

Closure of Clyde spawning ground 'too little, too late' to help floundering cod stocks

August 14 2015, by Stuart Forsyth



Measures introduced over a decade ago to protect spawning cod in the Firth of Clyde were "too little, too late", a new study finds.

Data published in the *ICES Journal of Marine Science* showed no evidence that a seasonal closure of part of the Firth had led to local recovery of [cod](#) numbers or a reduction in overall mortality.

The researchers from the University of Glasgow and Marine Scotland Science say implementing spawning closures on nearly collapsed stocks may be why such measures often appear to have been ineffective.

The annual closure of the spawning ground was introduced in March 2001 to allow cod to reproduce without being caught by trawlers, while still allowing the targeting of scampi and scallops, in the greater part of the area.

Before the closure there was a clear seasonal peak in fishing effort corresponding to the spawning time of cod in this area with high catch rates. Placing the Clyde off limits was also intended to avoid an increase in fishing activity as a consequence of a spawning closure introduced in the Irish Sea in 2000.

Joanne Clarke, a PhD student who led the study under the supervision of Dr Peter Wright of Marine Scotland Science and Dr David Bailey at the University of Glasgow, said: "Fish that congregate at predictable locations and times to spawn are often vulnerable to over-exploitation.

"Seasonal closures of fishing grounds have been implemented around the world in an attempt to alleviate such impacts, but the effectiveness of these measures is rarely tested."

Previous studies using genetics, tagging and microchemistry found that cod inhabiting the Clyde are reproductively isolated from other resident groups of the West of Scotland.

The researchers compared data on the number of adult fish regularly

found in the area and compared it to data on the two other sub-populations of cod off the west coast of Scotland.

Ms Clarke added: "Mortality may have remained high because young cod are still caught as a bycatch in the scampi fishery in the area, and the predation rate may have increased due to an expanding whiting population.

"The spawning closure is justified on the basis that it has reduced targeted fishing effort on [spawning](#) cod, and prevents displaced [fishing effort](#) from the Irish Sea.

"So in that respect, while we don't know the full reasons preventing cod recovery, the least we could do is allow the remaining fish to spawn undisturbed.

"We cannot change the past, but we can address the future by managing populations within an ecosystem context.

"Spawning closures are not enough to manage populations when numbers are too low to withstand environmental fluctuations and additional sources of mortality. The measure appears to have been too little, too late."

More information: "Evaluating the effectiveness of a seasonal spawning area closure." *ICES J. Mar. Sci.* first published online August 12, 2015 [DOI: 10.1093/icesjms/fsv144](https://doi.org/10.1093/icesjms/fsv144)

Provided by University of Glasgow

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