{rokbox title=|Barca de arrastre :: Foto: Beatriz Guijarro (COB-IEO)| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-manolo-hidalgo-ciannelli-et-al-2013-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-manolo-hidalgo-ciannelli-et-al-2013.jpg{/rokbox}

Lorenzo Ciannelli, Jonathan A. D. Fisher, Mette Skern-Mauritzen, Mary E. Hunsicker, **Manuel Hidalgo** ,
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Theory, consequences and evidence of eroding population spatial structure in harvested marine fishes: a review
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Harvested fish stocks in a changing environment
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Abstract: In marine populations, spatial structure arises over a wide range of scales and forms hierarchical aggregations. Changing spatial structure can alter the demographic and life history trait variation within populations and subject individuals to both novel environmental conditions and interspecific interactions. Thus, changes in the spatial structure of marine populations can be a prelude to further changes in abundance and can affect the resilience and recovery potential of populations following anthropogenic and environmental perturbations. These observations underscore the importance of studying the spatial ecology of marine fish populations in order to (1) understand the underlying mechanisms that can lead to rapid alterations in population abundance and community interactions, (2) provide indicators of stock health, and (3) characterize the consequences of changing spatial patterns on population susceptibility to exploitation and environmental variability. Here, we synthesize the interacting factors that influence the formation, maintenance and erosion of spatial structure in marine fish populations and identify the further consequences of such erosion at the population and community levels. We emphasize human driven changes of population spatial structure for 3 levels of population genetic aggregation that are common in fisheries management scenarios, namely sympatric populations, metapopulations and panmictic populations. Case studies are presented for each level of aggregation. Throughout our review, we both summarize the factors that link spatial and temporal dynamics in marine populations and highlight the management and conservation implications of such linkages.

Keywords: Spatial structure, Spatial ecology, Population dynamics, Fisheries