GEO 4928/6938 Biogeography Name:_____

Time it took to complete this exam: _____Hours:Minutes

Exam 1 24-27 February 2009 (Take home, due 5:00 PM Friday 27 February). The exam is open book, and you can use any other resources that you need to help you with it including the internet. However, you must use your own words and drawings in the answers and not downloaded, cut-and-paste text or other material including figures, photographs, etc. Give references, whether literature or web sites, of your sources if other than the lecture or text.

When you finish the exam, email the document to me at mbinford@geog.ufl.edu. If the document is larger than 5 megabytes, please place it in the folder G:\share\GEO4938-6938 Biogeography*yourname* and send me an email note that you did so. You can create a new folder in that directory if you do not already have one.

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1. Describe the major questions of Biogeography.

2. Describe the "persistent themes" of Biogeography, and give an example of each one.

3. In your opinion, what were the four most important contributions of Biogeography to general science in the 19th and 20th centuries? Describe each one and write about why are they so important.

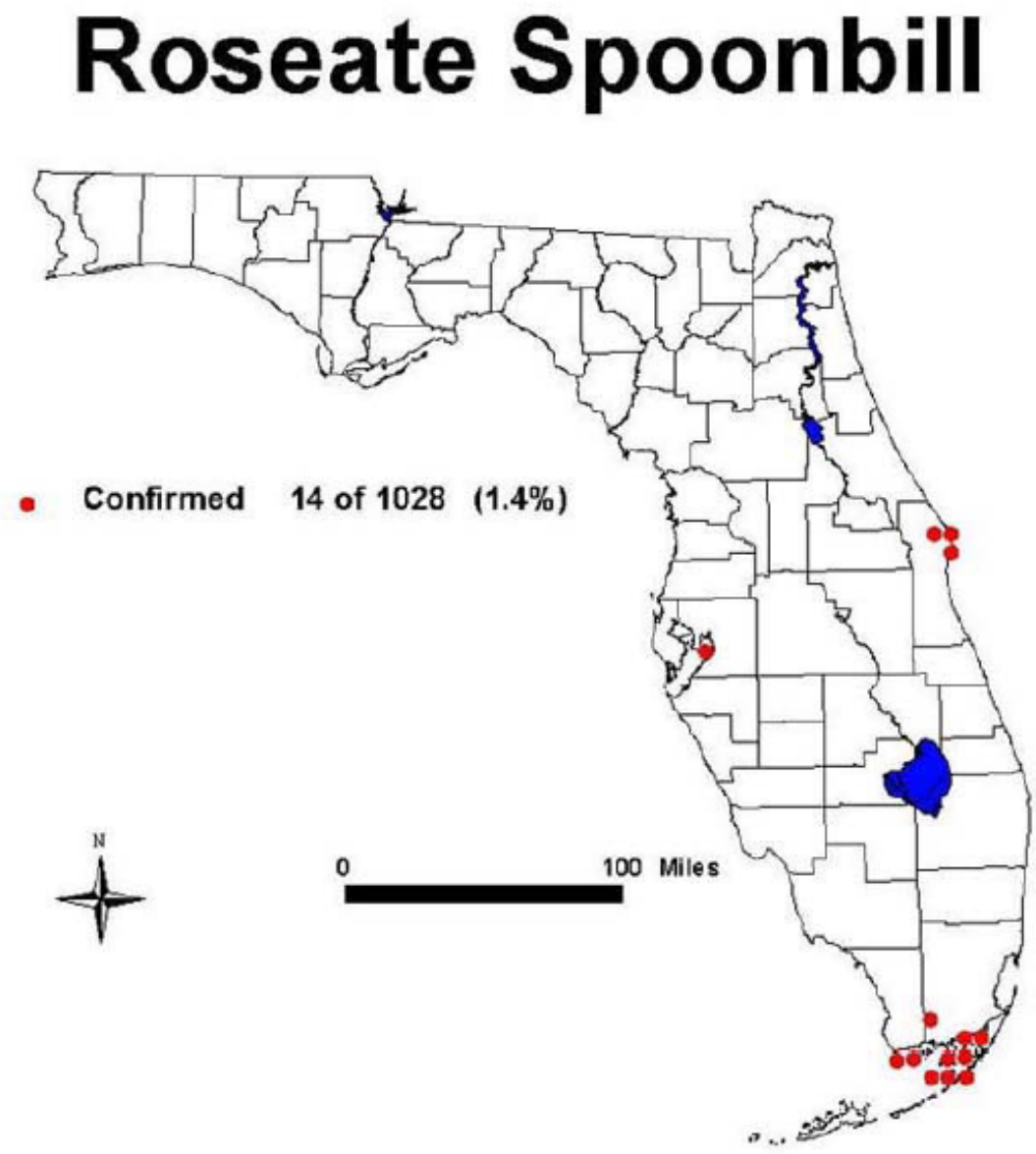
4. Pick out four different species that have not been discussed in class, and write the full systematics of each species, i.e. to what Kingdom, Phylum, Order, etc. does each one belong. Use sub-, super-, and other intermediate levels if they are available.

