

EVIDENCE OF CONTINUED ILLEGAL AND UNREPORTED FISH DISCARDING IN WEST SCOTLAND NEPHROPS (SCAMPI) TRAWL FISHERY



Our Fish



OPEN SEAS

EXEC SUMMARY

In 2013 the 'discard ban' or Landing Obligation was agreed to reduce and record the amount of fish killed as 'unwanted catches' in our fisheries, specifically to end seafood waste at-sea and reduce the amount of unintended fish mortality caused to populations of fish caught as bycatch.

On the West Coast of Scotland, these populations include cod, whiting and haddock, all of which are at depleted levels in this area. Cod stocks have essentially collapsed.

The discard ban was phased in between 2015 and 2019 to allow fisheries and businesses time to adapt. However, a 2018 House of Lords investigation found "no evidence that fishers have been complying with it", and further that "little attempt appears to have been made to enforce the landing obligation's requirements thus far".

Due to the depletion of fish stocks and consolidation of quota, the west coast fisheries now target *Nephrops*, sold as scampi or sometimes langoustine. Bottom trawls with relatively small net mesh sizes are deployed to catch these and result in high amounts of bycatch – though this is temporally and spatially variable.

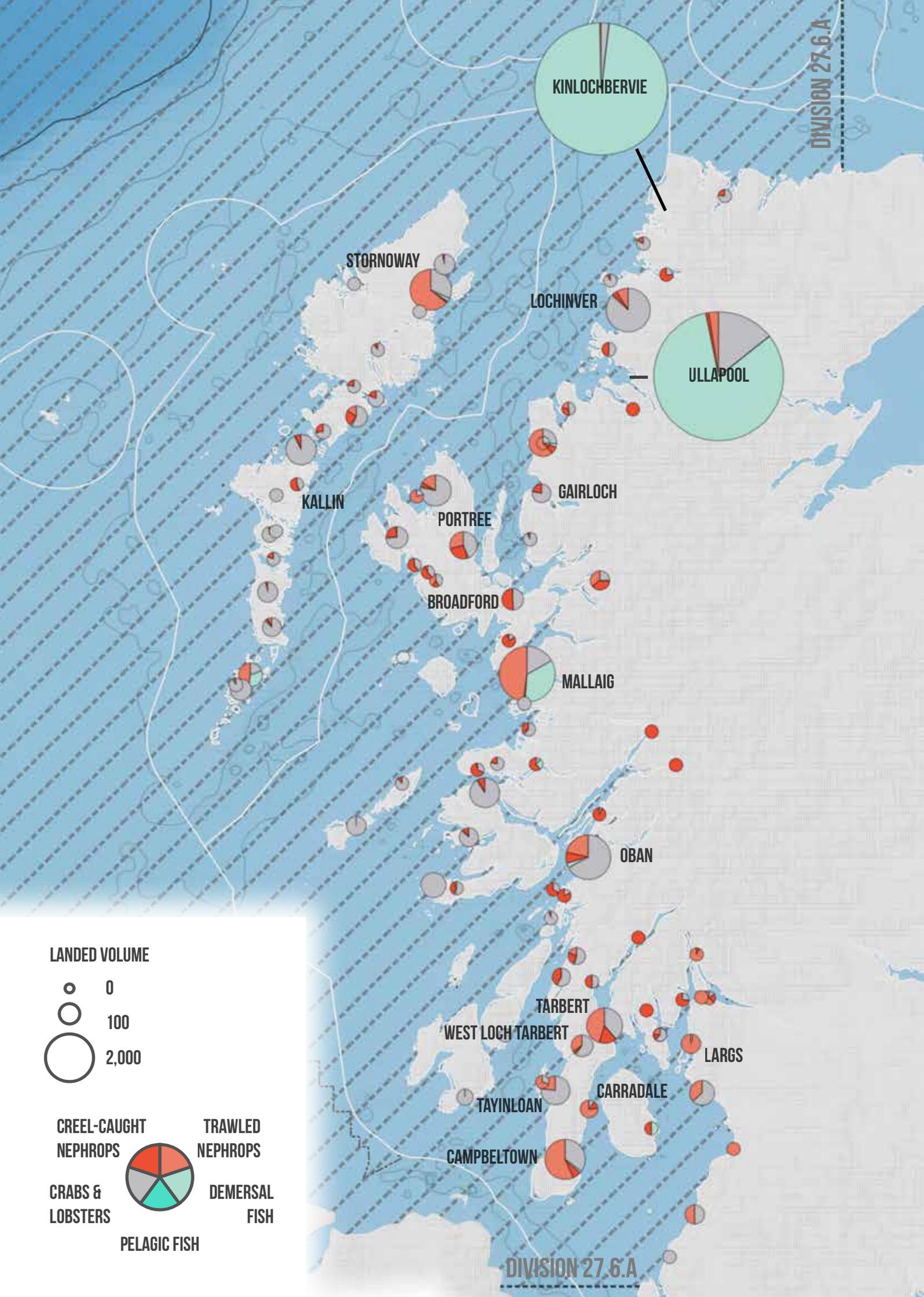
There are few exemptions from the discard ban on the west coast of Scotland meaning that we would expect most fish caught to be landed. This report investigates landings data and photographic evidence submitted to the authors.

