

Conservation Biology, EXAM 2 (100 points)  
09 November 2004

NAME: \_\_\_\_\_

Your exam will take place in two parts. The first will be a typical individual exam which should take you about 45-50 minutes. The second part will be about 25-30 minutes in groups of four students on a short set of additional questions. The score for your group exam will earn you additional points on your individual exam. See your syllabus for grading details.

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1. According to Bill Mannan, what percent of land in the world is under some type of reserve protection? [1 point]

About: a) 5% b) 10% c) 15% d) 20% e) 25%

2. One of the "F statistics" used by population geneticists ( $F_{ST}$ ; Wright's Fixation Index) varies from

\_\_\_\_\_ (in which all populations are identical) to \_\_\_\_\_ (in which all populations are genetically distinct). [2 points]

3. According to David Hall, what are the three subdisciplines that comprise the field of conservation biology? [3 points]

4. Where did all mountain lions most likely originate? [2 points]

5. What two rates comprise Levin's 1969 definition of metapopulations? [3 points]

6. Describe two criticisms of the metapopulation model. [3 points]

7. What are four ecological impacts of invasive species as listed by Kathy Gerst? [6 points]

8. What is the gas that contributes most to the natural greenhouse effect? [1 point]

9. In general, what parts of the globe seem to currently be warming fastest? [2 points]



18. A well-designed reserve system based on full knowledge of the needs of a focal species may still not ensure that species' persistence. According to Bill Mannan this failure may be because of "external influences". Give an example of an external influence that may affect Northern Spotted Owls. [2 points]
  
19. Describe three traits that may predispose a species to become invasive. [6 points]
  
  
  
  
  
  
  
  
  
  
20. Give an example of one effective and one disastrous biocontrol effort. What characteristics make for a good biocontrol agent candidate? [5 points]
  
  
  
  
  
  
  
  
  
  
21. How many years into the future did the PVA results for Florida pumas reported by Maehr et al.(2002; a book chapter assigned to you for 19 Oct) change from a high probability of population persistence to a low probability of persistence? [2 points]
  
  
  
  
  
  
  
  
  
  
22. Thinking back to the species-area curve, list two reasons why the number of species increase as the area sampled increases? [4 points]
  
  
  
  
  
  
  
  
  
  
23. Of what value are common (abundant and widely distributed) species and rare species (small, localized populations) in helping scientists decide whether or not to include a specific piece of land in a conservation proposal? Why? [3 points]
  
  
  
  
  
  
  
  
  
  
24. What is eutrophication? Through what activities (list two) do humans contribute to eutrophication? [5 points]

25. What are two pros and one con of connecting habitat patches with some type of corridor system? [5 points]

26. Why might alien species on islands be more detrimental to local biodiversity than the same alien species introduced on a large continent? [4 points]

27. Mechanistically, how does global warming lead to coral bleaching? Why is coral bleaching undesirable from a conservation biology point of view? [5 points]

28. In a short essay, explain "Preparing for Loihi" and how it is relevant to a course in Conservation Biology. [8 points]

GROUP QUESTIONS (please put all of your names here: \_\_\_\_\_ )  
Exam 2, 09 November 2004, 10 points per question, to be scaled down when added to individual exams.  
Answers consisting of bulleted lists tend to work best. You don't need to use complete sentences, but please make things legible.

1. What characteristics comprise an excellent oral presentation? For each student in your group, list two characteristics that they feel need improvement. [10 points]

2. Why won't some Hawaiian silversword species recover without human intervention even if invasive grazers are removed? [10 points]

3. Why does Bob Steidl believe the SDCP has been relatively successful? [10 points]

4. Please list the top five human effects on aquatic ecosystems (what is the effect and where is it occurring?). How could you mitigate each of these five effects? [10 points]