

{rokbox title=| Number of papers in the Marine Ecology literature published annually since 1894 that either specifically refer to Marine Functional Connectivity (light blue, right axis) or investigate it indirectly (dark blue, left axis) :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-shaping-research-marine-hidalgo-2026-thumb-et-al.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-shaping-research-marine-hidalgo-2026-et-al.jpg{/rokbox}

Audrey M. Darnaude, Susanne E. Tanner, Andreu Blanco, Anna M. Sturrock, Yael Teff Seker, Jonne Kotta, Tamar Guy-Haim, Francisco R. Barboza, **Manuel Hidalgo**, Katell Guizien, Jerneja Penca, Lucía López-López, Maria Beger, Federica Costantini, Sophie Arnaud-Haond, Cynthia Riginos, Kris Hostens, Gil Rilov, Stelios Katsanevakis, Ewan Hunter, 2026.

Shaping

research in marine functional connectivity for integrated and effective marine science and management

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Abstract: Effective knowledge of ecological connectivity at sea and at the land–sea interface is key to supporting global policy goals to conserve and restore ocean biodiversity and function. However, a persistent lack of commonality in terminology and understanding around the concept of connectivity in marine ecological studies hampers its integration across disciplines, and its application in spatial planning and policy. Building on an extensive literature review, we clarify definitions and subcategories of marine connectivity, and propose a unified conceptual framework for Marine Functional Connectivity (MFC) research to support the integration of multidisciplinary scientific knowledge into management and policy. We identify key challenges and future directions for advancing this emerging field, bringing together most strands of marine science to understand changes in biodiversity and functional interdependencies between habitats and regions. Embedding this new integrated MFC research at the core of marine environmental science promises to improve significantly predictions of environmental and socio-economic change and the sustainable use of ecosystems and resources at sea and at the land–sea interface.

Keywords: marine biodiversity, marine resources, functional ecology, marine spatial planning, ecosystem services, environmental conservation.