This report concludes that fish continue being discarded by *Nephrops* trawlers operating on the West coast of Scotland. This is not only illegal based on the Landing Obligation; it also means the overall catch is being unreported, and the stocks of these species are being overfished and prevented from recovering.

In 2019 a 'discard quota' was made available to assist those *Nephrops* trawlers inadvertently catching these species by allowing them to land the catch and continue to fish. However, it appears that this has not been distributed effectively or used in a way to help these high bycatch fisheries. Discarding is continuing and instead landings of these stocks have been made to the ports used by the demersal offshore fleet, by perhaps using the discard quota.

Many groups have considered this issue before us and have concluded areas of high bycatch must be avoided, and robust vessel monitoring is required. We support these calls.

Government and the seafood industry appear to understand that illegal and unreported discarding is continuing but are failing to stop it. We advocate for a spatial plan for better bycatch avoidance and shall continue to call out those profiting from this damaging and regressive practice until it is resolved.



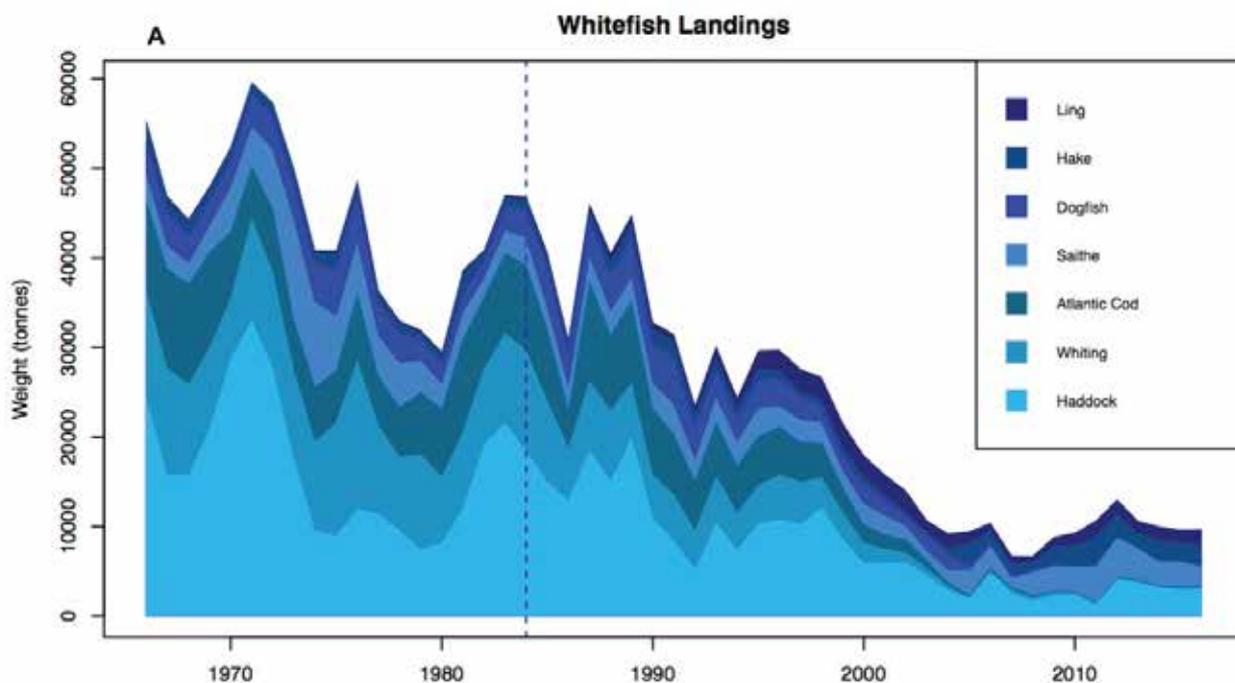
THE LANDING OBLIGATION

In 2013 the 'discard ban' or Landing Obligation was agreed to reduce and record the amount of fish killed as 'unwanted catches' in EU fisheries.

In Scotland this obligation has also been established in the National Marine Plan (the statutory plan for management of Scotland's seas) and is particularly important for West of Scotland (Division 27.6.a) fish populations which are currently overfished as a result of bycatch in the trawl fisheries.

The Landing Obligation has been phased in since 2015 and came into full force on 1st January 2019. The 'phase-in' was intended to provide different segments of fishing fleets time to adjust their practices and business models to achieve the change legally required by the Landing Obligation.

