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How do movement costs affect the dynamic and evolutionary stability of movement strategies? We consider a simple two-patch ecosystem model in which species' growth is governed by the logistic equation, and species move between patches by using various movement strategies. We assume that species differ only in their movement strategies. We allow the strategies to change on a time scale slower than the population dynamics and ask how many species can coexist in the system. We analyze this coupled non-linear ordinary differential equation model to determine not only the ecological stability of the populations but also the evolutionary stability of the strategies. We compare how the incorporation of two different types of costs affects the original analysis. To accomplish this, we use ideas from evolutionary game theory and dynamical systems. (Received September 25, 2012)