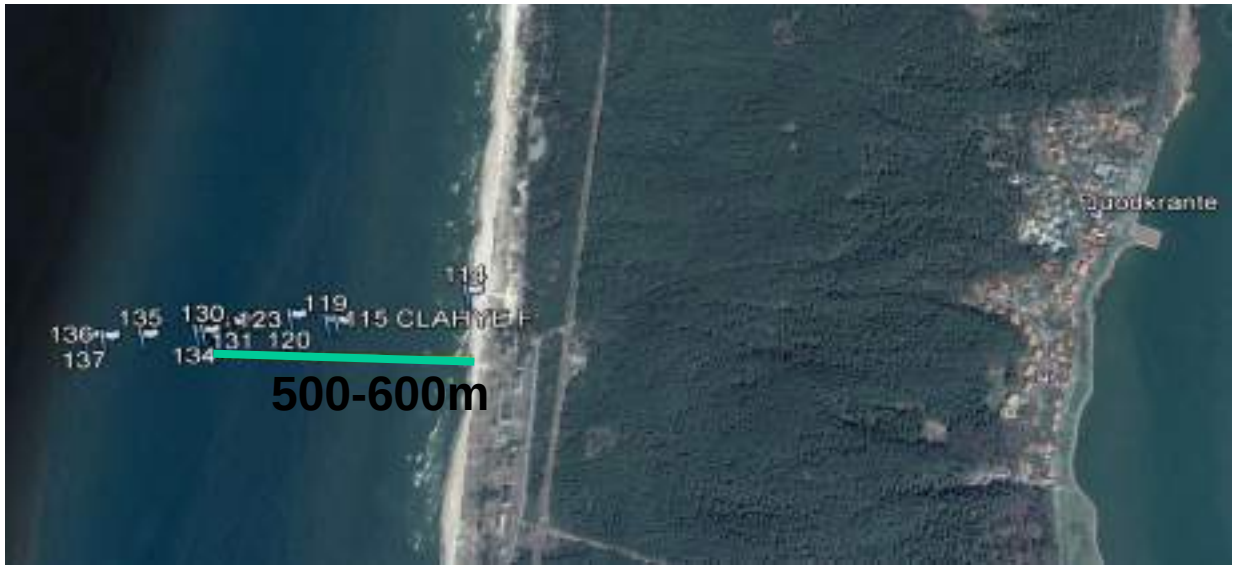


Figure 9. Probability of bycatch occurring by broad area (Curonian Spit or Mainland Lithuania)



Now

BirdLife INTERNATIONAL | Partnership for nature and people

LOD

rspb giving nature a home

baltcf

Foundation Funding Projects Other languages Contact

Untangling the net: tackling bird bycatch in Baltic gillnet fisheries

Bycatch of seabirds in gillnet fisheries is a global conservation issue and the Baltic Sea is a hotspot, with an estimated 76,000 birds caught annually in the sea basin- including threatened species such as Velvet Scoter and Long-tailed Duck. There is currently no proven, effective solutions to prevent seabirds from being caught in gillnets. This project aims to understand the bycatch problem in Lithuania further, develop and test experimental methods to reduce the bycatch of birds in nets, and raise awareness to decision makers on the need to manage this problem.

Situation and background

Gillnet bycatch is estimated to kill 400,000 seabirds globally each year, of which 76,000 are thought to be killed in Baltic gillnet fisheries annually. Research indicates that it is a substantial issue in Lithuanian coastal waters and the Curonian Lagoon, where internationally important numbers of wintering seaducks, loons and grebes overlap with gillnet fishing operations. This toll includes the capture of internationally threatened species, including Velvet Scoter and Long-tailed Duck.

According to a recent review, diving seabirds are unable to perceive the fine nylon mesh of gillnets, which is essentially invisible under water. Alerting birds to the presence of nets, and further 'scaring' them from coming too close, is likely to be the key means of preventing entanglements, and ultimately, drowning.

Beneficiary

BirdLife International

Partners

- Lithuanian Ornithological Society
- Royal Society for the Protection of Birds

Project region

St. Petersburg area (Lujski) and Lomonosovski) rural districts on the southern shore of the Gulf of Finland)

Project duration

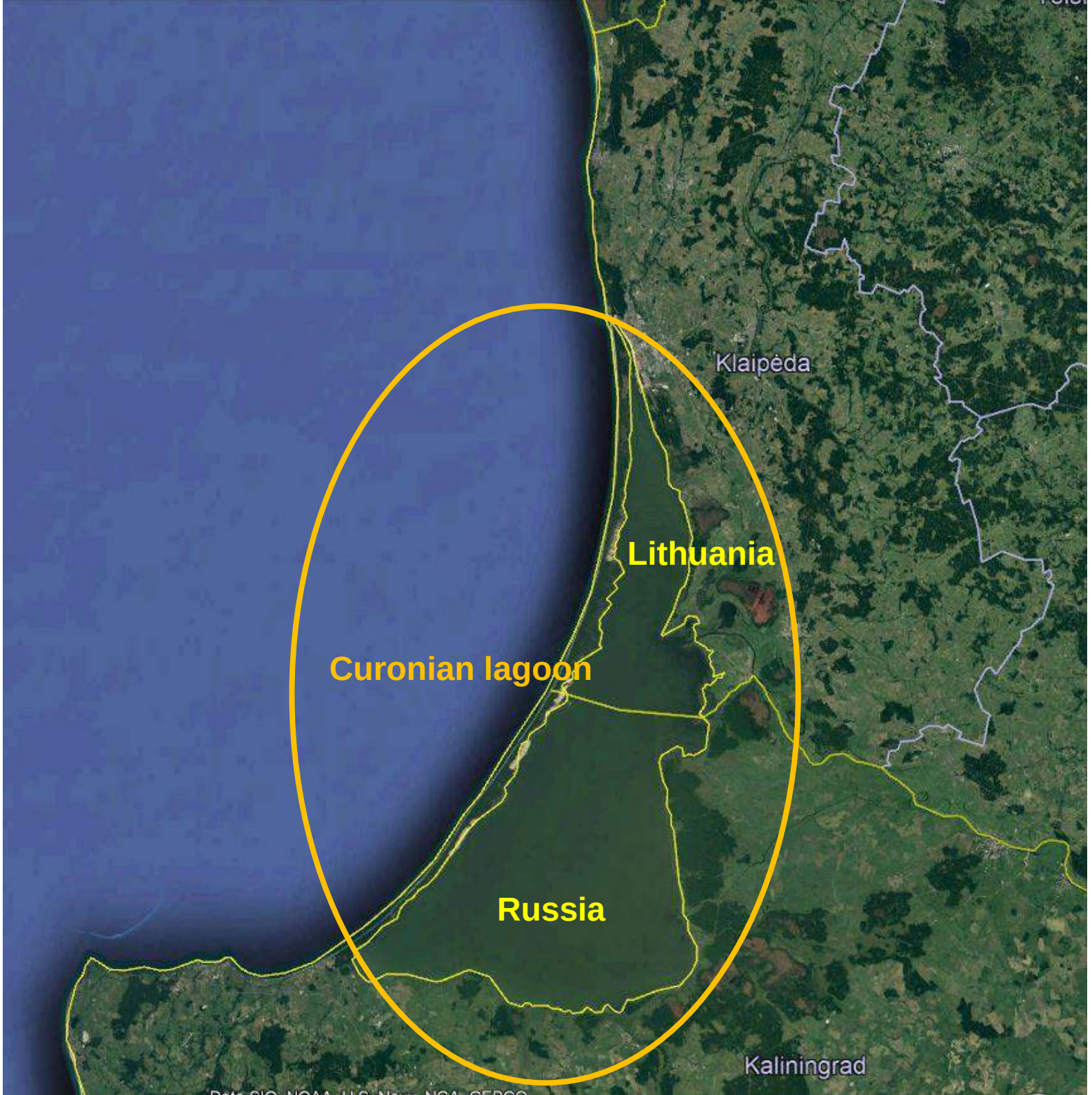
2017-07-01 – 2020-10-31

Budget

Develop a technical mitigation measure and test on Lithuanian Baltic Sea gillnet vessels.

Assess the scale of the bycatch problem across the Curonian Lagoon (Lithuanian and Russian parts) for the first time.

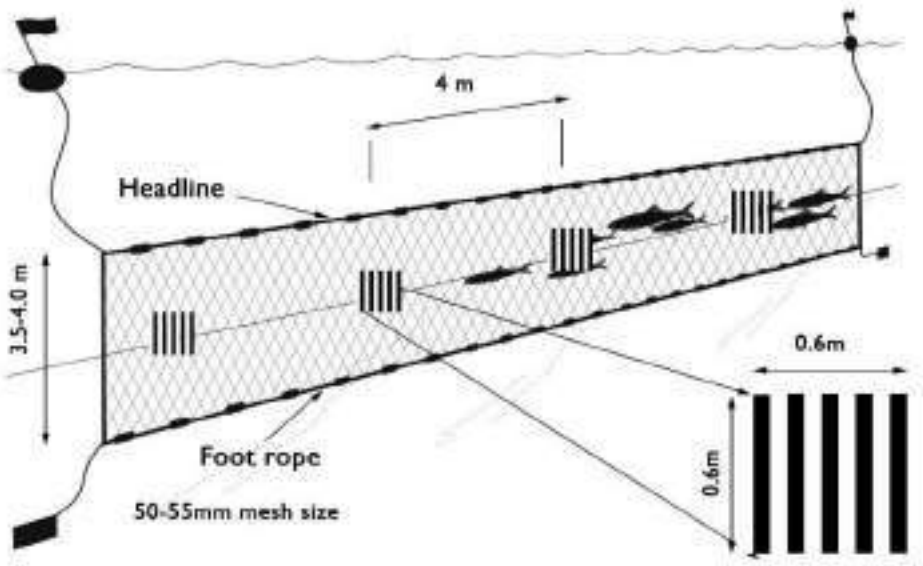
Strengthen bycatch measures in Lithuanian (and wider Baltic) fisheries management


Klaipėda
Lithuania
Curonian lagoon
Russia
Kaliningrad

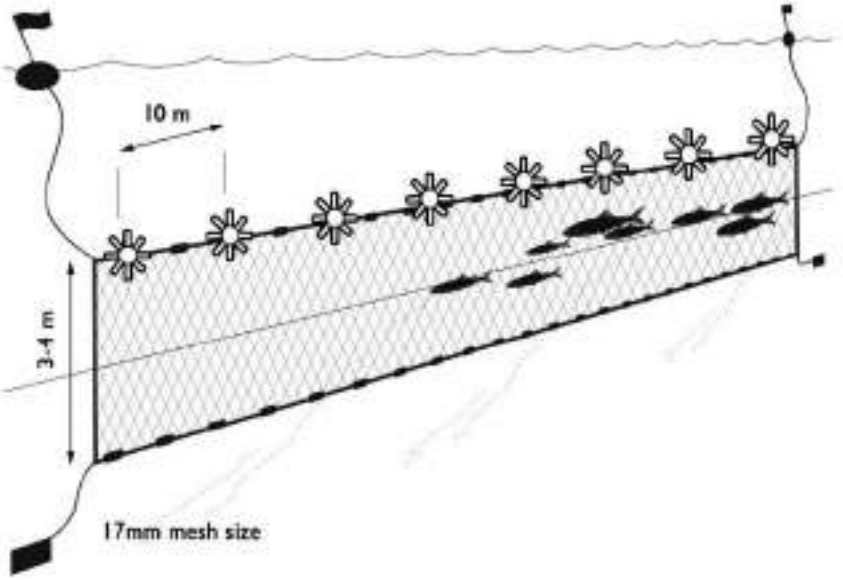
Experimental trails in smelt fishery using white flashing LED lights. Working with 4 fisherman in Baltic sea

Bycatch data from Curonian lagoon (LT part) and (RU part)