As of January 1st 2019 no fishing boat was permitted to discard any 'quota species', i.e. fish that are managed using a fishing quota. Exemptions apply and can be complex in the North Sea and on the East Coast of Scotland, for example "catches of common sole below minimum conservation reference size (MCRS) made by otter trawls within cod ends of 80-99mm trawls in ICES division 4c" are exempt. However, off the west coast there are few exceptions and the regulations much more straightforward¹.



Decline in fish landings from Division 27.6.a over the past 50 years

THE WEST OF SCOTLAND FISHERIES

West of Scotland fisheries have gone through major changes in the last 50 years mostly driven by the collapse of fish stocks and the consequent fleet diversification into shellfish trawling, dredging and creeling.

Whilst fish stocks were once significant on the west coast and provided economic opportunities in many communities - even founding villages such as Plockton - most have since been overfished to the point that commercial fishing is not economically viable. The majority of the fisheries now operating in coastal waters in the west of Scotland comprise shellfish boats, either creeling (potting) for *Nephrops*, crabs and lobsters, trawling for *Nephrops* or dredging for scallops. Further offshore, on the Hebridean slope or further north, trawlers continue to operate and catch fish, but spend little time working in inshore waters.

The creel fleet is the dominant fishery in terms of number of boats and employment. However, the trawl fleet, which focuses on *Nephrops*, is the dominant fishery in terms of volume and therefore overall value of catch.

In recent times, the majority of landings made to West Coast ports have been *Nephrops*, scallops, crabs or lobsters. The fish that is landed is nearly exclusively landed to Kinlochbervie and Ullapool which serve the mixed demersal fleet operating on the waters of the Hebridean shelf and Rockall.



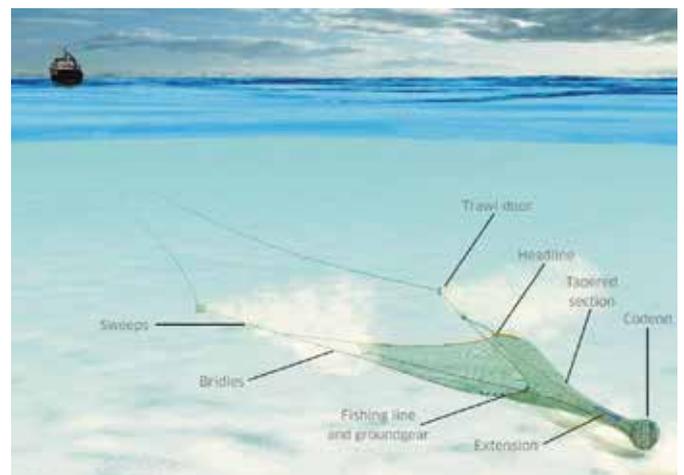
NEPHROPS & SCAMPI

Nephrops are a burrowing crustacean species which live in muddy seabed habitats. Historically they were a bycatch species. However, as the proportion and size of fish caught on the west coast decreased, the proportion of *Nephrops* increased. As fish quota became less available (due to dwindling stocks and consolidation of the fishing quota to fewer owners) the fish caught became less commercially important and instead the *Nephrops* themselves became the target species.

Large *Nephrops* are sold as langoustine whilst smaller ones are 'tailed' (i.e. decapitated) and sold as *Nephrops* tails which are then processed, breaded and sold as scampi. There is a small market in live trawl-caught langoustine, but the majority of *Nephrops* are landed dead.

Trawlers pull wide-mouthed trawls over the muddy seabed of sea lochs and sounds to catch *Nephrops*. Because they are relatively small (minimum landing carapace size on the west coast is 20mm where an 'XXL' langoustine can have a carapace more than 70mm) net mesh sizes are also small, down to 80 - 90mm gaps². Inevitably these small mesh sizes mean nets catch a high proportion of non-target species and sadly a very high proportion of this is undersized^{3 4} - the smallest cod which can be sold are 350mm, only around 15% of cod caught as bycatch in Scottish Fishermen's Federation (SFF) observed trawls in 2013/2014 were above that size.

Due to the intensity and large footprint of *Nephrops* trawling, the volume of fish bycatch appears to be resulting in overfishing of several key stocks. Data compiled by the International Council for the Exploration of the Seas (ICES) - the independent international stock assessment authority - indicates that this may be a particularly serious issue for West of Scotland [whiting](#) and [cod](#) stocks. In fact, recent studies have gone so far as to state "results strongly suggest that a substantial reduction in the bycatch of juvenile whiting by the crustacean fishery is essential to the recovery of the [west Scotland] whiting stock."⁵



O'NEILL & MUTCH (2017)

Table 1. Preliminary estimates of total unwanted catch of Cod, Haddock, Whiting, Saithe in ICES Subarea 27.4 and Divisions 27.6.a and for the UK Nephrops trawler fleet landing in to Scotland and Scottish vessels landing abroad, in Jan-Mar 2019

ICES Region	Species	Preliminary estimate of unwanted catch (t)	Associated 95% Confidence Intervals (t)
Subarea 27.4	Cod	223	(118, 462)
	Haddock	799	(189, 1732)
	Whiting	308	(158, 598)
	Saithe	3	(1, 14)
Division 27.6.a	Cod	197	(9, 295)
	Haddock	737	(257, 1069)
	Whiting	374	(108, 561)
	Saithe	0	-

Excerpt from Freedom of Information response FoI/19/02197 stating the total volume of bycatch expected by Scottish Government in the first quarter of 2019.

