Name: _____ Student Number (optional): _____

EEB 2208: INTRODUCTION TO CONSERVATION BIOLOGY – Midterm 2015

Explanations are given only for those questions that a large proportion of people got wrong or that people have specifically asked me about.

1. B
2. B
3. B
4. B
5. B
6. A
7. A
8. A
9. B
10. B
11. A
12. A
13. A
14. B
15. A (note that this question was not something I talked about in class, but it was covered in the assigned reading)
16. B
17. B
18. B
19. A
20. A
21. B
22. A
23. B
24. B
25. A
26. B (people did not do well on this set of five questions – but it was simply a matter of knowing the relative importance of each threat to each group in the table presented)
27. B
28. B
29. B
30. B
31. A
32. A
33. B (all are introduced but only starling would be considered invasive because the others have not gone through rapid population growth)
34. B
35. A
36. A
37. B
38. A

39. A
40. B
41. B (note that the curves in this figure were intentionally unlabeled to test whether you had understood concepts about the need for clear figure labelling that were discussed in lecture 2; note too that there was a near-identical example in one of the most recent homeworks and that this is the problem that I went over in the lecture before the exam)
42. A
43. B
44. A
45. B
46. B
47. B
48. A
49. B
50. A
51. A
52. A
53. B
54. A
55. A
56. A
57. A
58. B
59. B
60. A
61. B
62. A
63. A
64. B (lots of people got this one wrong, but if you know what beta diversity is you should know that it relates to patterns involving multiple species and that the abundance of individual species is not important)
65. B (lots of people got this one wrong too – I'm not sure why, there are some prominent examples, e.g., chestnut blight, but the importance of diseases ranked very low in the Wilcove study of endangered US species)
66. B
67. B
68. A
69. B
70. A

71. B
72. B
73. B
74. A
75. B (quite a lot of people got this one wrong, and things are not as bad as these numbers suggest – 1%/year is off by two orders of magnitude; questions like this one can often be worked out based on logic – if we were losing 1% of species each year, all species would be gone in within a century or so – if you think about it, although things may seem bleak, it would be much bigger news if we were seeing that level of extinction)
76. B
77. A
78. B (this is another question designed to determine how well you understand how bad things are in terms of biodiversity loss – although a large proportion of commercial fish species are declining, we are not yet anywhere near the point where half have collapsed – again, that would be massive news given what it would mean for the human food supply)
79. B
80. A
81. A
82. A
83. A
84. B
85. B (The topic of this question is something that I addressed directly in the lecture after the exam. But, I included the question in the midterm anyway because I had already given you all the information you needed work out the answer just based on logic. When we talked about species diversity I showed several examples that show that hot spots derived from different diversity metrics or species groups don't overlap. When I talked about services I showed that even with only 3 services there is poor overlap. Even if you didn't study the actual maps, this information should have been enough to demonstrate that it is highly unlikely that diversity and services are going to coincide neatly. Note that many of my exam questions are like this (and more so on the final as you'll know more by then) – even if you don't know the specific answer, you should be able to work many of them out from the knowledge gained throughout the class. I ask questions like this, rather than just about things that can be memorized, because that is how knowledge is actually used in most jobs.)

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. 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.

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).

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 (tamarix), 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 Tasmanian devil and Ethiopian wolf. I also mentioned frogs and bats, but did not name actual species, so these do not count unless you named one of the species involved (which some people did). 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 probably 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. 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.