

QUIZ 3 - STUDY GUIDE 2009

Tuesday, November 24th, 2009; 11:00am-12:30pm; Walker Memorial

Approximately 50% of the quiz will cover new material: everything from **Lecture 14** (Human Population Growth on November 3rd) through **Lecture 18** (Prof. Sterman's Lecture on November 19th) including competition and the niche, predation, and biogeography. The remaining 50% will be cumulative, and may cover anything from **Lecture 1** through **Lecture 13**. This includes the early earth, redox reactions, energy transformations and metabolism, biogeochemical cycles, the carbon cycle, primary and secondary productivity, Redfield ratio and limiting factors, ecosystem experiments, food webs, population growth, chemostats, and life tables. Like Quiz 1 and 2, the questions will be primarily short answer, which can be responded to with a few sentences, a sketch with a description, or a brief calculation. We could also ask you to interpret a graph/data or give you a discussion question. Use Problem Sets 1-3, the Quiz 3 Study Questions, the Lecture Notes, and the Lecture Handouts as a top priority for studying. Make sure you are familiar with the articles that have been assigned. **Remember to bring a calculator!**

You are responsible for the following readings in addition to those listed in the study guides for Quiz 1 and 2:

TEXTBOOK (Smith and Smith)

- Lecture 14: pg. 741-744, pg. 762-766, pg. 171-180, pg. 181-193
- Lecture 15: Chapter 14
- Lecture 16: Chapter 15, pg. 300-304

HANDOUTS and ARTICLES: These all contain important material. This list is not all-inclusive but highlights some of the most important readings.

- How Many Billions To Go, Smil 1999
- Humans as the World's Greatest Evolutionary Force, Palumbi 2001
- Population Growth and Earth's Human Carrying Capacity, Cohen 1995
- Agricultural Sustainability and Intensive Production Practices, Tilman et al. 2002
- National Natural Capital Accounting with the Ecological Footprint Concept, Wackernagel et al. 1999
- Competition Between Two Estuarine Snails: Implications For Invasions of Exotic Species, Byers 2000
- Are Lemmings Prey or Predators, Turchin et al. 2000
- Cyclic Dynamics in a Simple Vertebrate Predator-Prey Community, Gilg et al. 2003
- Vole Stranglers and Lemming Cycles, Hudson and Bjørnstad 2003
- Impacts of Biodiversity Loss on Ocean Ecosystem Services, Worm et al. 2006
- Biodiversity Hotspots for Conservation Priorities, Myers et al. 2000

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