NEPHROPS TRAWL BYCATCH

It is difficult to obtain precise estimates of the amount of bycatch caught in the *Nephrops* trawl fishery, this is because the level of bycatch varies spatially and temporally. For example:

- *Nephrops* made up only 10.6% of the volume of catch in a 'control' tow 50 miles north of Fraserburgh (i.e. 89.4% was bycatch), and only 13.5% in the 'trial' modified tow, designed to reduce overall bycatch, Kinghorn et al (2017)⁶.
- *Nephrops* represented only 12% of the weight of total catch in the Farne Deeps, Evans et al (1994)⁷.
- In the Clyde in the early 2000s the amount of *Nephrops* varied between 14% and 23% of volume (though the remaining 77% comprised of shellfish and seaweed as well as fish) Bergman (2002)⁸
- Wieczorek et al (2001) concluded that "80 tonnes of biomass are discarded every working day by *Nephrops* trawlers in the Clyde"⁹
- The Clyde Fisheries Development Project's 2007 Fisheries Review¹⁰ of the Clyde fisheries found that 6% of trawl catch was haddock, 4.9% was whiting, and other species made up about 7%, and all were subsequently discarded.
- The Scottish Fishermen's Federation's (SFF) Observer scheme data undertaken between 2013 and 2014 found that cod bycatch in the *Nephrops* fishery operating in the Clyde and West of Kintyre area made up on average only 0.43% of the catch. However, even this figure varied wildly, and was as much as 18.29% in one trawl. The scheme - involving 50 boats - found that the overall fish bycatch (including cod) was on average 5.8% but in some areas and times as high as 48% (unpublished¹¹).

A reliable and definitive estimate of the extent of bycatch in the *Nephrops* trawl fishery is therefore difficult to obtain and as shown by Heath & Speirs (2012)¹² and Hunter et al (2016)¹³ they are likely to have changed over time as the effect of overfishing has altered the ecosystem, stocks sizes and the size of fish in those stocks, and as selectivity in the *Nephrops* trawls has been improved.

Despite the variance, a recent Freedom of Information request shared with Open Seas shows that the Scottish Government expected **1,308 tonnes** of unwanted cod, whiting and haddock to be caught from inshore waters (0-12nm) on the west coast of Scotland by "UK *Nephrops* trawl fleet landing in to Scotland and Scottish vessels landing abroad" in the first three months of 2019 alone¹⁴, suggesting that there continues to be a high proportion of bycatch in the West of Scotland *Nephrops* trawl fishery. We set out above an extract of the FoI.

NEPHROPS TRAWL DISCARDS

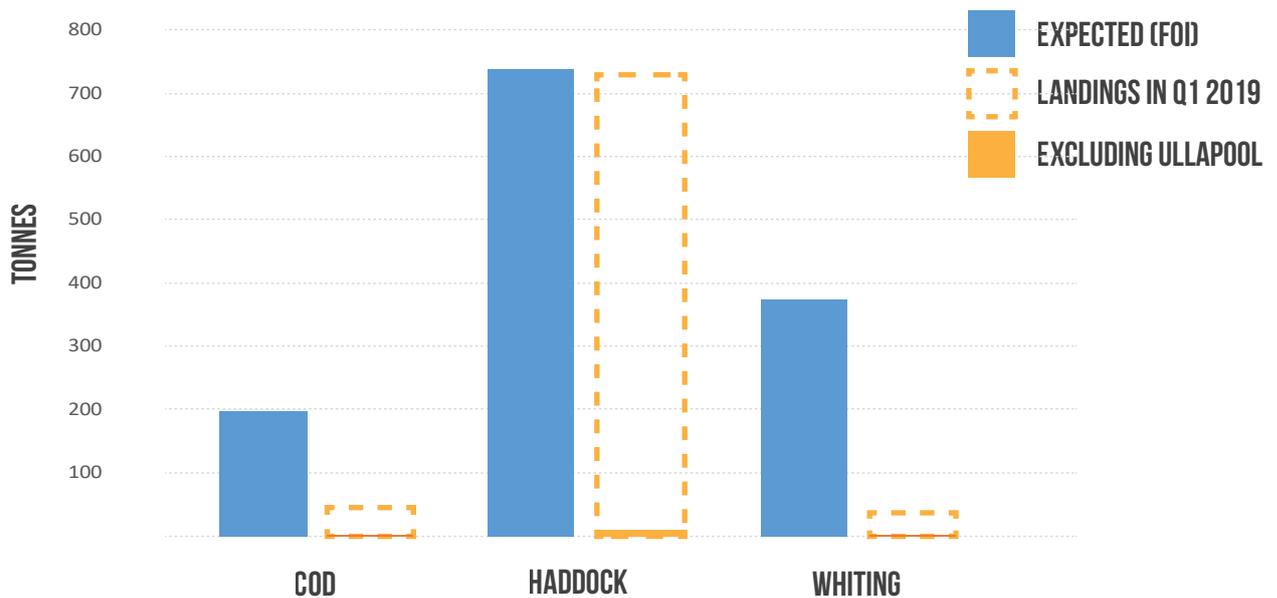
Given the discard ban is now in force, we would expect to see landings to those ports used by the *Nephrops* trawl fleet to reflect the Scottish Government's estimates of unwanted catches. Landings data are made available with a two-month lag from the Marine Management Organisation (MMO) and we are therefore able to interrogate whether this occurred using publicly accessible data¹⁵.

