

Name: _____

Student Number (optional): _____

EEB 2208: INTRODUCTION TO CONSERVATION BIOLOGY – Midterm 2017

Explanations are given only for those questions that a large proportion of people got wrong. If you have questions about other things, please let me know.

1. B
2. B
3. A
4. A
5. A
6. B
7. A
8. B
9. A
10. B
11. B
12. B
13. A
14. B
15. A
16. A
17. B
18. A
19. A
20. B
21. B
22. B
23. A
24. B
25. B
26. B
27. B
28. B
29. B
30. B
31. B
32. B
33. B
34. A
35. B
36. A
37. A
38. A
39. B
40. A
41. B

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42. B – protecting genetic diversity in crop plants is something that we do to benefit human food production, not something we do to reduce extinction risk or biodiversity loss, so it is not really a part of conservation biology.
43. B
44. A
45. B
46. B
47. B
48. B
49. A
50. A
51. A
52. B – targeted vaccination schemes can be realistic because it is not always necessary to vaccinate all individuals in a population to stem the spread of a disease. In the example I gave, as little of 30% of the population need to be vaccinated if the right individuals (i.e., those most likely to spread the disease) are targeted.
53. B – West Nile virus primarily affects birds and only sometimes (relatively rarely) kills humans.
54. A
55. A
56. B
57. B
58. A
59. A
60. A
61. B – several habitats have undergone much larger losses than tropical rainforest. In class, I talked about prairie grasslands and showed a figure that presented data for several other habitat types.
62. A
63. B
64. B
65. B
66. B
67. B
68. A
69. A
70. A
71. A – The fact that most species are not yet threatened came up several times in the class. In particular, I showed figures when I was discussing mass extinctions that make clear that the majority of species are still in the Least Concern category (although it is correct that, over time, many of these species are predicted to become endangered).
72. B
73. B
74. A
75. B
76. A

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- 77. B
- 78. B
- 79. B
- 80. A
- 81. A
- 82. A
- 83. A
- 84. B
- 85. A

86. Four points for accurately labelling the graph. For full points you needed to get at least four of these five things right: labels for (a) area on the x axis, (b) species richness on the y axis, (c) z as a constant describing the slope of the dotted line, (d) $\log c$ (or c) as the point of intersection between the dotted line and the y axis, and (e) recognizing that area and size should be plotted on log scales. Knowing that c and z were constants was not enough – you need to know what those constants represent. The other two points were for showing that you can plot the starting patch size (A_1) on the x axis, then go up to the dotted line, and then left to the y axis to figure out the expected species richness (S_1). You can repeat this for the reduced patch size (A_2) to get the species richness after habitat loss (S_2). The difference ($S_1 - S_2$) is the amount of species loss due to habitat destruction. Note that going up to individual points, is not correct as you need to go to the averaged value that represents the entire sample of points (i.e., the dotted line).

87. The title refers to the five previous “mass extinctions” that have occurred during geological time, and suggests that we are now entering a sixth (1 point). This is arguably a good choice of title because multiple lines of evidence suggest that current extinction rates are similar to those during the previous mass extinctions (1 point). It is arguably a bad choice because most of those extinctions have not manifested themselves yet and current extinction levels are still much lower than during the mass extinctions (1 point). A common mistake on this question is that people confused the extinction rate (which is similar to that during past mass extinctions) with the actual number of extinctions (which is not similar ... yet).

88. Manette thinks that the community on the right has higher diversity because it has greater species evenness (more even numbers of each species) (1 point). I disagree because the community on the left has greater species richness (more species) (1 point). Either of these points of view is legitimate because species diversity can be measured in multiple ways that are often inconsistent (1 point).

89. a) Any verifiable example. Examples given in class include purple loosestrife, salt cedar (tamarisk), prickly pear cactus, and kudzu. Examples from any of the news articles I’ve tweeted about also would be valid. If you got this question marked wrong, but believe your example is valid, then I will consider a re-grade if you can provide convincing evidence to support your claim.

b) Any verifiable example. Examples mentioned in class included heath hen, piñata island tortoise (strictly speaking a subspecies, but we let it slide), po’ouli, most of the species in the

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opening video shown in the first class, but NOT passenger pigeon (as indicated in the question). If you got this question marked wrong, but believe your example is valid, then I will consider a re-grade if you can provide convincing evidence to support your claim.

c) Any verifiable example. Examples mentioned in class included spotted owl, rainbow trout, brook trout, brown trout. Polar bear is almost certainly not threatened in this way (yet) but I mentioned it as something people have talked about as being a possibility for the future, so we gave points for that too. Ligers are not correct because they occur only in unusual captive situations and do not affect extinction risk in either species. If you got this question marked wrong, but believe your example is valid, then I will consider a re-grade if you can provide convincing evidence to support your claim.