

James Merryweather submission of 13 August 2022

PE1951/B: Reinstate inshore coastal limit on the use of dredge and trawl fishing gears

I wish to report unpublished post-1984 observations which appear to correlate with the ending of the 1883-1984 three-mile limit and strongly indicate that as a likely cause.

From 1976 until 2009, I was a member of a team of academics from the Department of Biology at the University of York attending an annual marine biology field course at the renowned Universities Marine Biological Station, Millport. Thus, we were in the heart of the Firth of Clyde which is exemplified for discussion in the [Scottish Government's response](#) to PE1951. As a biologist, not a fisheries specialist, I will examine only this significant passage:

“References to the decimation of inshore ecosystems and fish populations are not accurate. While it is fair to say the Clyde ecosystem has changed since the start of more intensive fishing, it is not the ecological desert some portray it to be. The size distribution of the main commercial fish species has certainly altered, with a decline in the larger individuals that once would have made up a significant part of biomass. In addition, the species composition has also changed, with a focus now on whiting rather than cod or haddock.”

The first sentence is unclear. Nowadays, the word ‘decimation’ (which denotes a tenth) has become partially altered. In the present context I infer that the Scottish Government has used it according to its ambiguous modern meaning: elimination.

Until 1984, the Millport field station provided University of York courses with numerous boxes containing mixed fishes, sufficient not only to teach students identification skills, but also to enable them to conduct small research projects, e.g. parasite infestations of cod. I recall that in those wooden boxes – two stacks piled about seven feet high – we found, to our immense educational benefit: Cod, Poor Cod, Haddock, Whiting, Tadpole Fish, Plaice, Long Rough Dab and other pleuronectids,

Angler (Monk) Fish, Pogge, Cat-shark, Mackerel, Horse Mackerel and perhaps others I do not remember.

From around 1984, the change in the box stacks, if illustrated as a bar chart, would show a steady decline. Over the next decade, there were fewer and fewer boxes and fewer and fewer fish species. Eventually, the chief technician announced that they were unable to supply our usual fish collection. The Clyde no longer provided the fishes it always had done and post-1995 our students simply could not learn about fish – apart from the Pogge.

In the early days, batches of students were taken out on the research vessel *Aplysia* when it collected benthic specimens with a small trawl net, a wide variety of fascinating marine life with which the students could interact for the first and perhaps only time in their lives. I vividly recall the chattering delight of young people sorting the pile of animals on the deck and later surrounding the holding tanks, jostling for limited space. During quiet times there was usually somebody examining with fascination previously undreamt-of creatures.

But over the years, like the fishes, benthic biodiversity and quantity declined. By the end of the twentieth century, poor catches and our increased awareness that the marine environment was no longer as bountiful as previously, that exercise was also curtailed.

Although the detrimental impact of biodiversity losses on biology students is far from insignificant, here it is used primarily to illustrate the overall environmental harm done by removing the three-mile limit. The overall degradation of Clyde biodiversity from various causes and potential ecological imbalances caused by overfishing near the top of the ecological food chain severely (albeit anecdotally) challenges the passage quoted above.

In University of York biologists' practical experience, and the experience of the highly respected marine biology research station based in the Clyde, Clyde fish populations began to change and decline coincidentally with removal of the three-mile limit.

The Clyde ecosystem has indeed changed since the 1984 resumption of inshore trawling, but does anybody seriously portray it as an “*ecological desert*”? Desertification is a little extreme, and better descriptors might

be 'degraded' or 'compared with its condition in the past, relatively impoverished'.

My academic colleagues and I witnessed first-hand, changes in the species composition of fish and other animals, from an ecological perspective detrimentally. In our experience, however, the change in fish species composition was not illustrated by whiting replacing other gadids. All commercially significant species disappeared from our provision, leaving only Pogge, while *Nephrops*, if "still present", became fewer and smaller, contradicting the situation presented in the Scottish Government response.

I submit that, as illustrated by these observations and strikingly by the Lamlash no-take zone (Stewart *et al.*, 2020), the old three-mile limit was significantly beneficial for marine ecosystems, including those that fishermen wish to exploit, and I recommend that – for the benefit of all – a three-mile limit or similar expedient be once again established.