

{rokbox title=|Location of the two Nephrops trawling areas with sampling stations imposed (A) north eastern Irish Sea and (B) Kattegat :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-efecto-arrastr e-dieta-especies-explotadas-hinz-et-al-2017-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-efecto-arrastre-dieta-especies-explotadas-hinz-et-al-2017.jpg{/rokbox}

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[Stable isotopes reveal the effect of trawl fisheries on the diet of commercially exploited species.](#)

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Abstract: Bottom trawling can change food availability for benthivorous demersal species by (i) changing benthic prey composition through physical seabed impacts and (ii) by removing overall benthic consumer biomass increasing the net availability of benthic prey for remaining individuals. Thus trawling may both negatively and positively influence the quantity and quality of food available. Using $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ we investigated potential diet changes of three commercially exploited species across trawling gradients in the Kattegat (plaice, dab and Norway lobster (*Nephrops*)) and the Irish Sea (*Nephrops*). In the Kattegat, trawling affected primarily the biomass of benthic consumers, lowering competition.

Nephrops

showed significant positive relationships for $\delta^{13}\text{C}$ and a domed relationship for $\delta^{15}\text{N}$ with trawling. In the Irish Sea, intense trawling had a negative effect on benthic prey. $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ thus showed the inverse relationships to those observed in the Kattegat. Plaice from the Kattegat, showed a significant relationship with trawling intensity for $\delta^{13}\text{C}$, but not for $\delta^{15}\text{N}$. No relationship was found for dab. Changes of $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ correlated with changes in condition of species. The results show that the removal of demersal competitors and benthos by trawling can change the diets of commercial species, ultimately affecting their body condition.

Keywords: Ecosystem ecology, Food webs, Ichthyology, Marine biology, Stable isotope analysis