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Modeling motives for movement: theory for why animals migrate

Thursday 8 March 2012 1 – 2pm

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Gould Seminar Room (Room 235), Building 116, Daley Road, ANU



Migration (the round-trip movement of organisms, usually on an annual cycle) is a widely used strategy for dealing with a seasonally variable environment. Most discussion of migration tends to be taxonomically restricted (e.g. “bird migration”, “fish migration”), while less work has been done to draw comparisons across taxonomic groups. As a result, broad questions such as ‘what types of conditions generally favor the evolution of migration?’ have gone unanswered.

In this talk I will present some of my dissertation research, in which I use a combination of analytic models and individual-based simulations to study migration as an adaptive behavior and to understand what ecological conditions select for migration. I will describe the types of motivation drive migration and how these combine into different round-trip migration patterns. I’ll use the

example of partial migration to discuss why understanding migration motivation matters. Finally I’ll show how the spatial distribution of resources and information availability can influence the evolution of migration under different motivations. I will discuss these theoretical results in the context of observed empirical patterns of animal migration across various taxonomic groups.

Presented by

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