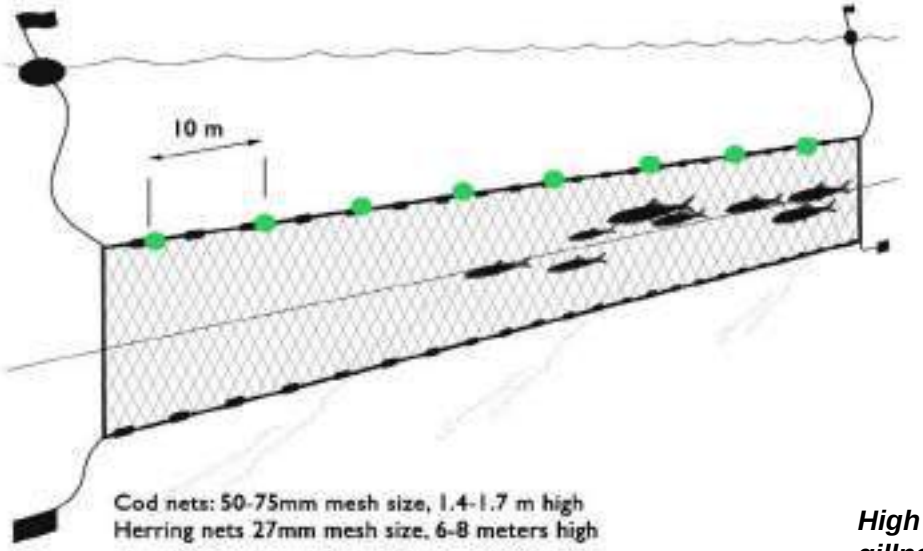
Experiment 1: High contrast net panels



Experiment 3: Flashing white net lights



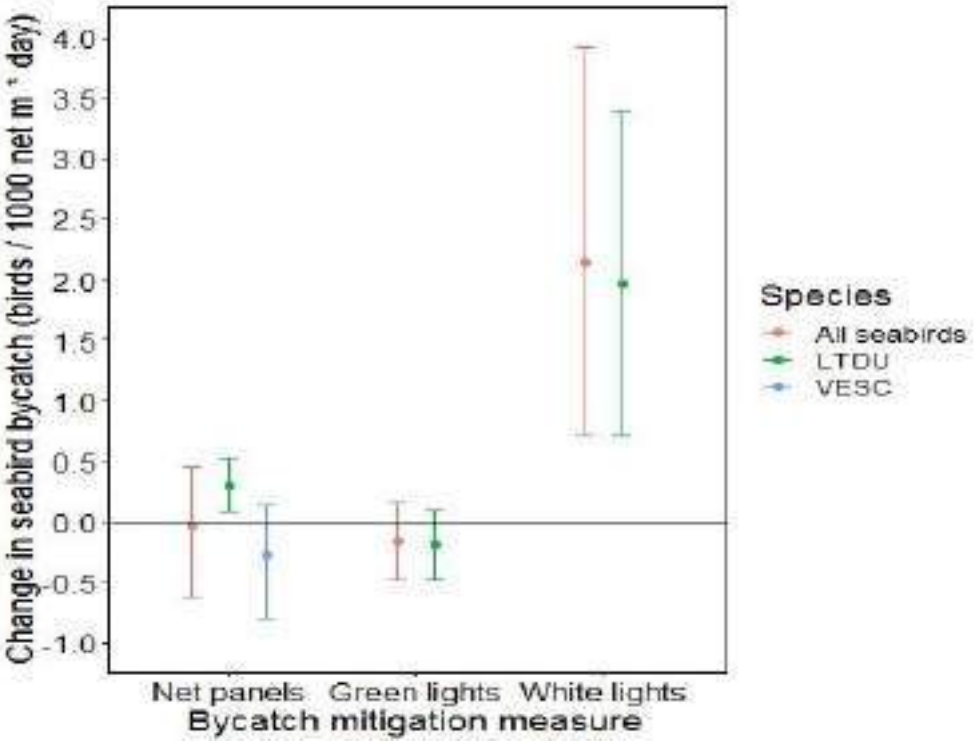
Experiment 2: Constant green net lights

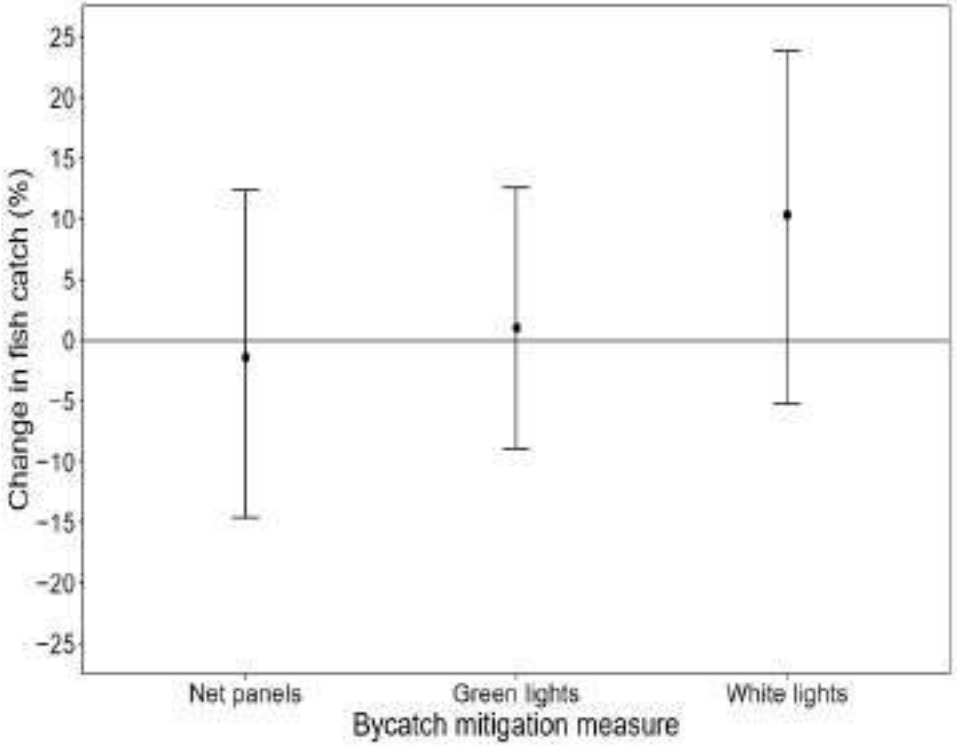


High contrast panels and lights do not reduce seabird bycatch in Baltic Sea gillnet fisheries

Rob Field[a], Rory Crawford[b], Tomasz Linkowski[c], Graham Martin[d], Julius Morkūnas[ef], Yann Rouxel[b], Robert Enever[f], Rasa Morkūnė[f], Steffen Oppel

Birds bycatch and fish catch all 3 mitigation mesurments





High contrast panels and lights do not reduce seabird bycatch in Baltic Sea gillnet fisheries

Rob Field[a], Rory Crawford[b], Tomasz Linkowski[c], Graham Martin[d], Julius Morkūnas[ef], Yann Rouxel[b], Robert Enever[f], Rasa Morkūnė[f], Steffen Oppel

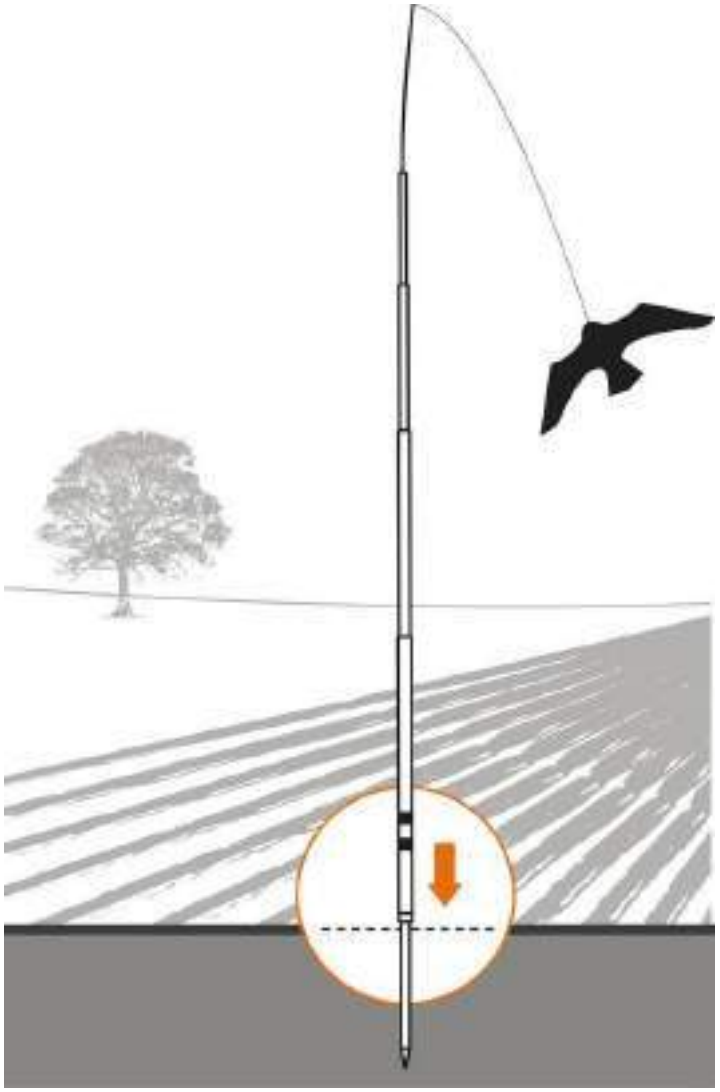
Bird bycatch summary

		Net panels			Green lights			White lights	
Species	Vernacular name	Control	Experiment		Control	Experiment		Control	Experiment
Aythya marila	Great Scaup	1	0		1	0			
Bucephala clangula	Goldeneye	1	0					0	1
Clangula hyemalis	Long-tailed Duck	3	23		43	29		8	30
Gavia arctica	Black-throated Loon				2	2			
Gavia stellata	Red-throated Loon	4	2		2	1			
Larus argentatus	Herring Gull	1	0						
Melanitta fusca	Velvet Scoter	62	28		2	3		1	1
Melanitta nigra	Common Scoter	2	0		1	4		4	3
Mergus merganser	Goosander							0	2
Phalacrocorax carbo	Great Cormorant				1	0			
Podiceps cristatus	Great Crested Grebe	0	1		2	2			
Uria aalge	Common Guillemot				1	2			
TOTAL		**74**	**56**		**55**	**43**		**13**	**37**

High contrast panels and lights do not reduce seabird bycatch in Baltic Sea gillnet fisheries

Rob Field[a], Rory Crawford[b], Tomasz Linkowski[c], Graham Martin[d], Julius Morkūnas[ef], Yann Rouxel[b], Robert Enever[f], Rasa Morkūnė[f], Steffen Oppel

Submitted EMFF funds project from LOD, to test on sea mitigation measurements (scarybird kites and night setting)



FISHTEK MARINE

technology that works for fishermen and the environment

FISHTEK MARINE

Initiated to tackle marine fisheries issues

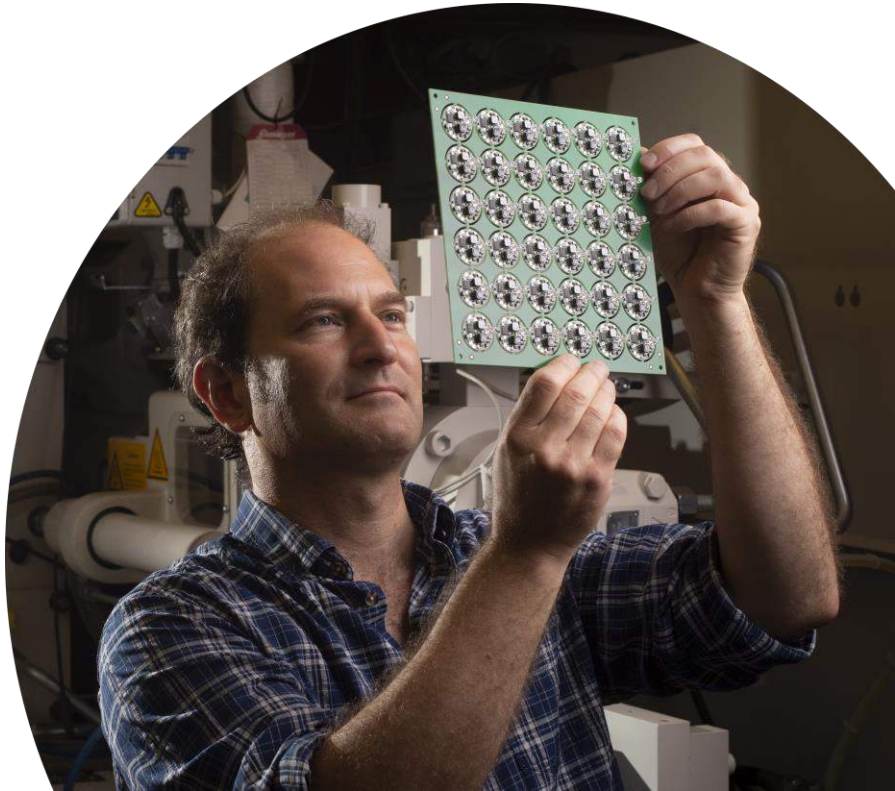
Bycatch, Marine Plastics, Depredation, Overfishing

Smart Fishing offers huge opportunities for Marine conservation

Fishtek's principles of Product Design

"A VERY difficult set of criteria to meet……."