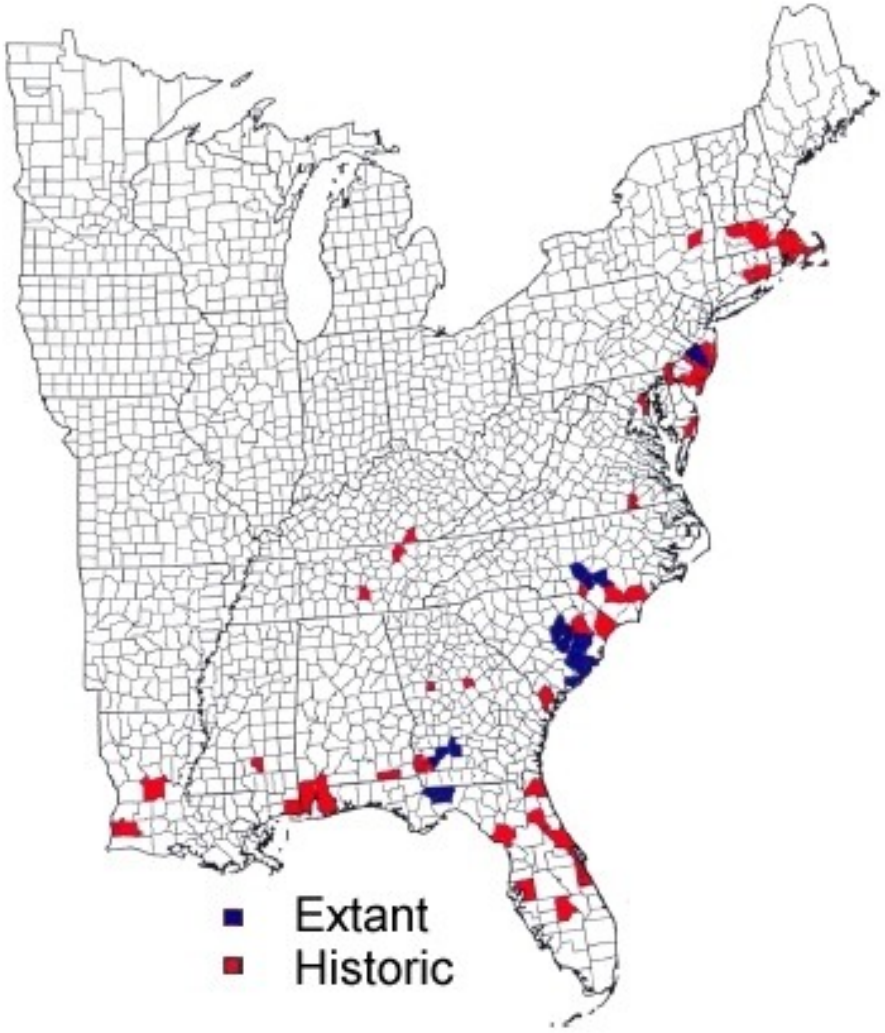
5. Describe the mechanisms that drive Earth's atmospheric and oceanic circulation patterns to create the basic patterns of climate distribution. Use any diagrams and text that you think will enlighten the reader.

6. Name the 12 global soil orders, and describe briefly the climate regime under which each one forms.

7. What are the six factors that drive both spatial and temporal heterogeneity in oceans and seas, and how do they act? How does all this heterogeneity affect plants and animals?

8. Here are maps of the confirmed occurrences of one bird species and historic/extant distribution of an endangered plant. Draw the area that could be considered the range map(s) (including the historic range and current range) of each one. Use any resources that you wish to help you draw the map, and use information that may not be included on the base map in each case, e.g. what you know or can find about other environmental requirements of each species such as elevation, water, etc.





American chaffseed (*Schwalbea americana*)

9. Describe the basic principles of predictive vegetation mapping (or modeling). Choose a plant or animal that has not been discussed in this class and describe the rules that you would use as input to a predictive vegetation map or a habitat suitability index.

10. Describe the most important events of plate tectonics during the Phanerozoic. The events should include alterations of oceanic circulation, connections among continents, biotic events, and any other change in controls of species distributions.

11. Describe Haffer's "tropical Pleistocene refuge hypothesis," and describe several of the lines of evidence that support it and several that undermine it.

12. What is community succession and why is it important to biogeography? Describe the major differences between the two types of succession.