

On the effectiveness of marine protected areas for predator-prey communities with differential mobility

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Abstract

Marine protected areas (MPAs) are regions in the ocean where fishing is restricted or prohibited, that complement the fishing grounds (FG) where fishing is allowed . MPAs are used to manage fisheries for conservation of species and habitat restoration, while maintaining the economic output of the fishing enterprises.

In this talk, I will focus on the interplay between fish mobility and the fish abundance in marine communities where both predator and prey species are mobile and have commercial value. Specifically, I will address the two main ecological questions:

(i) Does increased mobility always have a stabilizing effect on the community? (ii) Is increased mobility always equalizing, i.e. bringing the MPA to FG density ratio closer to unity?

The talk is based on a recent paper by S. S. Pilyugin et al, *Theoretical Population Biology*, Vol. 110, pp. 63-77, 2016.