{rokbox title=|Maps of benthic state for (a) RBStot and (b) RBSsen :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-assessment-bottom-trawl-calero-2026-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-assessment-bottom-trawl-calero-2026-et-al.jpg{/rokbox}

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Assessment of Bottom Trawl Impacts on the Status of Seabed Communities in European Seas
.Fish and Fisheries.Volume 27.Issue 2.March 2026. https://doi.org/10.1111/faf.70054

Abstract: Bottom trawling affects seabed habitats, but its large-scale impacts remain poorly quantified. Assessment of trawling impacts is essential to support monitoring and achieving sustainability objectives under international conventions, sustainable development goals, and seafood certification programs. We present a Europe-wide quantitative assessment of bottom trawling impacts, accounting for regional seabed-community sensitivity drivers, across the Baltic, Atlantic, Mediterranean and Black Sea continental shelves. Using two risk-based indicators of seabed status—Relative Benthic Status determined as benthic community biomass relative to seabed fauna carrying capacity (RBStot) and RBSsen (biomass of the 10% most sensitive fauna relative to carrying capacity)—we found substantial regional and habitat differences. The Black, Baltic and Aegean-Levantine Seas showed low trawling intensity and high seabed status across habitats. In contrast, the Western Mediterranean, Ionian and Central Mediterranean and Adriatic Seas were the most severely impacted. Trawling affected the sensitive species biomass fraction more strongly than the total community biomass. RBStot was in good condition (here chosen as RBS > 75% for epifauna) for over 79% of habitat-ecoregion combinations. In contrast, RBSsen met this threshold in only 46% of these. A strong correlation emerged between the mean trawling intensity and RBStot and RBSsen, allowing the use of SAR to estimate ecosystem status. This relationship can support decisions on where, and by how much, SAR reductions are needed to achieve good environmental status in regions where

no detailed assessment is available. Our approach provides a quantitative framework to balance fishery production with ecosystem sustainability, offering tools for environmental and fisheries management in Europe.

Keywords:beam trawl,benthic ecosystems,demersal seines,ecosystem approach to fisheries management,impact assessment,mobile bottom gears,otter trawl,scallop dredge.