- To deliver a product that delivers an environmental outcome
- Tough
- Durable
- Low cost
- No impact
  - Target catch
  - Or operationally
- Ideally, offers the fishers an economic advantage




Ropeless Fishing
FISHTEK MARINE


ProwGlow
FISHTEK MARINE


Pingers
FISHTEK MARINE


NetLight
FISHTEK MARINE


SharkGuard MKII
FISHTEK MARINE

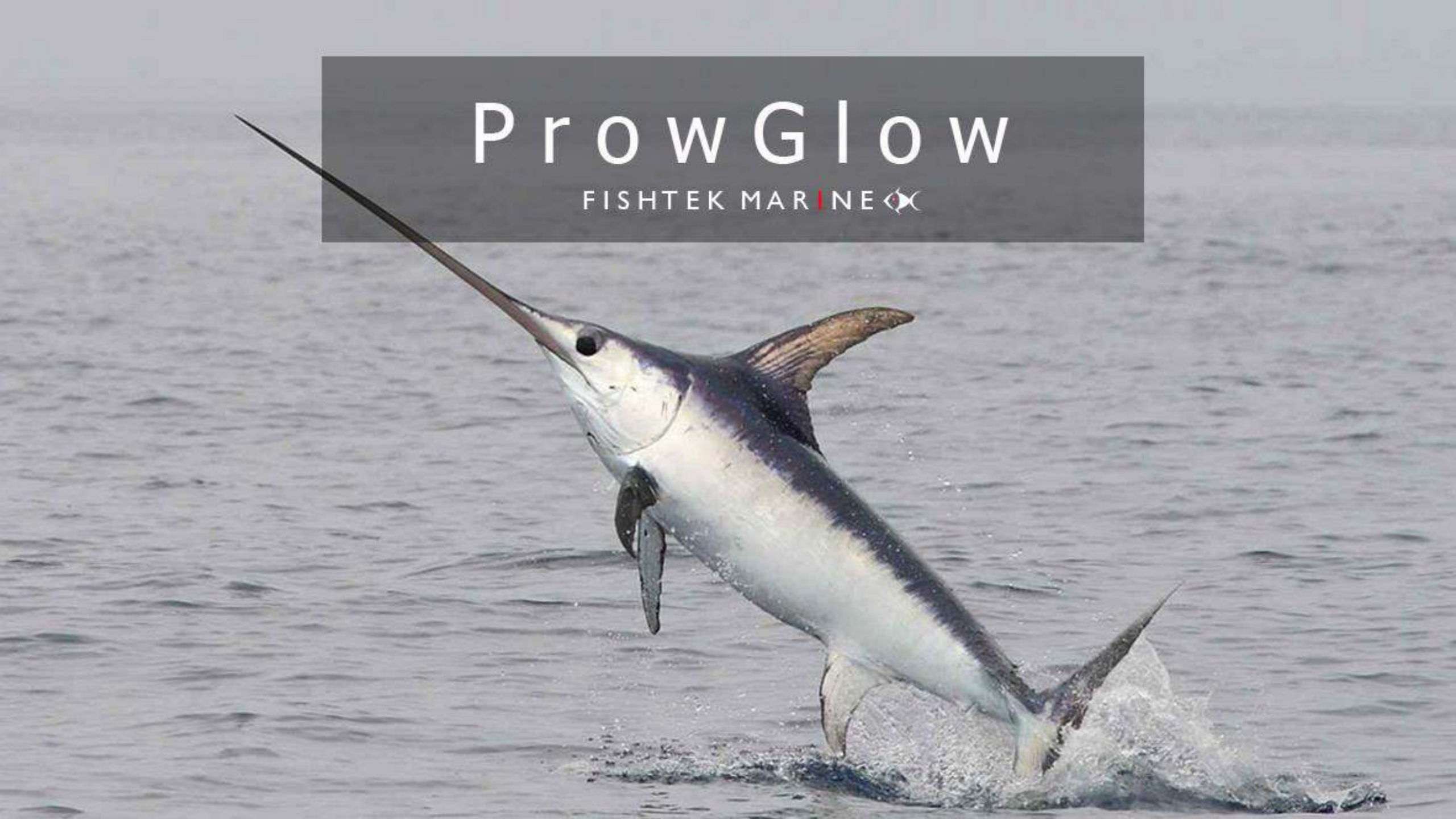

HookPod
FISHTEK MARINE


LumoLead
FISHTEK MARINE


Orca Guard

ProwGlow

FISHTEK MARINE



The problem

FISHTEK MARINE

- ~700,000,000 chemical lights stick used annually (7,000 tonnes of plastic)
- Used once (~12 hours)
- Discarded into the oceans
- Costly to fishers (~40K USD per vessel per year)
- Damaging to the environment

The solution

	0%	1%	2%	3%	4%
Chemical light stick	$40000,0	$40000,0	$40000,0	$40000,0	$40000,0
ProGlow	$3200,0	$9600,0	$16000,0	$22400,0	$28800,0
LED competitor	$8000,0	$24000,0	$40000,0	$56000,0	$72000,0

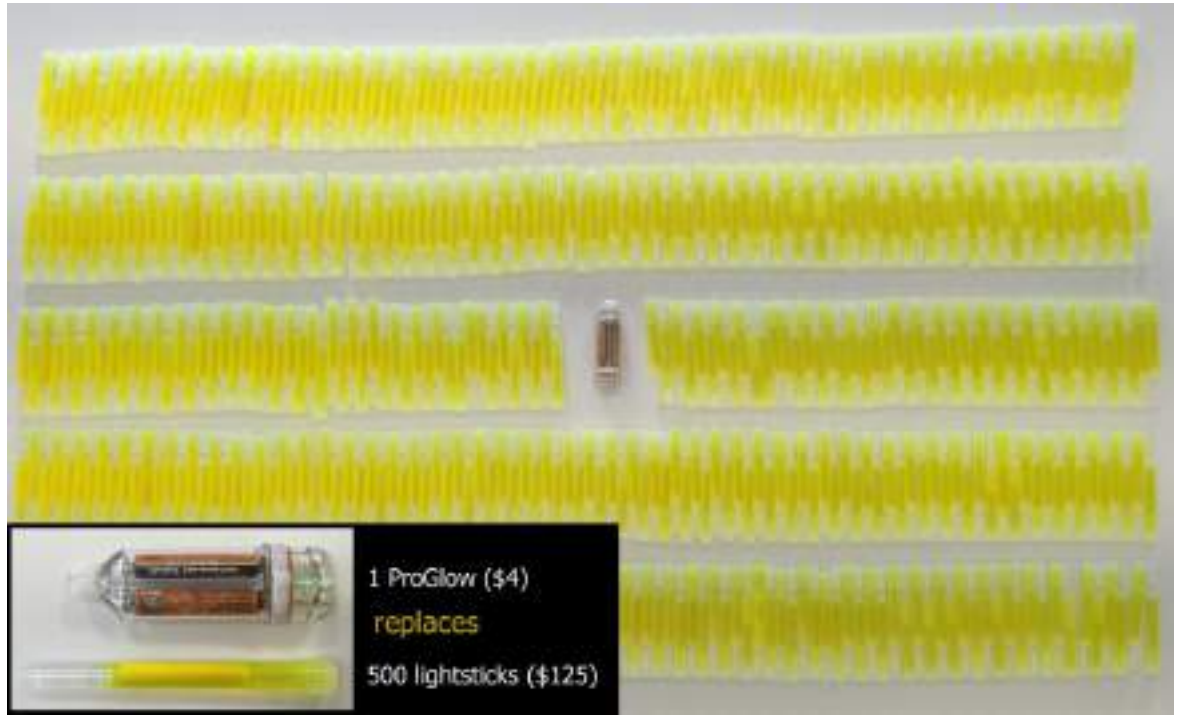
Based on 800 hooks and 200 sets per year

The outcomes

FISHTEK MARINE

- 70,000 sold in first year
- Prevented use of up to 21 million lightsticks
- Prevented up to 210 tonnes of plastic from entering the oceans
- Markets are growing
- Uptake is fisher driven

The OCEAN AWARDS 2018
WINNER
BOAT International Media



"Lots more to do to spread the word but there is now no justification for the use of chemical lightsticks anywhere in the world" – small scale or industrial


NetLight
FISHTEK MARINE

The problem

Millions

300,000+

300,000+

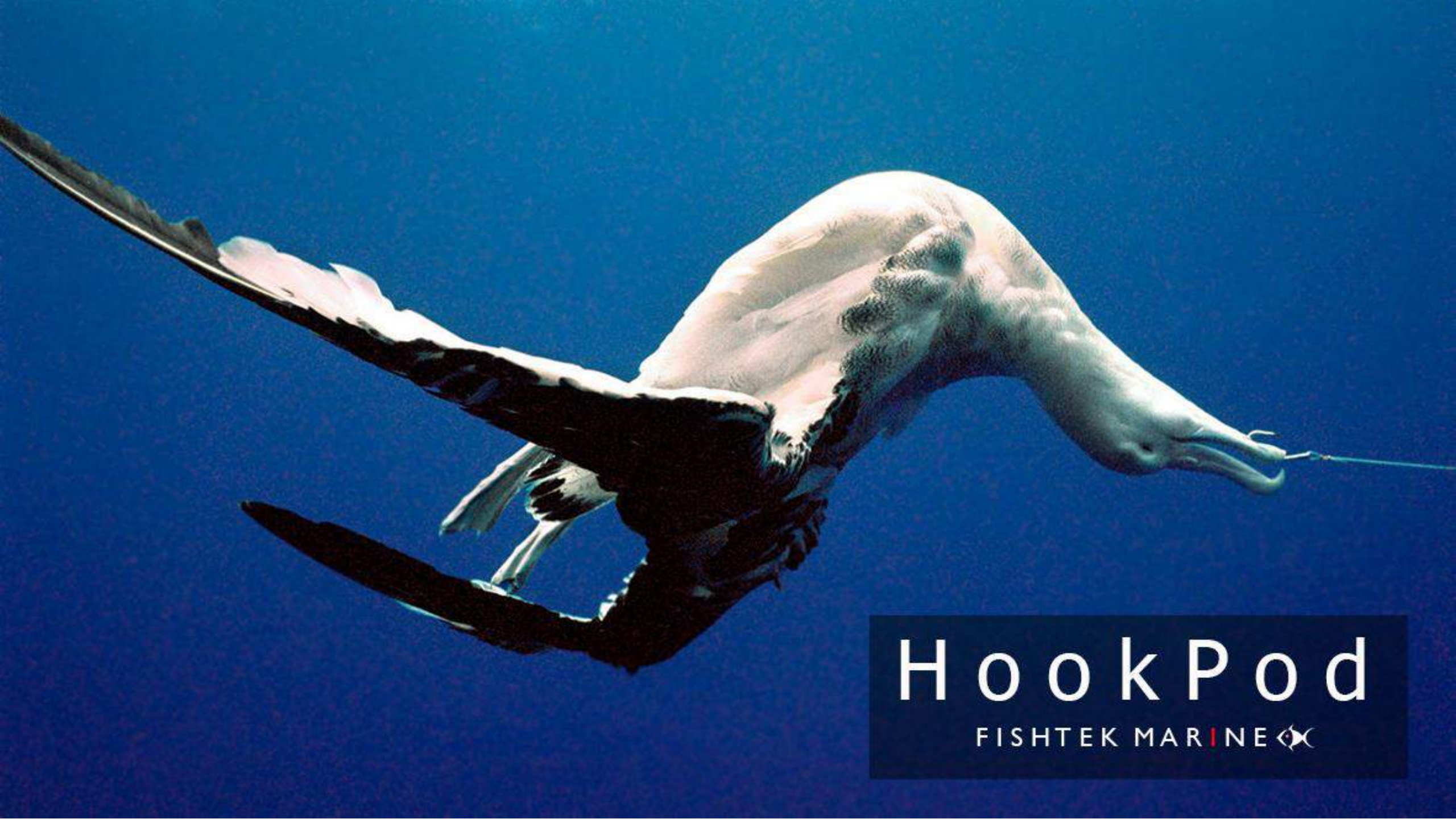
A future solution?

