

Study Guide for Quiz 3

As noted in the course information handout, the third exam is cumulative. However, it will focus primarily on material from the last third of the class, beginning with Lecture 13, Population Growth. Material from the first two-thirds of the class will not be tested at the same level of specificity as on previous tests.

Assigned readings:

Krebs: Chapter 28: Pages 583-590
Chapter 9: Population Parameters
Chapter 10: Demographic Techniques: Vital Statistics
Chapter 11: Population Growth
Chapter 12: Species Interactions: Competition
Chapter 22: Pages 447-448
Chapter 13: Species Interactions: Predation

Articles: Gilg O. *et al.* 2003. *Science*. **302**:866.
Turchin P. *et al.* 2000. *Nature*. **405**:562.
Tilman D. 2000. *Nature*. **405**:208.
Ranta E. 2003. *Science*. **301**:171

There is a lot of information in the textbook that we did not cover in lecture. While the test is most likely to focus on material we discussed in class, any of the material from the assigned text is fair game.

Concepts:

- Exponential growth
- Carrying capacities and the logistic equation
- Ecological footprint
- Life tables
- Survivorship curves
- Resource vs. interference competition
- Lotka-Volterra isoclines for competition
- Tilman's approach to competition
- Gause's and Huffaker's experiments
- Fundamental vs. realized niches
- Competitive exclusion principle
- Lotka-Volterra and Rosenweig-MacArthur isoclines for predation
- Functional response curves
- Conditions for coexistence under competitive and predator-prey interactions