Port	Landings Jan - March 2019 (tonnes)			
	<i>Nephrops</i>	Cod	Haddock	Whiting
Troon and Saltcoats	254.8			
Campbeltown	154.6			
Stornoway	147.4	0.1	1.5	
Ullapool	125.9	44.6	719.7	38.6
Tarbert	121.1			
Gairloch	99.8	0.1	0.2	
Lochinver	98.3	0.2	0.8	
Mallaig	74.7	0.1	0.9	
West Loch Tarbert	50.6			
Carradale	42.6			
Portree	37.3		0.1	
Largs	30.3			
Tayinloan	28.9			
Oban	28.5	0.1	5.8	
Broadford	23.3			
Stockinish	21.6			
Kyle	17.1			
Uig	16.3		0.1	
Kallin	14.7			

The table above shows landings data for the 20 most important ports on the west coast for *Nephrops*. Note that these landings do not discriminate by gear type, therefore *Nephrops* landings will include creel-caught (especially in Kallin) as well as trawl caught.

With the exception of Ullapool all ports received negligible landings of cod, haddock or whiting. Indeed, eight ports recorded no such landings at all. For example:

- Despite receiving 254.8 tonnes of *Nephrops*, no cod, haddock or whiting were landed to Troon and Saltcoats. *Nephrops* made up 95% of all landings made to this port during this period. The other landings were Crabs (2 tonnes), Scallops (50kg), Whelks (127kg) and 11 tonnes of "other shellfish".
- At Campbeltown, no cod, whiting or haddock were landed, despite *Nephrops* landings of 154.6 tonnes (87% of all landings made to this port during the period).
- At Stornoway 147 tonnes of *Nephrops* were landed (representing 69% of the total) alongside 36 tonnes of scallops and 19 tonnes of crabs, indicating the mixed fisheries present in the port. However only 145kg of cod were landed, 1.45 tonnes of haddock and 0kg of whiting.
- At Carradale 42.6 tonnes of *Nephrops* were landed but no cod, whiting or haddock.
- At Largs 30.3 tonnes of *Nephrops* were landed, and again there were no landings of any other species to these ports made during this period.
- Whilst Ullapool is used by *Nephrops* trawlers, it is also an important port for demersal trawlers operating offshore and targeting fish species. We therefore consider it likely that the majority of the cod, haddock and whiting landings recorded here were made by mixed demersal boats targeting these species offshore. This is further indicated by the fact that *Nephrops* made up only 6.2% of the landings made here, and that nearly six times more haddock were landed than *Nephrops*. Meaning that, if these landings were the fish caught as bycatch in the *Nephrops* trawls, the trawlers operating out of Ullapool would be exceptional and unlike any other on the west coast of Scotland.



Histogram comparing Marine Scotland's prediction of unwanted cod, haddock and whiting catch with landings from the entire west coast of Scotland, including & excluding Ullapool

ILLEGAL DISCARDING

Landings data do not align with either Marine Scotland's estimates of unwanted catch volumes, or with estimates of bycatch proportions observed by previous studies. Landings to most ports on the west coast are only possible if the *Nephrops* trawl fisheries operating in these areas are completely without bycatch. Based on extensive prior study and Marine Scotland's own estimates, we believe that this is implausible.

Whilst we acknowledge that some tows for *Nephrops* can be relatively 'clean' (i.e. without high levels of bycatch), these landings figures (e.g. 254.8 tonnes with no bycatch) surpass even the levels of bycatch seen in highly selective gear trials. Our interpretation is that vessels within the *Nephrops* trawl fishery continues to discard bycatch (including but not limited to cod, haddock and whiting) despite the requirements of the Landing Obligation.

