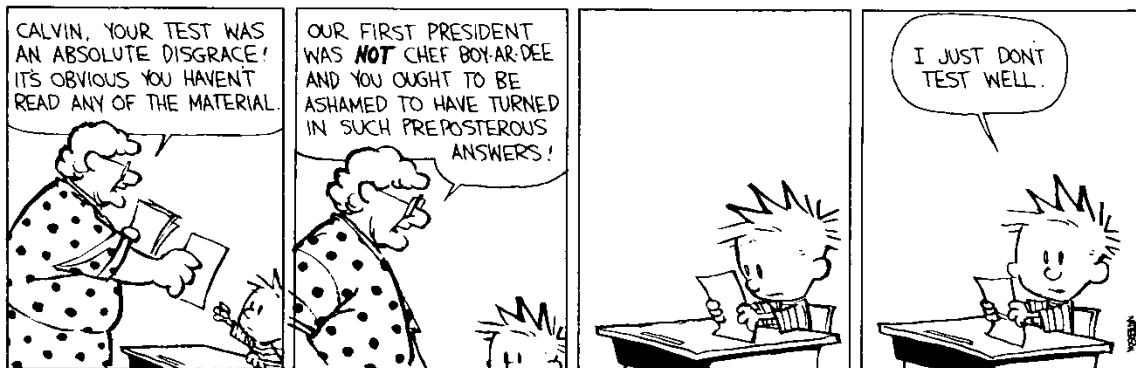


Name \_\_\_\_\_

BIOL 103 – Fall 2007 – Exam 3



**Please do not start until everyone is ready.**

1. (12 pts) What was the dust bowl? When, where, and why did it happen? Describe two specific agricultural practices that farmers can use to help prevent it from happening again.

2. (8 pts) Describe one cause of soil salinization.

3. (6 pts) In 1965 Paul Erlich predicted "By 1985 enough millions will have died to reduce the earth's population to some acceptable level, like 1.5 billion people." Why was he wrong?

4. (7 pts) Farmers using pesticide to kill pests often notice that the pesticides kill fewer of the pests each year. Why might this occur? Explain each step in the process.

5. (7 pts) If a developing country is struggling to feed its people, should it concentrate on grain production or meat production? Why?

6. (20 pts) What lessons can we draw from each the histories of the species listed below? For each species, write a general statement about wildlife conservation that can be supported by reference to the species. One sentence is sufficient. Then, in 1-3 sentences describe why the history of that species supports your statement. Do not derive lessons that tell people what they should or shouldn't to. For example, do not answer "People shouldn't drive species to extinction." The lesson for each species should be unique, and can use different species to illustrate contradictory points. Two examples are given below for elephant seals.

Elephant seal

*Small populations can recover to large population sizes when overhunting is stopped. Elephant seals were hunted to near extinction in the late 19<sup>th</sup> century but populations recovered when hunting stopped, and the species is now thriving.*

Alternative answer.

*Biologists had very different priorities in the 19<sup>th</sup> century than today. In 1982 a Smithsonian expedition to the a remote island off the Mexican coast found 8 elephant seals - a species that was suspected to be extinct - and killed seven of them to add to the Smithsonian's collection.*

Dusky sea side sparrow

Passenger pigeon

Whooping cranes

Spotted owl

7. (10 pts) Why might fragmentation of populations threaten their persistence? Describe two reasons.

8. (10 pts) What lessons have the study of islands provided wildlife biologists for protecting species in parks and wildlife refuges?

9. (10) How profitable are timber sales for the U.S. Forest Service? Explain.

10. (10) How does the wilderness act of 1964 define wilderness? List three criteria.