60-70% reduction in turtle bycatch

Very mixed results with sea birds

Evidence of decrease in marine mammal bycatch

V interesting side effects of increased catch rates


HookPod
FISHTEK MARINE

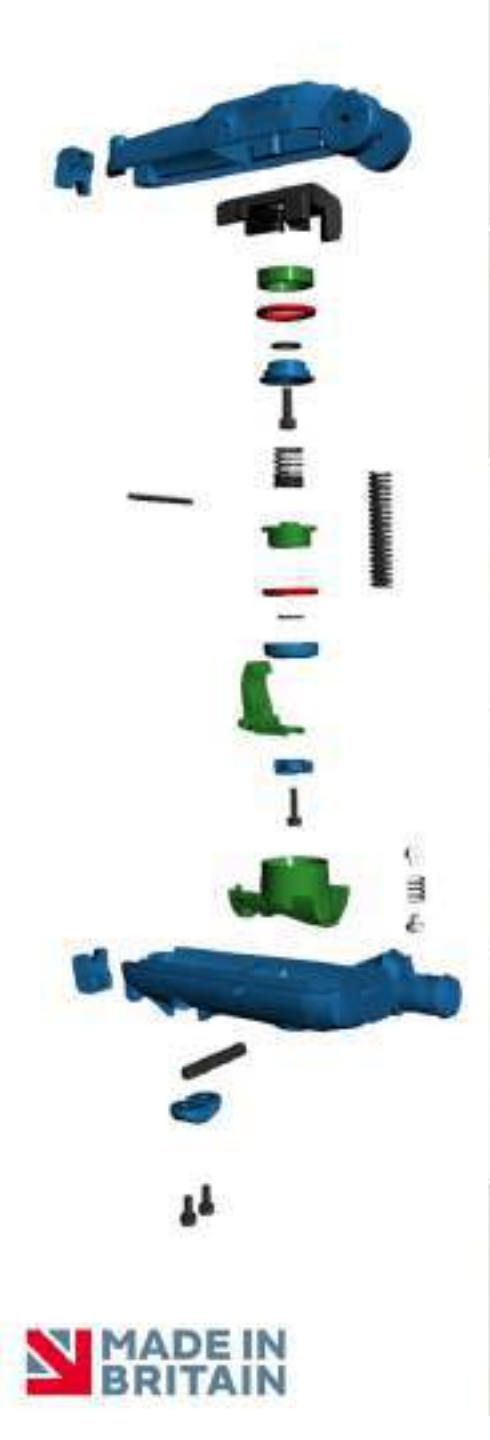
The problem

Juvenile black-browed albatrosses alongside white-chinned petrels bycauth in a pelagic longline vessel off Brazil. Photo: Fabiano Peppes

FISHTEK MARINE

The outcome

- **Approved by ACAP as best practice mitigation**
- **WCPFC approved Hookpod as first ever stand alone mitigation internationally**



The OCEAN AWARDS 2018
WINNER
BOAT

FISHTEK MARINE

technology that works for fishermen and the environment

@FishtekMarine

pete@fishtek.co.uk

DEVELOPING NOVEL MITIGATION MEASURES IN PURSE SEINE FISHERIES

Cristián G. Suazo *, Esteban Frere, Patricio Krause, Cristóbal Anguita, Luis A. Cabezas, Juan C. González-But, Patricio Ortiz Soazo & Oliver Yates

- *Albatross Task Force – Chile, BirdLife International

BirdLife INTERNATIONAL

Partnership for nature and people

Albatross Task Force - Chile

- Monitoring purse seine fleet since 2013

70 ton storage

1-2 days at sea

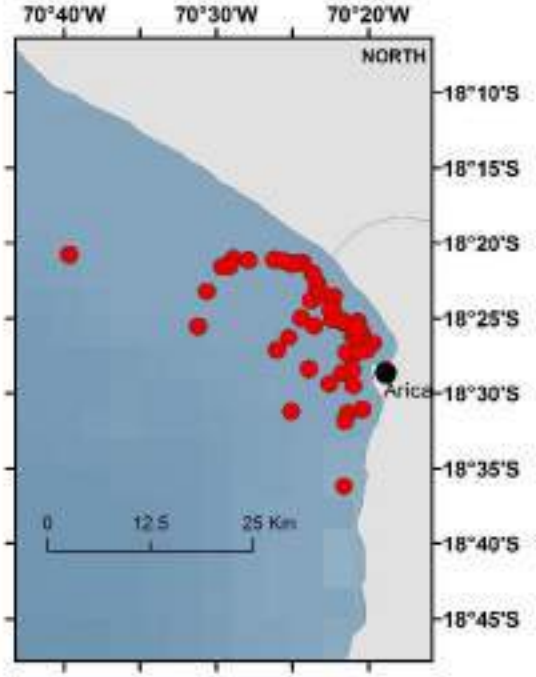
12 ton net

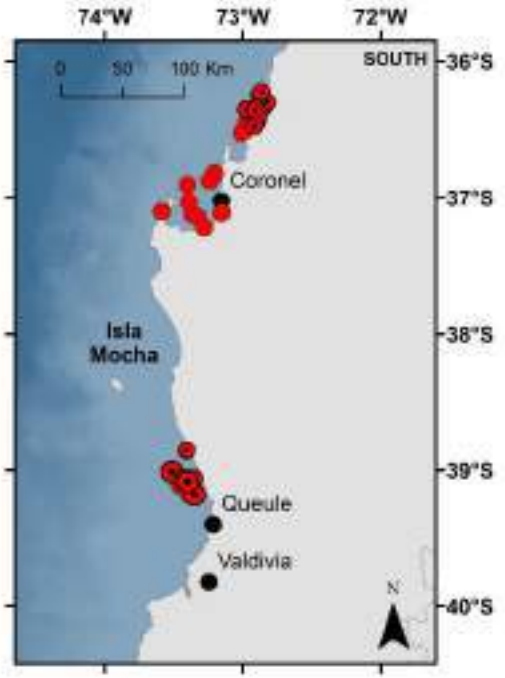
5 nautical miles

Artisanal purse seine nets

- Repaired after each season
- No regulations on net structure
- Mosaic of mesh sizes and hanging ratios

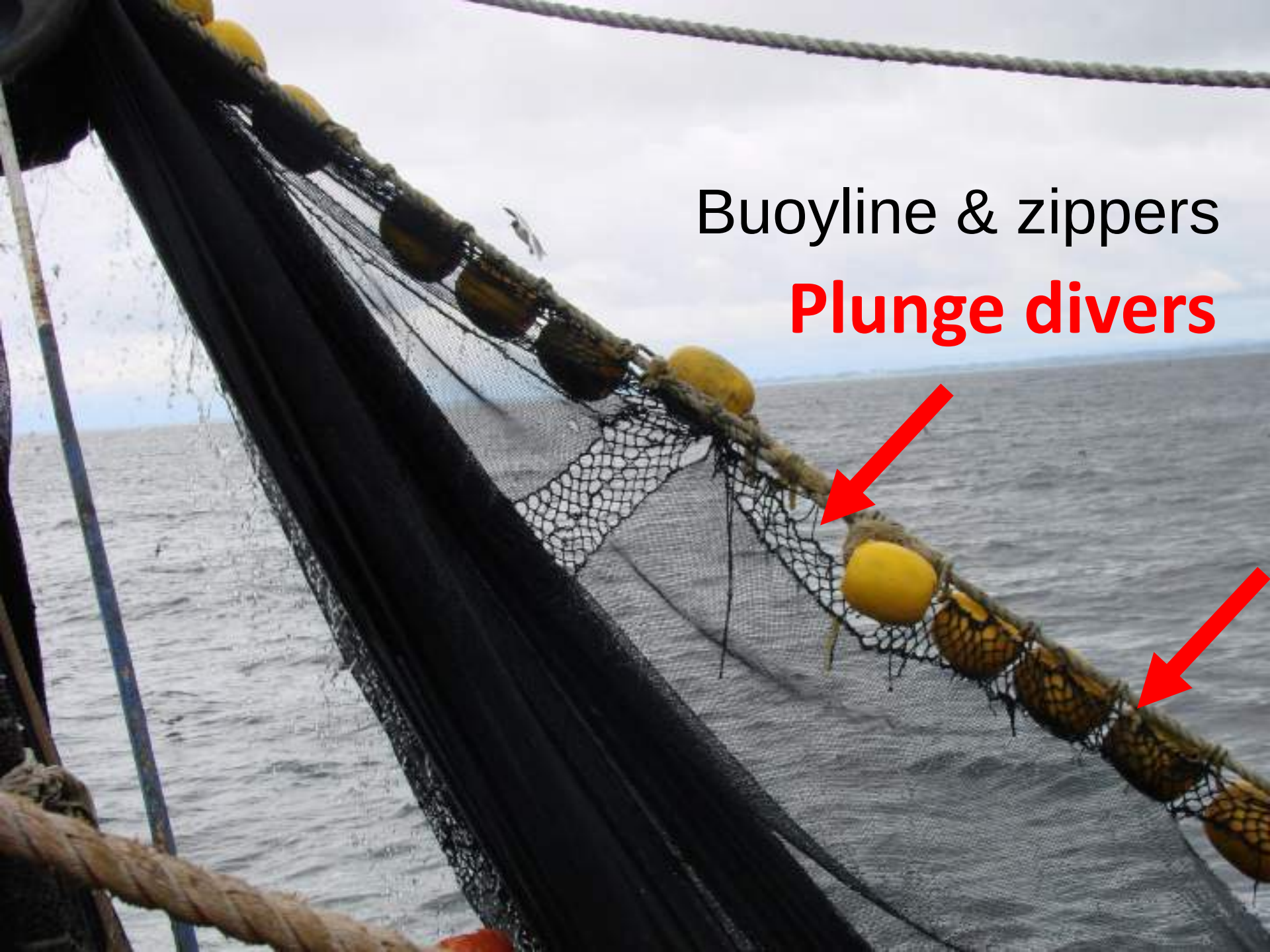
2013-2015 (~200 sets)



