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José Manuel González-Irusta, Joan E Cartes, Antonio Punzón, **David Díaz**, Luis Gil de Sola, Alberto Serrano, 2022.

[Mapping habitat loss in the deep-sea using current and past presences of \*Isidella elongata\* \(Cnidaria: Alcyonacea\).](#)

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**Abstract:** The bamboo coral *Isidella elongata* is an engineering species that forms a characteristic biogenic habitat in the bathyal mud of the Mediterranean Sea. This habitat has been severely reduced in recent decades due to trawling impacts, and there is a growing concern about its conservation status. In this work, the habitat loss of

*I. elongata*

was computed using a novel approach that combines the realized niche of the species with the estimation of its past distribution (before trawling) to delineate potential areas of habitat loss with different levels of uncertainty. The realized niche of the species was modelled using only live colonies and including trawling effort as explanatory variable whereas the past distribution was estimated also using the leftovers of dead colonies as presences. Trawling effort had a statistically significant negative effect on the extent of the realized niche of

*I. elongata*

, confirming previous results on the impact of this pressure on its distribution. The novel approach used in this work has allowed us to map for the first time several areas of potential habitat loss for *I. elongata* in the studied area, opening new opportunities to provide this essential information for future management and restoration actions of vulnerable marine ecosystems worldwide.

**Keywords:** coral gardens, habitat loss, *Isidella elongata*, potential niche, realized niche, trawling, VME