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## Evolution of hake mislabeling niches in commercial markets

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Mislabeling of fish species at landing and along the commercial chain has been detected in many countries. In the case of hake trade, identification of different species has been and continues to be a challenge. In this work we have analyzed the evolution of commercial hake mislabeling during the last decade, focusing on the Spanish market, the world's largest one for hake. DNA-based species identification by PCR amplification and sequencing of mitochondrial genes was carried out in 234 commercial samples. The result was compared with the species stated in the product label, and with 147 samples analyzed in previous works. Significant changes were found throughout the decade for the proportion of mislabeled products, with differences between fresh and frozen products and a general decrease in frozen products. Higher mislabeling in unrecognizable versus morphologically recognizable products strongly suggests deliberate fraud. The diversity of substitute species increased significantly in the period studied, even the non-hake ones. Economic losses for the consumer, estimated from the differences in price between the stated species and their substitutes, seemed to decrease in the last years. The results were interpreted in terms of fluctuations in hake prices and annual catch. Since correct identification of fish species is essential to ensure the good management of species and to provide a reliable market to the consumers, implementing different control points from the landings to the selling points is indispensable.

### Biography

Marta Munoz Colmenero had a Degree in Biology from University of Alcalá de Henares (Spain) and acquired the Master in Experimental Techniques Applied to Management and Conservation of Biological Resources from University of Oviedo (Spain). Nowadays, she is in the last year of her PhD studies at the University of Oviedo, within which she spent three months in the University of Southern California (USA). She has participated in five research projects, has published five papers in reputed research journals and has displayed her work in the Congress ECBOL-3 in Belgium and EFFOST-2013 in Italy.

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