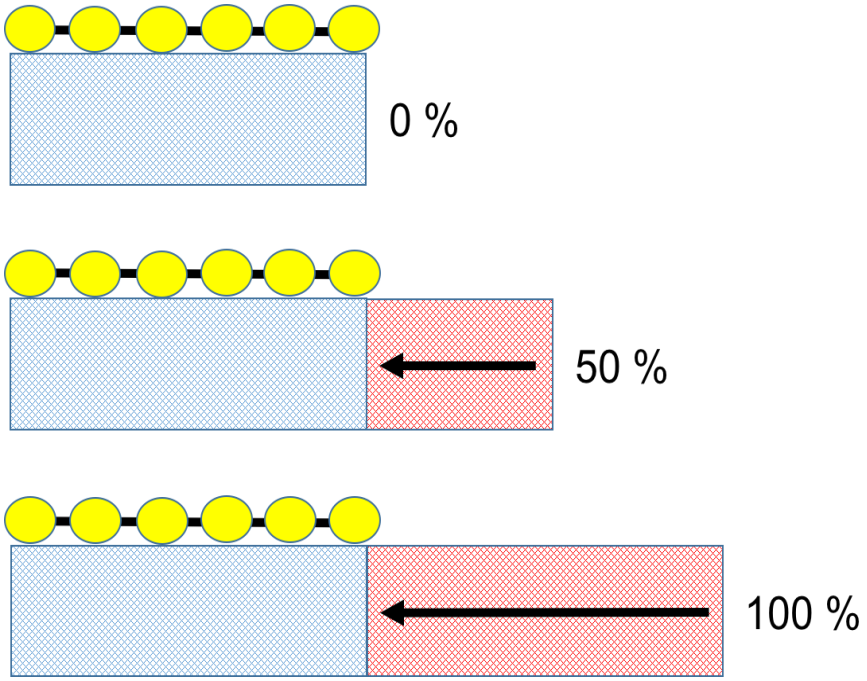


Plunge

Pursuit

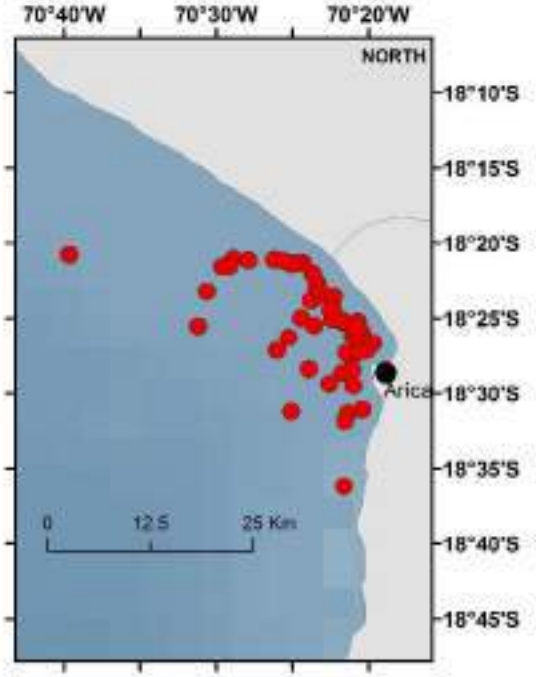

Buoyline & zippers
Plunge divers

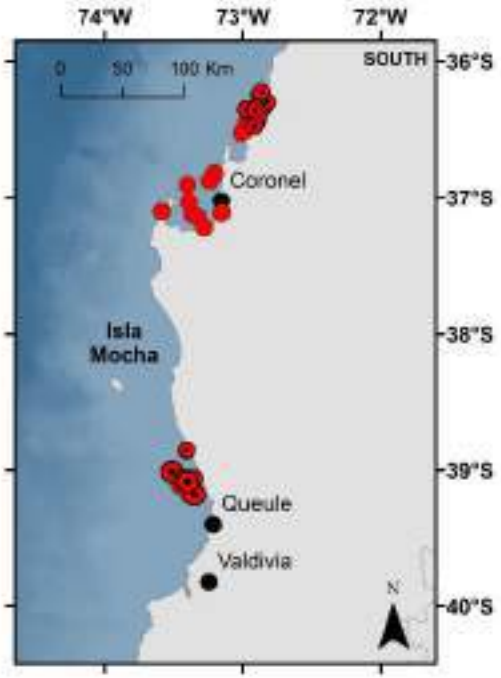
Ceiling




Especificaciones
Industrial
Semi-Industrial
Artesanal
Largo (Brazo)
450-530
150-200
20
30-40
6-7
6.9


KU-4236





Plunge

2013-2015
(~200 sets)

Pursuit


Modified Purse Seine (MPS)

Reduction of zipper mesh size and new buoyline mounting

45% to 34% (~700–800kg)

Internal mounting of buoyline

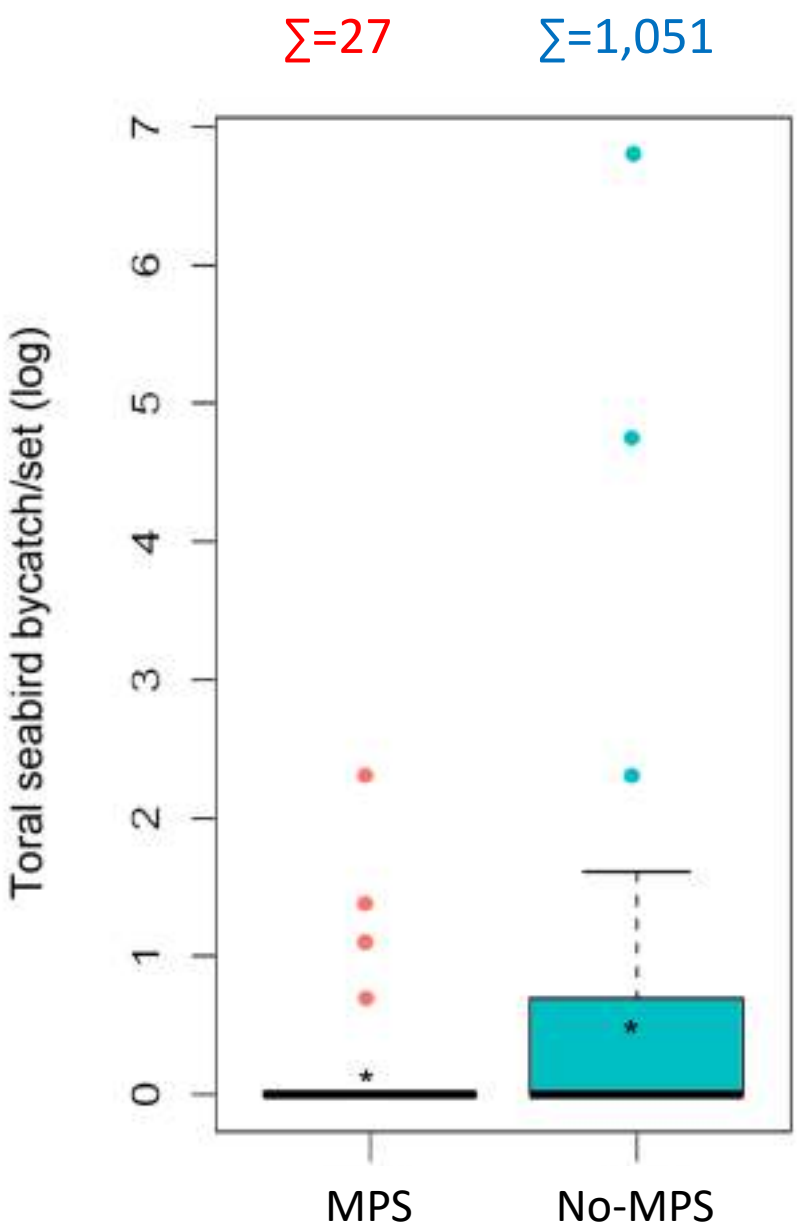

Experimental
trials MPS
versus no-MPS
(n=164)

Bycatch

No-MPS
(17.22 birds set $^{-1}$)

versus

MPS
(0.25 birds set $^{-1}$)



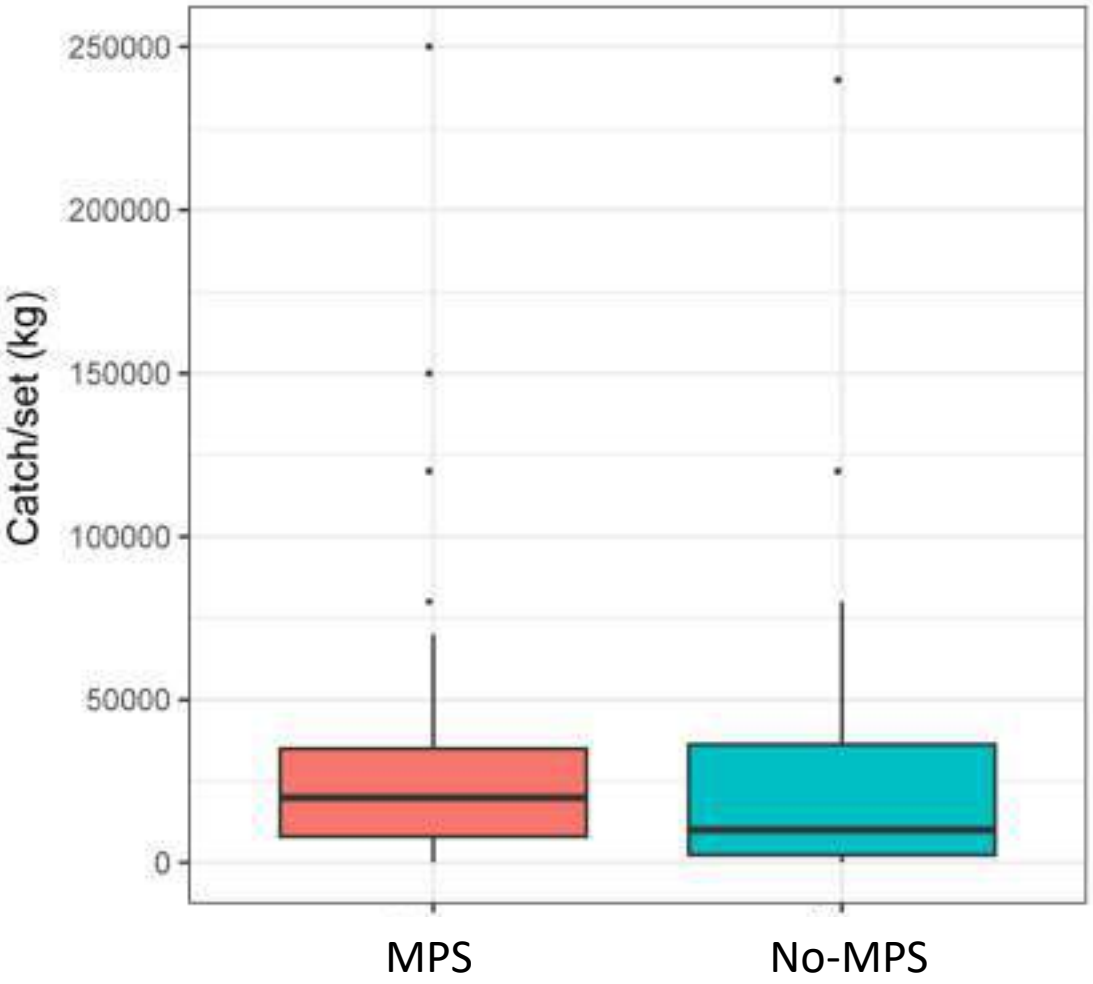
(+) Seabird abundance

(+) Upper currents

(-) Number of vessels

Pr(Chi)= 0.0027

Incentives (success)