The most extreme apparent examples of this are in the Clyde, where the data suggest that, cod bycatch is less than 0.01% of Clyde-wide catch, haddock less than 0.01% and whiting bycatch completely non-existent.

The exception is Ullapool where landings indicate either that the port is being used by *Nephrops* trawlers and mixed demersal trawlers which operate offshore, or the *Nephrops* fisheries landing here are bycatching exceptionally large amounts of haddock, cod and whiting.

Such interpretations of the landings data are not new and in fact echo positions also made by Marine Scotland, the fisheries manager. In October 2018 the Head of Sea Fisheries Division for Marine Scotland, Alan Gibb, stated:

"...there is one continuing challenging narrative that we are facing: that across a large number of stocks there is an assumption that the Top Ups provided to cover the discard column as we move to full implementation of the Landing Obligation have simply been taken as additional quota, with discarding continuing at normal and even increased levels..."

I personally think the challenge is probably fair, though happy to be advised otherwise."

Furthermore, albeit in the North Sea, Marine Scotland electronic monitoring trials found that landings of bycatch species and sizes were significantly greater in 2016, when electronic monitoring was fitted to trial vessels, than in 2017 when it was not. This specifically implies that these landings reflect a "reversal of behaviour" i.e. a return to discarding.

We therefore consider that the lack of bycatch species landings made to west of Scotland ports provides clear evidence that discarding in the *Nephrops* trawl fleet continues on the west coast of Scotland.

NEPHROPS TRAWL DISCARDS

Furthermore, photographic evidence has been made available to Open Seas which supports our concerns. We present below some of the images obtained in 2019 on the West of Scotland which appear to show discarding of fish which should be covered by the Landing Obligation (unless stated).







APPARENT LESSER SPOTTED DOGFISH (EXEMPT FROM LO) THROWN OVER THE OTTER BOARD



PHOTO OF TRAWL BROUGHT INTO PORT DURING A STORM, BEFORE BYCATCH HAS BEEN REMOVED

We consider the images and the irreconcilable landings and bycatch data to be compelling evidence that discarding is continuing in the *Nephrops* trawl fishery which operates on the west coast of Scotland.

MISUSE OF BYCATCH QUOTA?

As discussed, many of the stocks and species being bycaught are already overfished. ICES catch advice for cod and whiting on the west coast is for a 'zero TAC', i.e. that no fish should be caught.

The Fisheries Minister has overridden this advice, apparently because of concerns that it would close fisheries in which vessels are bycatching these stocks. This appears to be a specific concern for the *Nephrops* trawl fleet.

During the 2018 EU AGRIFISH Council meeting that set the 2019 fishing opportunities, Fisheries Ministers agreed a TAC of 1,735 tonnes of cod on the west of Scotland⁶, of which 1,046 tonnes were allocated to UK fishing boats. This quota was established as a 'bycatch quota' buffer, to be specifically used by those boats catching unwanted cod and to allow them to continue operating and this was specifically "secured by Scottish Government" during the negotiations for this purpose.

It represents a significant overfishing pressure of an already depleted stock - 1,735 tonnes in excess of scientific recommendations. However, it at least provides a legal mechanism by which bycaught cod did not need to be discarded and could be landed, helping the fleet that might otherwise be tied up early, and better understand when and where the bycatch happens. A similar 'bycatch quota' buffer was secured for whiting.

The original EU Commission proposal for the Bycatch TACs also required conditions including fully documenting all of these catches with the use of Remote Electronic Monitoring on board vessels (using CCTV) and

development of bycatch reduction plans. The requirement for CCTV was rejected by Fisheries Ministers, and the bycatch reduction plans agreed to without this level of monitoring and have since been found to be inadequate and ineffective.

Unfortunately, it also appears that this bycatch quota has not made its way to the *Nephrops* fleet. Quota usage figures, available up to November 2019¹⁷, show that the majority of landings have been made by members of the Producer Organisations, and specifically the Scottish Fishermen's Organisation. Landings data up to September 2019 show that the majority of the cod bycatch quota have been made to Ullapool (129 tonnes) and Kinlochbervie (555), and therefore that this bycatch quota has not been used to help those at risk of being tied up, rather it has been used by those able to land saleable sized fish.

It may even be the sad case that some of these cod landings came following the repeal of the EU "windsock" regulation, allowing trawling within the West Shetland Shelf MPA for the first time in 14 years, given that some boats from Kinlochbervie were known to fish in the area in mid and early August and that the MPA is within this ICES area.



