

# Question?

ME6024: What is the scale of accidental captures of seabirds in fishing gear in UK seas and what can be done to better understand and reduce the problem?

## What's the problem?

Despite a number of reports in the literature and anecdotally, we still know relatively little about the scale and nature of accidental capture of seabirds in fishing gear (known as “bycatch”) in UK waters. Key questions include: how many birds might be caught in which fishing gears, of what species, and what effect may it have on their populations (many of which are declining)?

There is evidence from many areas around the world that bycatch is a problem and that it can threaten vulnerable seabird populations, so we need concerted action. There are several international efforts underway to better understand and address the problem; the UK is an active participant in these and its fishing industry is already taking action. This research will support the drafting and implementation of a stakeholder-led UK Plan of Action on Seabird Bycatch.

## What are the aims of the project?

**Understand where bycatch occurs and how it is impacting seabird populations.** Use boat-based observer schemes to record bycatch rates; assess the extent of bycatch and its population impacts; identify where and in what gears bycatch is most likely to occur; identify and seek improvements required to monitoring and assessment.

**Identify new and improve existing bycatch mitigation techniques.** Review worldwide information on measures, identify which have been used in UK fishing fleet and what future potential is; Undertake trials to ensure methods are effective and acceptable to fishers.

**Promote and support the use of bycatch mitigation measures.** Promote proven methods to fishers and managers, e.g. through handy and accessible information packages (“toolkits”); understand current barriers (and incentives) to bycatch reduction; facilitate wider adoption of measures, once tested.

**Champion bycatch mitigation internationally.** Engage with international efforts on bycatch reduction and monitoring. Such collaboration is required because we “share” bird populations with neighbouring countries and because birds migrate between countries.

Figure 1: Gannets congregating around a hauling fishing boat. (Source: Allen Kingston, Scottish Ocean Institute).



## Which policy areas will the research inform?

This research informs the UK government's work to protect vulnerable marine species, and specifically to achieve good environmental status for currently declining seabird populations, as reflected in the UK Marine Strategy and forthcoming Seabird Conservation Strategies for Scotland and England. It also ties into an overarching aim to minimise and, where possible, eliminate bycatch of sensitive marine species which is reflected in the UK Fisheries Bill. This research will inform the UK's position and advocacy in various international platforms such as OSPAR (the Oslo Paris Agreement for the Protection of the Marine Environment in the North-East Atlantic), and other multi-lateral environmental agreements.

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### What are the results from the project and how will they be used?

**Preliminary estimates of seabird bycatch by UK vessels** – At least ten seabird species were recorded as bycatch by observers on UK-flagged fishing vessels in UK waters. The most frequently recorded was guillemots (in gillnet and midwater trawl fisheries) and fulmar (in longline fisheries). Extrapolations using measurements of bycatch rate (how many birds per unit of fishing effort) combined with information on total fishing effort provide a very rough idea of the total numbers that might be killed. Estimates of fulmar bycatch in the offshore longline fishery are around 4500-5700 birds each year. Estimates for guillemots are around 2300-2700 each year, mainly from static net fisheries. These results (together with a study of the possible population impacts on affected seabirds (see below) have informed an assessment of the scale of the UK “bycatch problem”, identification of which fishing gears are problematic so priority action can be explored with fishers. They also identify gaps in our knowledge that could be improved by enhanced monitoring and data sharing.

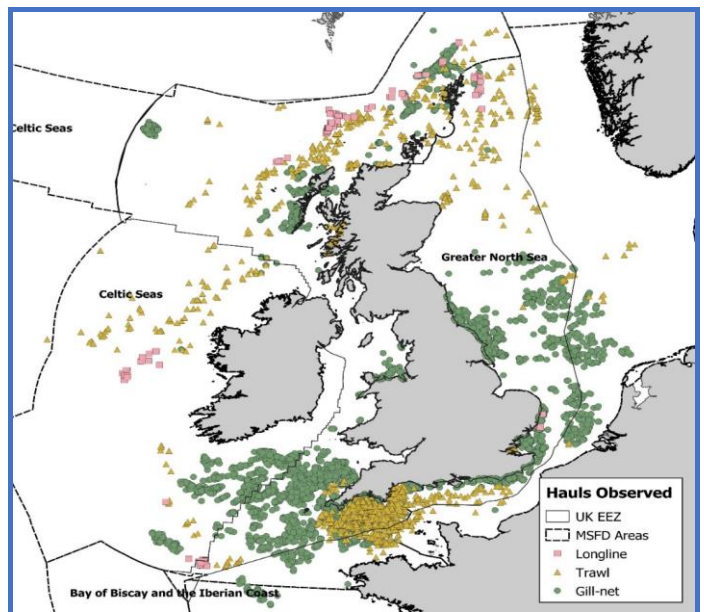
**Preliminary assessment of the impact on marine bird populations of bycatch from the UK-registered fishing fleet.** Mortality estimates from the above study were used to estimate possible impacts of bycatch on seabird populations. A form of mathematical modelling, called Population Viability Analysis, was used. Modelled impacts were greatest for cormorant and fulmar, for which removing all bycatch mortality could theoretically result in an estimated UK population increase of 1-20% and 2-9%, respectively. Impact for guillemots was relatively small, despite the large absolute number killed. The large range in plausible impacts is due to scientific uncertainty about how seabird populations actually respond to changes in mortality. The results of this study help us to assess priorities for bycatch reduction and how populations may benefit from the measures.

Two more studies are close to completion. One is an investigation of whether there are bycatch “hotspots” around the UK where priority action should be focussed, for example trials of reduction techniques. The other is a review of worldwide bycatch reduction methods, which

have been tested in the UK or are likely to work here and for which further research would be required. Both will inform how we target action on the ground.

Planned studies include an assessment of additional sources of information that could potentially be used to assess seabird bycatch in the UK. To date the main source has been the UK Bycatch Monitoring Programme, which uses dedicated on-board observers to sample bycatch rates, but other non-dedicated programmes that mainly study fish could also be used, if found to be scientifically robust. A further study will look at how representative existing monitoring is and how improvements could be made to ensure decision-making is informed by sound evidence.

Figure 2: Distribution of sampling by the UK Bycatch Monitoring Programme. (source: Scottish Ocean Institute).



### Where can I find further information about this and related research?

Please contact Defra's Marine and Fisheries Science Unit: [marine&fisheriesscience@defra.gov.uk](mailto:marine&fisheriesscience@defra.gov.uk)

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