Pr(Chi)= 0.7976

Economic incentives

Reduction of netting excess ~3,500 USD

Handling time

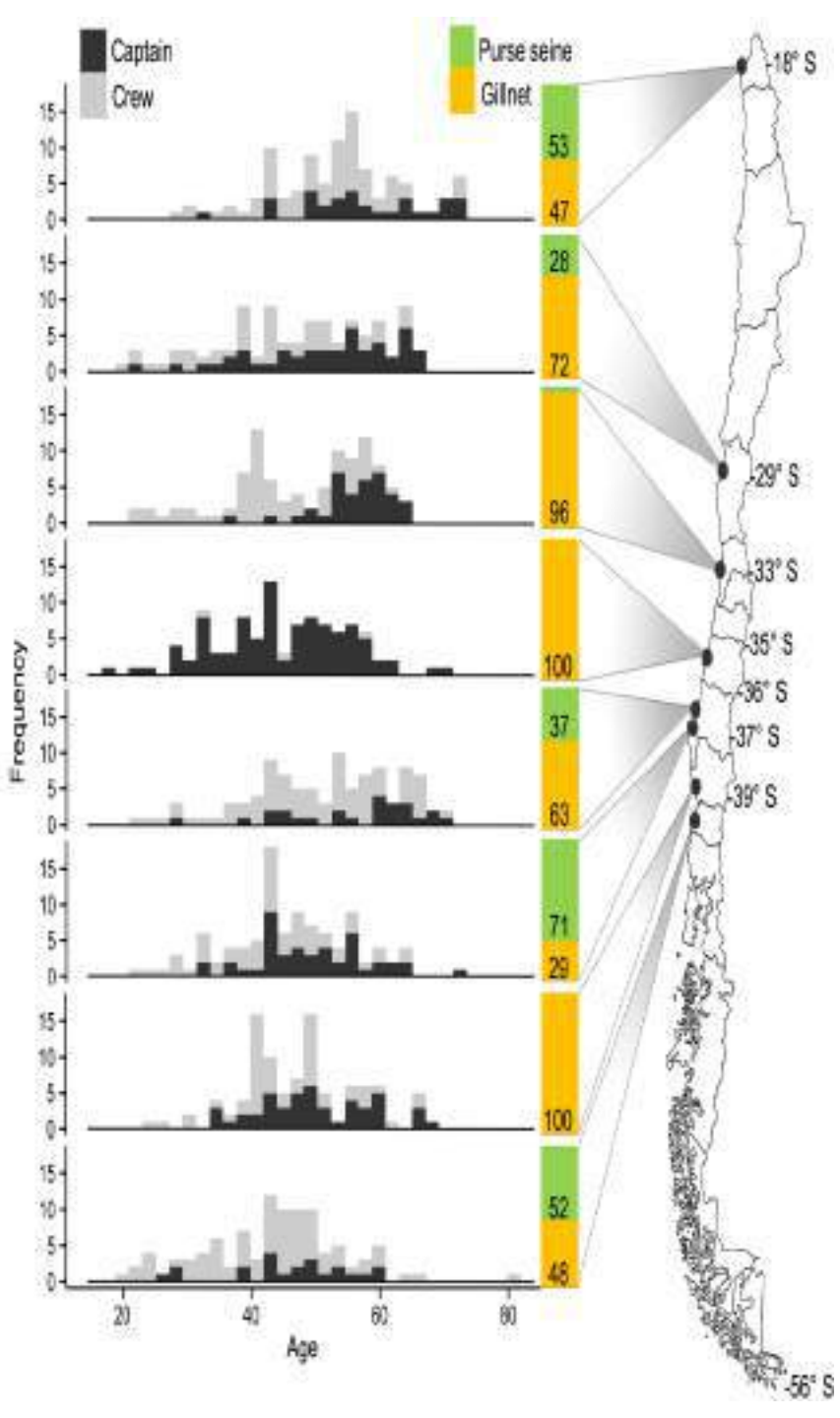
Fuel costs

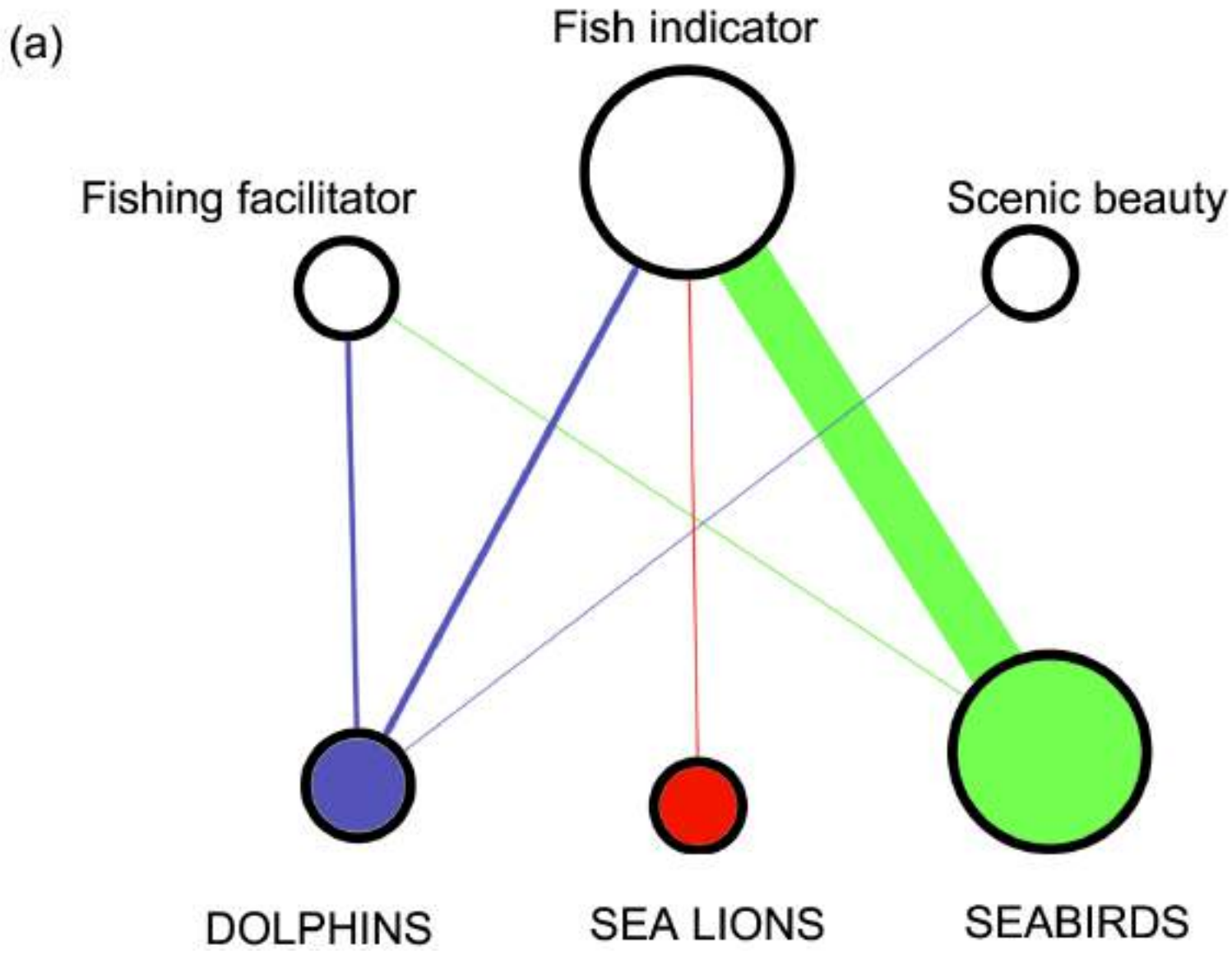
Assessment

Agreement on the Conservation of Albatrosses and Petrels

Toolbox proposal for best practice mitigation measure

Recommendations


Captain
Crew
Purse seine
Gillnet
Frequency
Age
53
47
28
72
96
100
37
63
71
29
100
52
48
-18° S
-29° S
-33° S
-35° S
-36° S
-37° S
-39° S
-56° S


(a)
Fish indicator
Fishing facilitator
Scenic beauty
DOLPHINS
SEA LIONS
SEABIRDS

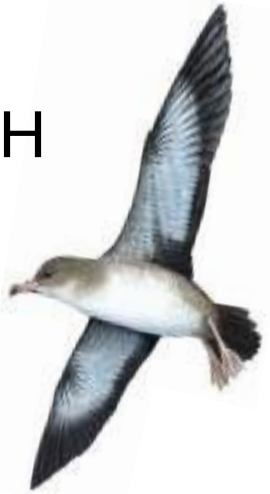
Muchas gracias!

National Fish and Wildlife Foundation (NFWF)

The Royal Society for the Protection of Birds (RSPB)

Subsecretaría de Pesca y Acuicultura (SUBPESCA), Chile

Fishers (Coronel, Valdivia) & CONAPACH



Pacific Seabird Group

Natura Alert (Unreleased)

LandSense Apps Education

PEGI 3

This app is in development. It may be unstable.

You don't have any devices.

Add to Wishlist Install

NATURA ALERT

HELP US TO TEST A SITE THREAT APP!

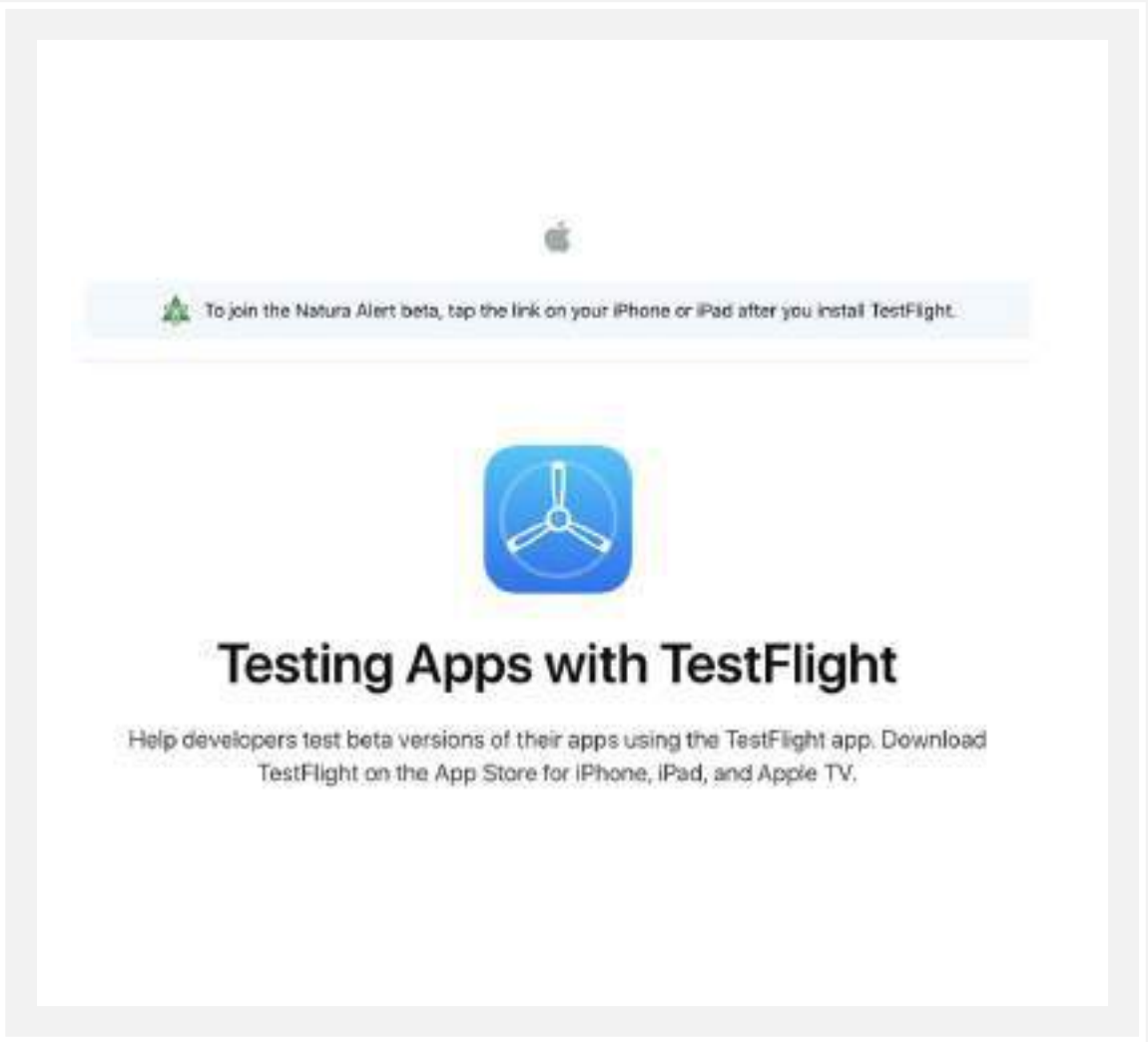
A BIT OF HISTORY

- H2020 PROJECT
- FOCUSING ON REMOTE SENSING IN N2000
- LINKED TO IBA/N2000 MONITORING BUT CAN BE USED ELSEWHERE
- TO BE LAUNCHED IN SPAIN AND INDONESIA IN 2019
- TO BE APPLIED ELSEWHERE IN EUROPE IN LATE 2019-2020

WHERE TO DOWLOAD

ANDROID [HTTPS://PLAY.GOOGLE.COM/STORE/APPS/DETAILS?ID=AT.AC.IIASA.NATURAALERT](https://play.google.com/store/apps/details?id=at.ac.iiasa.naturaalert)

IOS [HTTPS://TESTFLIGHT.APPLE.COM/JOIN/YALLFEYC](https://testflight.apple.com/join/yallfeyc)



A QUICK PRESENTATION

- https://drive.google.com/file/d/1fqxQPE7Ek2V-VNstzVuckkVQ3GYeH_SC/view

TRY IT OUT AND LET US KNOW

- Sofia.capellan@birdlife.org
- Ivan.ramirez@birdlife.org

Tackling Seabird Bycatch: The way forward for the EU

Bruna Campos
BirdLife Europe and Central Asia
bruna.campos@birdlife.org



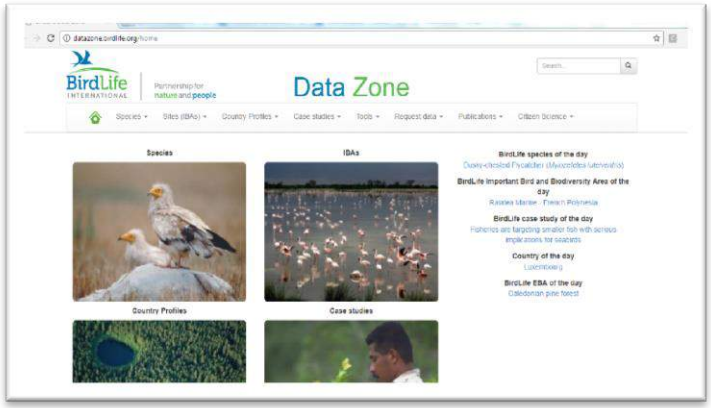
Together we are BirdLife International

The global Partnership for nature and people

BirdLife International

- We are the world's largest nature conservation Partnership
- 121 Partners worldwide
  - 1 per country
- 13 million members & supporters

Our dedication to nature at sea



The European Partnership at Sea

We are here to help, but it is not our responsibility…

Birds are legally protected

Balearic shearwater
2011 – ca 19,000 individuals

Birds Directive

A legal framework, binding for all Member States, for the protection of all wild birds in the EU, including their eggs, nests and habitats.