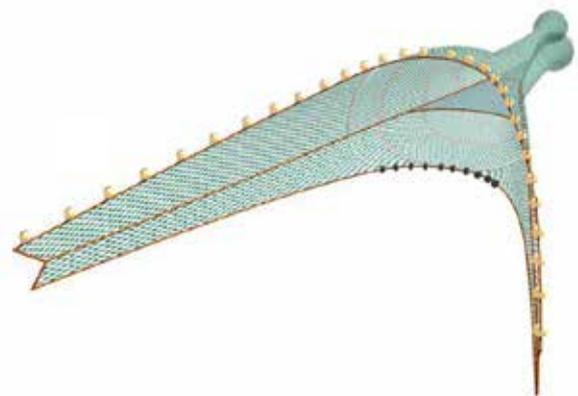
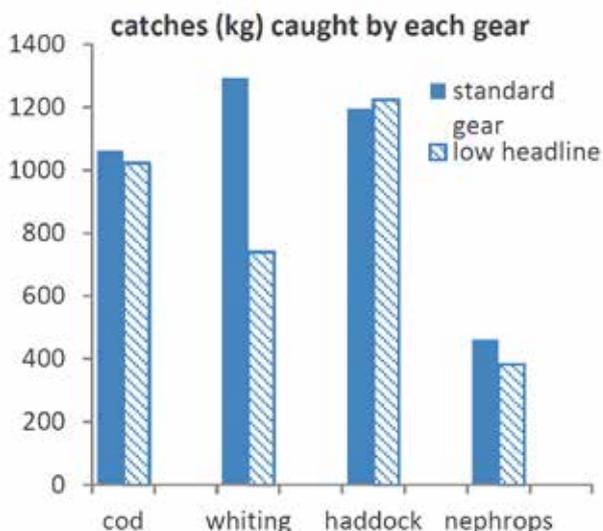
HAVE GEAR INNOVATIONS ENDED BYCATCH?

The fishing fleet have led the way in innovating new gear technology to select only targeted species catch and allow bycatch to escape before being hauled on-board. O'Neill & Mutch (2017) detailed the various approaches tested and their success .

These vary wildly in their effectiveness. For example, 200mm 'inclined net panels' inserted into the net effectively separating out more than 90% of the cod, haddock and whiting in trial tows in the North Sea. Whereas reduced 'headline height' in Nephrops trawls had no real impact on cod and haddock catch off Fraserburgh, despite improving whiting selectiveness.

Sadly, the data and images we have presented provides compelling evidence that discarding continues despite such innovative work. Whether this is because these gear innovations are not being taken up or because the innovations are not fully effective, is unclear.

Moreover, these new "selective gear" innovations have not been included in the bycatch reduction plan proposed for the West Coast of Scotland, and do not appear to be mandated for the fisheries in the future. This is despite commitments made earlier in the year that such measures would be brought forward.



Effectiveness of 'low headline' gear for the three key species, and an illustration of the 'inclined net panels' from O'Neill & Mutch (2017)



WHAT ARE THE SOLUTIONS?

We are not the first people to point out this problem. The EU's North West Waters Advisory Council (which comprises fishing sector and NGO representatives) has already considered the issue in detail. Regarding both cod and whiting it recommends the following actions¹⁸,

1. Accelerate introduction of technical measures and monitor effectiveness of the measures introduced.
2. [Access to] Bycatch TAC[s should be] linked to requirements for full catch documentation.
3. [Better define] stock identity
4. Explore spatial/temporal closures (including real-time closures to protect juveniles) [in our view with a focus on inshore waters, sealochs and sounds where juvenile abundances are high].
5. Prioritize measures that are geared towards stock recovery, i.e. avoid capture in the first place and maximize survival of any escaping cod.

We agree with these and support their roll out. In particular, we would like to see avoidance of inshore and coastal waters where juvenile fish abundance is high and where habitats capable of supporting increased recruitment can be found. We also support the roll out of monitoring technology on-board vessels to ensure compliance and streamline robust data collection - Marine Scotland have themselves already found that Remote Electronic Monitoring delivers effective compliance and that vessels without revert to past behaviour¹⁹.

We applaud the efforts to develop and trial more selective fishing gear. We also welcome the Scottish Fishermen's Organisation trial mobile app to record areas of high bycatch and provide other vessels with the information they need to avoid them²⁰. Clearly this is the first step to delivering item 4 above. However, without proper enforcement and penalty for continued discarding, there is no incentive to record or avoid areas where bycatch is likely.

Moreover, we strongly believe that none of this will have a meaningful impact or lead to any change in the status of an already depleted marine ecosystem and condition of fish stocks, without transparency on what is being caught and what is being discarded.

THE EVIDENCE PRESENTED HERE PROVIDES STRONG EVIDENCE OF ILLEGAL DISCARDING CAUSING SERIOUS OVERFISHING OF DEPLETED FISH STOCKS.

There is already a requirement to “Record all discarded quantities by fish species under the Landing Obligation exemptions and which exemption is being utilised”. However, to the best of our knowledge this is not being followed. The continued decline of fish stocks in Scotland's west coast waters has been on Fisheries Minister Fergus Ewing's watch but there is still time to leave a legacy of change and restoration.

