

# Analysis of the consequences of individual adaptive behavior on population stability: The case of optimal foraging **Análisis de las consecuencias del comportamiento adaptativo individual sobre la estabilidad poblacional: El caso del forrajeo óptimo**

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Early work based on the Dynamical Systems Theory demonstrates that the larger the number of interacting populations, the system tends to be more unstable. Nevertheless, empirical evidence indicates that natural populations more often exhibit stable dynamics, in spite of being embedded into complex communities. Adaptive behavior of individuals is found to be one of the mechanisms promoting population stabilization. In this work, we analyze the theoretical advances about the role of optimal foraging (FO) as a stabilizing force of population dynamics, in model communities with different levels of structural complexity. Our analysis is organized around three central points: i) what is the control system against which it is compared the stability of a population whose individuals exhibit FO?, ii) what stability concept is being used?, and iii) how the assumptions of FO are incorporated within the rules governing the dynamics of populations? Based on our analysis, we specify the points that s