

What are the interesting questions in behavioral ecology today?

Questions in behavioral ecology

Classic topics

- field studies of sexual selection in birds
- field studies of cooperation and helping
- optimal foraging models (usually central-place on patchy resources)
- game theory models of cooperation (usually prisoner's dilemma) or fighting
- communication, parental care, competition, parasitism

Questions in behavioral ecology

New opportunities

- Large databases of gene sequences and expression, and generally molecular tools
- Advanced computing
- Extensively studied model organisms
- Good support for interdisciplinarity
- Better understanding of complexity and interaction networks

Questions in behavioral ecology

New questions?

- Behavioral syndromes: individual variability and is it adaptation or error?
- Plasticity: gene-environment interactions and what causes trade-offs?
- Emergence: non-intuitive and complex interaction effects
- Evolutionary dynamics: more complex models
- Comparative studies: better controlled study of the ecological contexts that lead to particular behaviors; and how general are explanations?

Questions in behavioral ecology

Uncharted territory

- Mechanisms of behavior: neural circuits, gene-to-behavior mapping
- Multi-species interactions in ecology
- Genetic and developmental constraints: how constraining are they?
- Adaptationism: what causes non-adaptive behaviors, and how frequent are these?