

1116-92-414

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Kidder Hall, Corvallis, OR 97330. *Marine protected areas with mobile predator and prey.*

Marine protected areas (MPAs) are regions in the ocean where fishing is restricted or prohibited. The effects of MPA size, shape, and other characteristics on fish populations are still poorly understood. Conversely, the ecological characteristics of the protected fish can impact the effectiveness of MPAs. Here we investigate how predator-prey interactions and fish mobility influence MPA effectiveness, measured as the ratio of the steady state fish densities inside and outside the MPA. In particular, we consider whether fish mobility has an equalizing effect in the sense that the fish densities inside and outside the MPA tend to each other. We also show that increased fish mobility tends to stabilize the system. (Received August 31, 2015)