Conservation Biology, EXAM 1 (100 points) NAME:_____
28 September 2004

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. What year did the following events occur? Each event occurred during one of the following years: 1872, 1933, 1962, 1970, 1973. [1 point each, 5 points total]

   Aldo Leopold wrote Game Management:

   Endangered Species Act became law:

   National Environmental Policy Act became law:

   Rachel Carson wrote Silent Spring:

   Yellowstone National Park established:

2. What is currently the greatest threat to biodiversity? [2 points]
   a) exotic species
   b) hunting and trapping
   c) asteroids
   d) spread of disease and pathogens
   e) habitat loss

3. When considering elevation, where are most federal lands in Arizona? Why? [3 points]

4. According to your classmate Nicole Hallmark, why do some species that are not threatened or endangered end up on one of the CITES Appendix lists? [3 points]

5. What is an HCP and under what section of the Endangered Species Act does it fall? [4 points]

6. When is an EIS warranted (please also define the acronym)? [5 points]

7. Your Van Dyke textbook presented a way to value different pieces of biodiversity (usually from a species-specific point of view). Define the five components of this equation. [6 points]

$Rank_i = (D_i + U_i)(\Delta P_i/C_i)$

8. Explain tragedy of the commons in terms of costs and benefits to the individual and to society. Where does the "tragedy" come in? Give an example of a conservation issue directly related to the tragedy of the commons concept. [7 points]

9. Explain how, at the same time, extinction of species is both an integral part of biodiversity and currently a threat to its (biodiversity's) continued existence? [6 points]

10. Distinguish among, and provide examples of: [9 points]

Umbrella species --

Indicator species --

Keystone species --

11. How does the Madagascar Periwinkle Argument highlight the difference between intrinsic and instrumental values? [8 points]

12. Diagram and explain Rosenzweig's 3-step loss of biodiversity using the axes below. Be sure to label your axes appropriately. [9 points]

13. Explain what happened, and what Leopold professes to have learned, in *Thinking Like a Mountain*. [8 points]

14. The Endangered Species Act focuses on species as the unit of concern and protection. What are three positive and three negative implications of this approach? [12 points]

15. In a short essay response, describe a common way to estimate alpha diversity that was discussed in lecture. What components of diversity does this estimate take into account? How is this estimate incomplete or inaccurate? [13 points]

GROUP QUESTIONS (please put all of your names here:)
Exam 1, 28 Sept. 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. Explain how overall species richness might stay the same or actually increase in fragmented habitats.

2. Provide the name of a famous historical figure that is associated with each of the following: "romantic-transcendentalist ethic" and "resource conservation ethic." If these two individuals were to have a debate over dinner one evening, what would they have the hardest time agreeing about?

3. In the recent past, Los Angeles proposed placing plastic trees along medians in some urban areas. List two reasons each for why this is a good idea and why this is a bad idea. How would you argue that plastic trees are anathema to conservation biology?

4. Why might the National Park idea that arose in the late 1800's in the U.S. not work in other countries or time periods?