

**Study Questions and Reading Guide: Kareiva & Marvier, Chapter 1**  
**Conservation Biology**  
**Spring 2011**

**Reading:** Please take a moment to get to know the textbook authors; brief biographies are given on pp xxviii-xxix (like a superbowl!). The first chapter is a nice overview and gives you a good introduction to the authors' point of view and their very nice fluid writing style.

**I. Terms to know** (there are others that I expect you already know (e.g., "extinction")):

Background extinction rate	Functionally extinct and ecological simplification	"paper park"	overexploitation
Nitrogen cycle	Dead zones		

**II. Questions:**

1. The world population growth rate has dropped from about 0.021 new individuals/(individual \* year) in the late 1960s to about 0.012 (same units) today. In the 1960s, the human population increased by about 201,000 people per day and today it increases by about 223,000 per day. How is that possible if the growth rate has decreased? What are major socio-economic factors that tend to decrease population growth rates?
2. What is the IPAT model? What is meant by the technology factor in this model and why might it vary up or down? What do you think of the model?
3. How might the technology factor of the IPAT relate to the Kuznets curve? Make a good argument for why the Kuznets curve might be invalid.
4. Why do reduced consumption campaigns usually fail? Are there alternatives?
5. We will look at the Pleistocene extinction causes later in the course.
6. North American bison went through what is called a bottleneck in the late 1800s. From what approximate population size and to what size was the population reduced when it hit its minimum size?
7. Much of chapter 1 is doom and gloom. Read the text box 1.1 (p 12) carefully and reflect on it and what it says about human nature. One goal of this course is to think about ways to effectively communicate strategies that result in biological conservation.
8. We will discuss global climate change late in the course.
9. Worm et al published an article in *Science* in 2006 that predicted a collapse of global fisheries by about 2050. Explain this model and the criticisms of it. How is it possible that natural variation in fish populations could cause them to incorrectly believe that a fishery had

collapsed? For some additional background on this, listen to the NPR story on the stripped bass fishery, link <http://www.npr.org/2011/01/25/133183300/atlantic-weather-may-be-key-culprit-in-fish-decline> and also linked on the website. Relate this to what you read in box 1.1.

10. What is the Anthropocene? Read the paragraph at the top of page 20 very carefully and reflect on its meaning. Is it consistent with your values? Be ready to talk about this.

11. The final section (Have Humans Ravaged Nature?) encapsulates the main thesis of the text and what the authors believe is the way forward for conservation. Be ready to state this thesis, this path, and your thinking about it.

12. Answer both discussion questions.