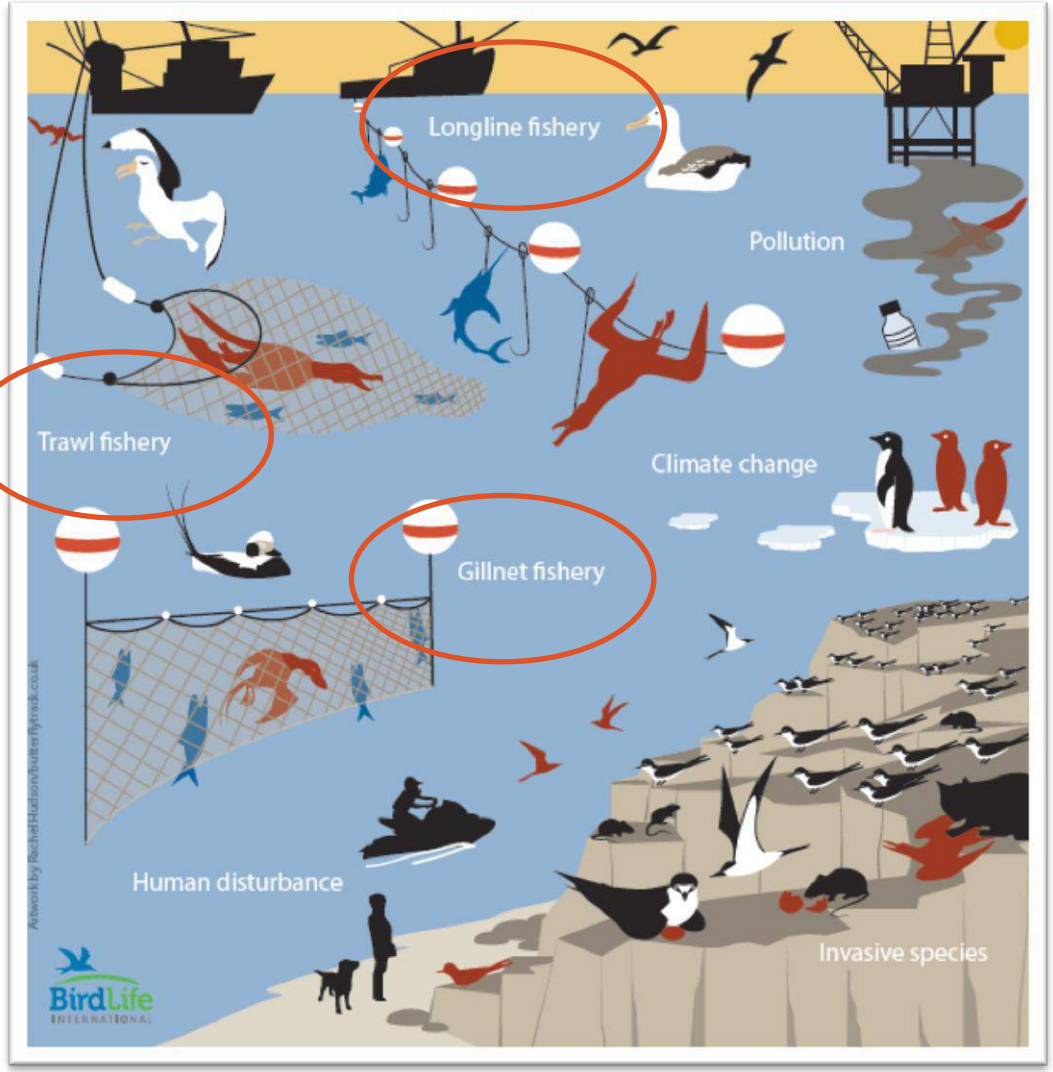
- **Designation of protected areas:** the most important areas for birds designated as Special Protection Areas (SPAs). These form part of the Natura 2000 network, regulated by the Habitats Directive.
- **Habitats for wild birds:** ensure that a sufficient area and diversity of habitats is available for all wild bird species
- **Species protection:** all naturally occurring wild bird species, their eggs, nests and habitats are strictly protected under the Birds Directive from killing, capturing and taking.
- **Hunting:** the Birds Directive regulates the hunting of birds in the EU, restricting the hunting seasons and methods, as well as the species that can be hunted.

90% decline trend within 60 years!

Bycatch is a major threat to seabirds

Bycatching seabirds is considered a deliberate act under the Birds Directive

Fishing is a planned activity in Natura 2000 - this means appropriate assessments should be carried out



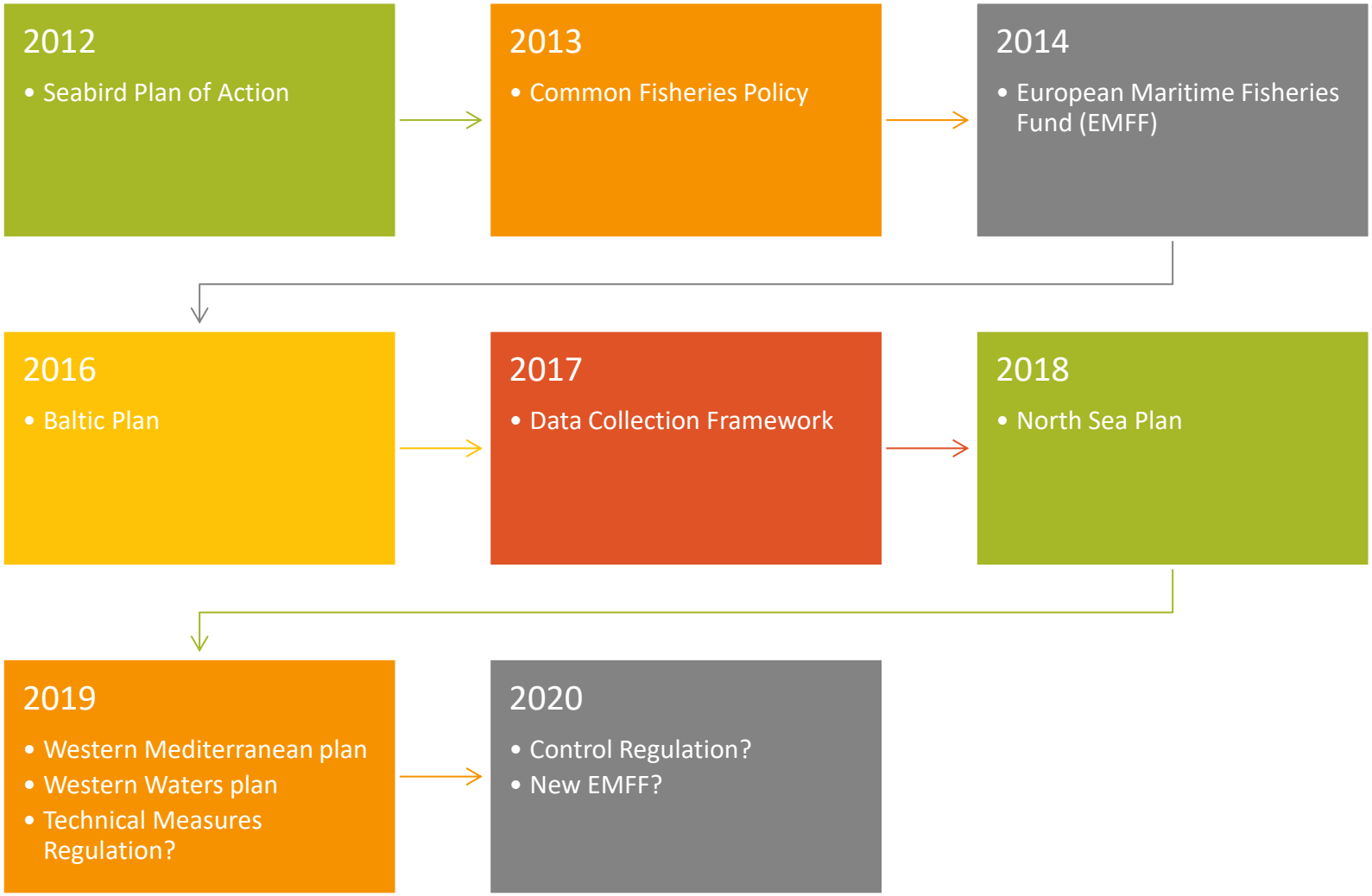
The scientific evidence

Region	Summary analysis
Baltic Sea	ca 76,000 birds are killed per year in gillnets
North Sea	In the Netherlands, 12,000-50,000 estimated to be killed per year
North Western Waters	ca 56,000 birds killed in the Gran Sol per year from Spanish demersal longline fleet alone.
South Western Waters	ca 30,000 birds killed per year in Portugal in purse seine, demersal longline, gillnets and polyvalent gears
Mediterranean	The critically endangered Balearic shearwater, the vulnerable Yelkouan Shearwater and Scopoli's shearwater, are regularly caught in pelagic and demersal longline fishery

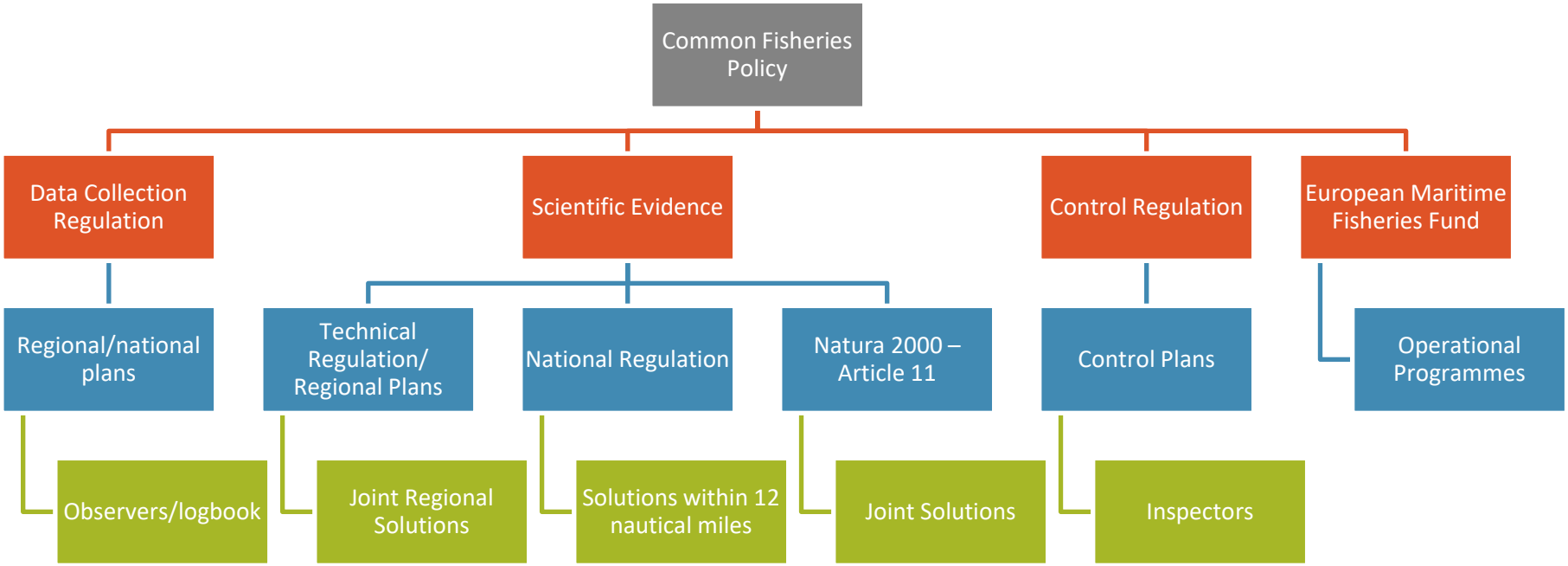
The solutions

Fishing Gear	Measures
All gears	Spatial measures: No-fishing Zone/ real time closures
Longline and trawl	Bird-scaring devices (e.g. streamer line, also known as tori line)
Longline (demersal)	Line weighting/integrated weight longlines
Longline and trawl	Night-setting with minimum deck lighting
Longline (pelagic)	Hook shielding
Gillnets	Still testing net lights and other visual cues

Timeline of Fisheries Policies



How will the EU apply rules?



