

EEB 208 (Introduction to Conservation Biology)

Sample Question Answers 2

Correct answers are highlighted in bold.

1. Which of the following are examples of exotic species?

- a. **Mongoose in Hawaii.**
- b. **Avian malaria in Hawaii.**
- c. European rabbits in France.
- d. **West Nile virus in North America.**
- e. **Purple loosestrife in Connecticut.**
- f. **A single house cat on Stephen's Island.**

This is primarily a straightforward test of whether you know some of the key examples of introduced species that we've talked about. Parts b and d specifically test whether you recognize that diseases can be introduced. Part f also tests whether you recognize that pets can be exotic species, and can have similar biological effects as released individuals.

2. A population viability analysis can include which of the following variables?

- a. **Birth rates.**
- b. **Current population size.**
- c. **Inbreeding.**
- d. **Catastrophes.**
- e. **Effects of weather.**
- f. **Death rates.**

This question is designed to test both whether you know the basic components of a PVA (parts a, b, and f), that stochasticity can be included (d), that more complex aspects of a species' biology can be incorporated (c), and that you can even include information on how the environment affects population dynamics (e).

3. Which of the following statements about the effective population size is true?

- a. It is usually 5-10 times greater than the total population size.
- b. It is usually 2-5 times greater than the total population size.
- c. It is usually larger than the total population size.
- d. It is usually the same as the total population size.
- e. **It is usually smaller than the total population size.**
- f. It can be calculated if you know the amount of heterozygosity in the population.

Parts a-e simply test whether you know that N_e is generally much smaller than the census N . Part f tests whether you recognize that, although heterozygosity is used to calculate N_e , it is not the only piece of information that you need.

4. Populations of chimpanzees and gorillas have declined dramatically in western Africa in the last two decades. What has caused these declines?

- a. **Habitat loss.**
- b. **Habitat fragmentation.**
- c. **Hunting for bushmeat.**
- d. Hunting for the pet trade.
- e. **Disease outbreaks.**
- f. Introduced species.

This question tests whether you know the examples discussed in the overkill lecture, and whether you recognize that multiple things can contribute to a species decline.

Short answer questions (one or two COMPLETE sentences per question).

5. Describe a situation in which you might want to move individuals of an endangered species and introduce them to an area outside their native range. What would this be called? Give an example. (3 points).

See notes for lecture 16, section 4A (iii). Examples include the Devil's Hole pupfish or one of many rare New Zealand birds.

6. Briefly describe the two paradigms for conservation biology identified by Graeme Caughley (4 points).

For this question you would need to describe the main features of the small population and declining population paradigms. See notes for lecture 12. Simply naming the two paradigms would only get you one point, because the question asks you to describe them.

7. Define the following terms (6 points).

These are basic terms that you should know – that they are important terms to recognize should be clear from the fact that two warrants an entire sub-section in my notes, while the third appears in the title for an entire lecture.

a) **biological control** – See lecture 11.

b) **genetic drift** – See lecture 14.

c) **ex situ conservation** – See lecture 16.