

Behavioral Ecology

© 2020, SimBio. All Rights Reserved.

Contents

Section 1: So Many Choices

Evolution selects for behaviors that maximize the difference between benefits and costs.

- The Hows and Whys of Behavior
- To Forage Is To Choose
- Optimal Foraging Theory
- Testing the Optimal Foraging Model
- Predation Risk Affects Foraging Decisions
- Urban Birds Respond to Predation Risk
- Beyond Distance: Ant Colony Size
- Section Summary
- Ask Your Instructor

Section 2: Behavior in the Marketplace

Optimal foraging, prey switching, the marginal value theorem.

- What to Eat?
- Prey Profitability
- Choosing What to Eat
- Do Animals Choose Prey Optimally?
- Optimal Loads and the Marginal Value Theorem
- Optimality Models: Useful Despite Limitations
- Optimality Models Illuminate Human Behavior
- Section Summary
- Ask Your Instructor

Section 3: Playing Games

Game theory, conflict, evolutionarily stable strategies, Hawk-Dove game, territoriality.

- Conflict: Costs and Benefits
- Hawk-Dove Game
- Which is Better: Hawk or Dove?
- Hawk-Dove-Bourgeois Game
- Bourgeois Butterflies
- Bower-Wrecking Bowerbirds
- Section Summary
- Ask Your Instructor

Section 4: Family Matters

Sexual selection, sexual conflict, parental investment, and mating strategies.

- All Kinds of Families
- Anisogamy
- Sexual Selection
- Female Choice
- What Females Want
- Raising the Kids
- So Many Mating Systems

- Sexual Conflict
- Section Summary
- Ask Your Instructor

Section 5: Cooperation

Cooperation, Eusocial Systems, and Kin Selection

- The Problem with Altruism
- Blood-Thirsty Bats
- Reciprocity: One Explanation for Cooperation
- Why Sound the Alarm?
- Relatedness, Kin Selection, and Hamilton's Rule
- Eusocial Systems
- Section Summary
- Ask Your Instructor