The financial gap – European Maritime Fisheries Fund

8.9 million EUR planned for testing bycatch measures in 15 countries within 7 years

- 85,000 EUR every year per country to innovate and find solutions for all bycatch (seabirds, marine mammals, sea turtles, discards etc.)

This is clearly not enough….

Gaps in data collection

- NGO observer programmes should not replace national responsibility
- Not a single EU Member States has a national programme that is collecting systematic data on seabird bycatch

Gaps in implementing management solutions

- Management measures
  - No EU country has adopted a national seabird plan of action
  - No joint actions have been taken between member states
- 55 million EUR committed for all management in 20 MS in 7 years
  - 392,000 EUR per year – to solve all marine nature problems (e.g. Natura 2000 management)

This is clearly not enough….

Gaps in controlling vessels

- Electronic logbooks do not have systems in place to record seabird bycatch
- Not all vessels have VMS – in particular small scale
- Inspectors not controlling for seabird bycatch mitigation measures

Future political drive from the EU?

- EU Council of Agriculture & Fisheries Ministers
  - Future EMFF post 2020
  - Revision of the Control Regulation
- Regional Ministers
  - Agree on Management Measures
- National Governments
  - Action Plans
  - Scientific Programmes
  - Control Programmes

Recommendations for concrete actions in Portugal

Questions?

SPEA Workshop

Reducing seabird bycatch in European Waters – Challenges & Opportunities

Peniche, 6 March 2019

Reducing seabird bycatch in European Waters

How is IPMA participating? What can be improved?

Alexandra Silva
Laura Wise
Rita Vasconcelos

IPMA Instituto Português do Mar e da Atmosfera

Growing concern about Endangered Threatened and Protected species bycatch among institutes that provide fisheries advice

e.g. acknowledge need to improve and adapt fisheries monitoring programs to deliver better information on bycatch

(ICES WGBYC/WGCATCH, WKPETSAMP)

IPMA Mission

"Promote sustainable exploitation of marine resources while preserving biodiversity and good environmental status"

How is IPMA participating?

1. Monitor bycatch
2. Promote research
3. Collaborate/facilitate

IPMA Instituto Português do Mar e da Atmosfera

1. Monitoring

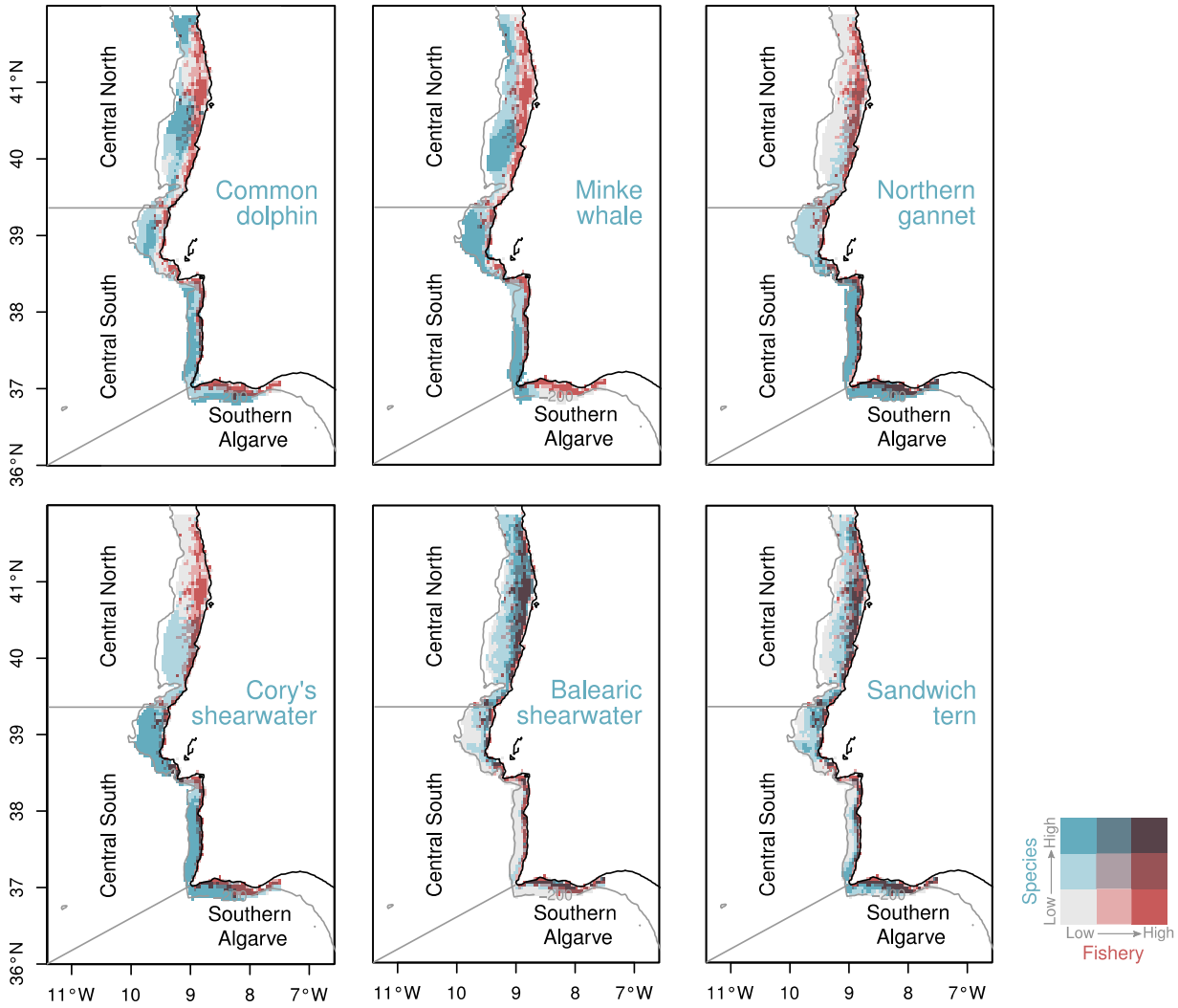
- ETP species monitoring is part of the national fisheries sampling plan (PNAB - EU DCMAP since 2009)
- Bycatch recorded by observers on-board coastal fishing vessels
- Monitoring not directed to the assessment of ETP species bycatch
- With current sampling protocols, better chances of detection of ETP species bycatch in gillnet, longline and purse seine fisheries (observers present during all hauling net events) than in trawl fisheries (observers may not be present during hauling events)
- Training on ETP species identification is limited
- Data reported yearly in DCMAP, (EC) Regulation 812/2004, ICES WGBYC reports

2. Research

Purse seine fishery – top predators overlap
Wise et al 2018

- Generally low spatial overlap; Cory's shearwater and Sandwich tern showed the highest values

- Cory's shearwater showed high resource overlap with the fishery



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2. Research

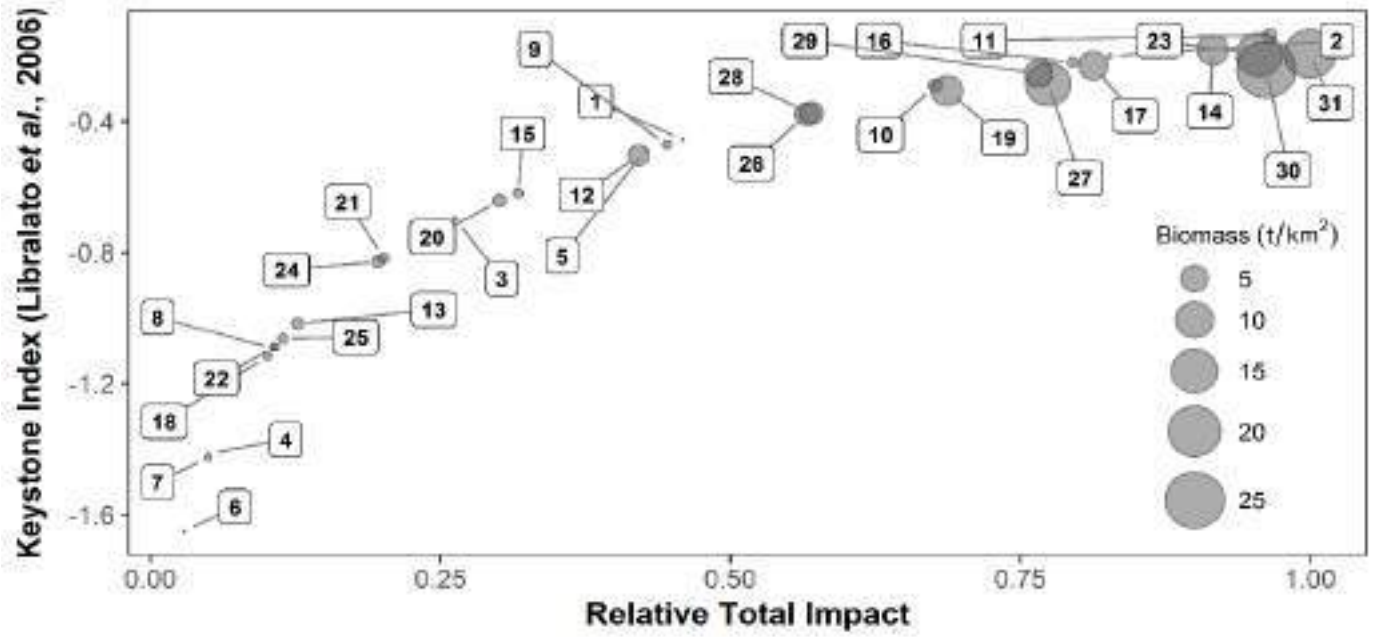
Keystone: minke whale (2), demersal piscivorous fish (16), squids (10), and benthic cephalopods

Dominant: phyto and zooplankton groups (29-31), sardine (23) chub mackerel (14)

Seabirds (1) pooled in a single functional group; intermediate impact

Ecopath, Portuguese waters 2006 – 2009

Veiga-Malta et al 2018



- Using a multi-model ensemble forecasting approach to identify key marine protected areas for seabirds in the Portuguese coast, Pereira *et al*. 2018
- …

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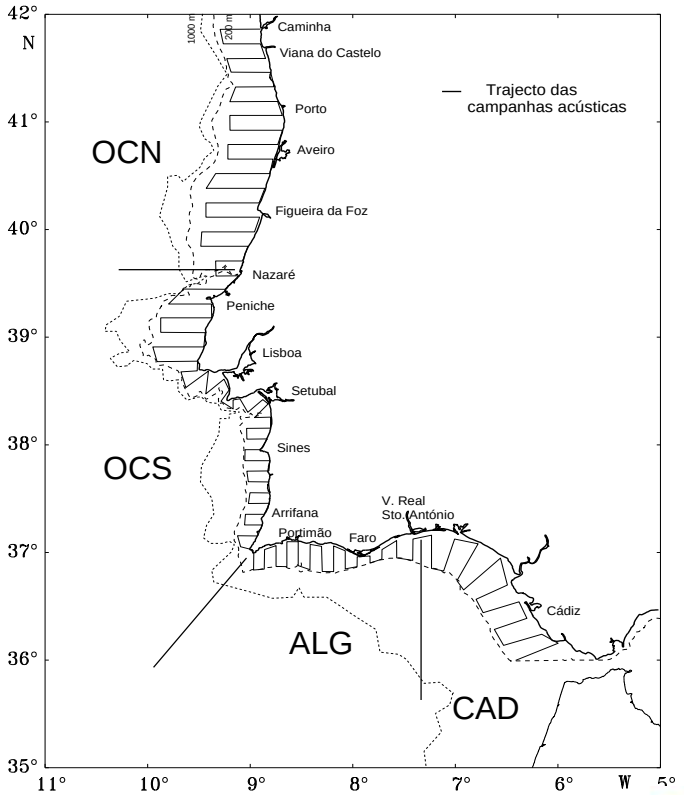
3. Collaboration

- IPMA surveys as platforms for seabird surveys (FAME, Life+ MarPro)
- Develop and disseminate Good Practice Manuals for different fisheries (Life+ MarPro)
- MSFD Biodiversity report 2018



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What can be improved?

Observers training to improve ETP species identification

Improve/adapt sampling protocols; coordinate with ICES initiatives

Promote collaborative actions to raise fishermen awareness of seabirds bycatch and mitigation measures

Update/improve Good Practice Manuals

Strengthen collaboration in research projects

Thank you very much

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