WE CALL ON FISHERIES MANAGERS AND THOSE SELLING SCAMPI TO END THE WASTEFUL PRACTICE OF DISCARDING IN THE SCOTTISH NEPHROPS FISHERY, END THE OVERFISHING OF THESE STOCKS AND ENSURE FULL COMPLIANCE WITH THE LANDING OBLIGATION BY,

1. REQUIRING ALL BOATS ARE FITTED WITH ADEQUATE VESSEL MONITORING TECHNOLOGY,
2. REQUIRING THAT BYCATCH QUOTA MUST BE USED FOR LANDINGS & RECORDING OF BYCAUGHT FISH ONLY,
3. ESTABLISHING A SPATIAL PLAN TO AVOID INSHORE NURSERY & SPAWNING GROUNDS, & CATCHING THESE SPECIES IN THE FIRST PLACE.

This report was produced as an Open Seas, Our Fish collaboration.

Please contact the authors crew@openseas.org.uk with any comments or more information on the issue of discarding.



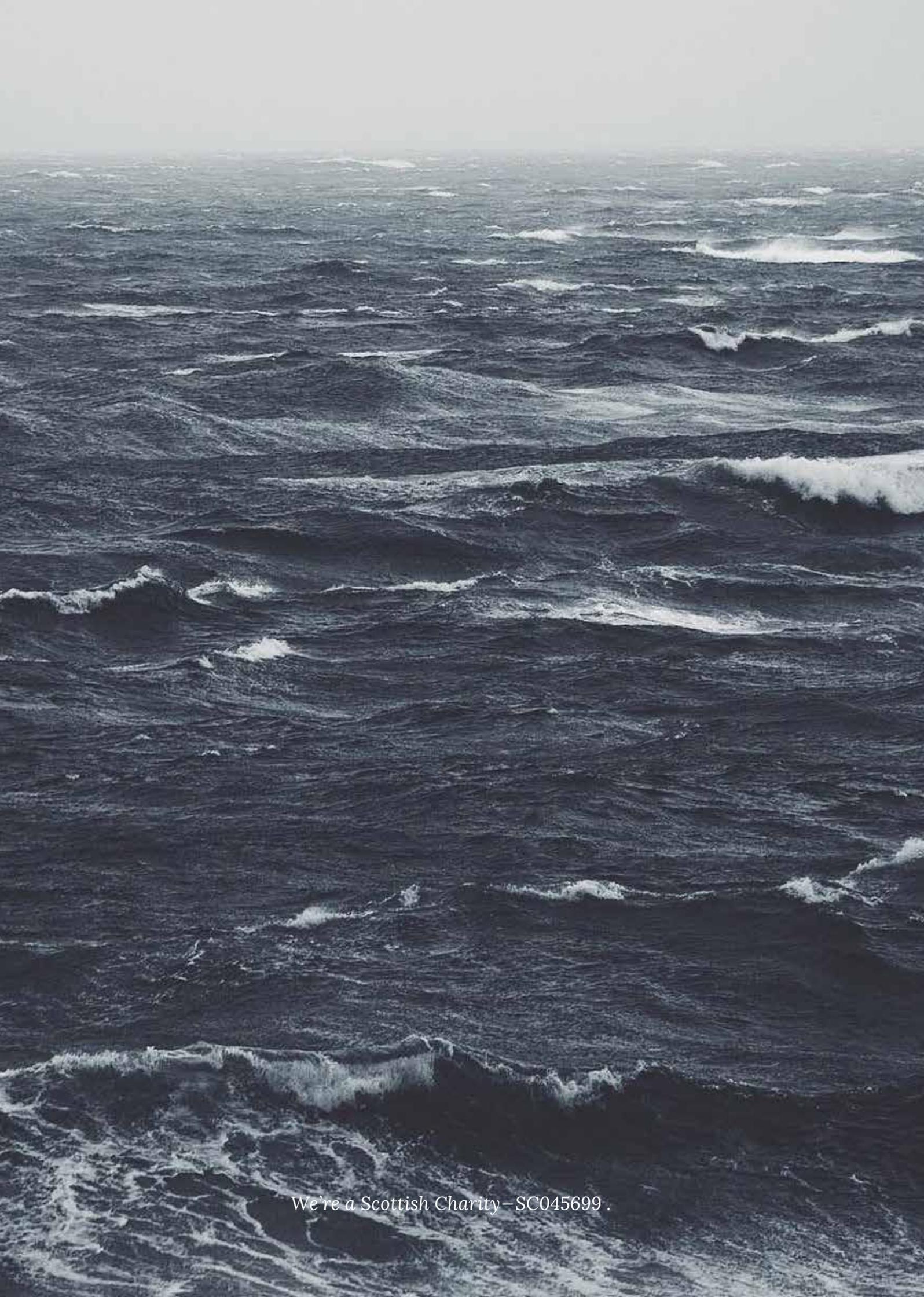
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