

## Trends in sea anglers' catches of trophy fish in relation to stock size.

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### ABSTRACT

Many marine fish stocks worldwide are reported to be in decline and participants in recreational fisheries commonly complain that their catches are declining in size and number as a result. In many fisheries, however, it is difficult to investigate such claims because established data collection programmes are lacking. We sought to investigate perceived and actual trends in anglers' trophy fish catches within a marine recreational fishery, and to investigate whether catches bore any relationship to abundance trends in target stocks. Temporal changes in catches, as perceived by participants in the recreational fishery, were assessed qualitatively using a structured survey. Subsequently we investigated two previously unused sources of sea anglers' trophy fish catch data available for Wales, UK (national angling club and angling magazine reports) and extracted reports for a 27-year period. We assessed species-specific trends in the numbers and sizes of trophy fish reported, and found strong temporal declines in the numbers of trophy thornback ray *Raja clavata* and cod *Gadus morhua* reported, as well as a decline in total reported trophy fish. The weight of the heaviest thornback ray reported each year had also declined significantly with time. These trends also were most frequently mentioned by participants in the recreational fishery. Significant declines in cod and thornback ray stocks in the region have been reported, which would explain the reduction in anglers' catches of trophy-sized individuals. As fishing pressure has been shown to reduce the numbers and sizes of individuals in a population we hypothesised that the numbers and sizes of trophy fish caught by anglers would correlate positively with stock abundance. In the absence of stock assessment data we used commercial landings-per-unit-effort (LPUE) figures to give a relative indication of stock abundance trends for the region. However, few correlations of trophy fish catch data with commercial LPUE were found, which is likely attributable to limitations of the LPUE data. Nevertheless, the negative trends in catches of trophy fish by anglers are striking and provide an additional means to monitor gross changes in populations of species vulnerable to over-exploitation.

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