Please put your name **here only**: _____ Put your TA's name here:_____

Environmental Biology 206 EXAM III 23 April 2004 (exam worth 100 points)

True or False **(write 'true' or 'false'; 6 points total; 1 point each)**

1._____ In the western U.S., the majority of freshwater used is for irrigating agricultural fields.

2. _____ The U.S. has the highest per capita water-use rate in the world.

3. _____ The San Pedro River is primarily threatened by overdraft of groundwater in Sierra Vista and other communities.

4. _____ The Shannon Diversity Index measures species abundance and species richness.

5. _____ Large-scale fires were common (one or more per decade) in the Catalina mountains in the 1700s.

6. _____ About 1.5% of the solid waste produced in the U.S. is municipal solid waste (MSW).

Multiple Choice **(questions have only one correct answer; 10 points total; 2 points each)**

1. Which of the following are presented in your text as ways to improve the efficiency of irrigation?

a) using drip irrigation systems
b) measuring the soil moisture content to know when plants are becoming water-stressed
c) moving from monoculture to polyculture agriculture
d) all of the above
e) a and c

2. The leading cause of death in the world is:

a) jumbo jet crashes
b) poverty and malnutrition
c) tobacco use
d) automobile accidents
e) malaria and AIDS

3. What are some of the results of the creation and planting of Bt maize?

a) increased reliance on a genetically modified monocrop
b) development of insect resistance to the negative effects of *Bacillus thuringiensis*
c) potential harm to Monarch butterflies
d) a and c
e) all of the above

4. A rain shadow is when

a) it rains but the sun is shining.
b) it snows but it should be raining.
c) prevailing winds push air up and over a mountain range leaving precipitation on the windward side, leading to dry air on the other, leeward side.
d) it rains and is cloudy but you wish it was sunny.
e) you stand under an umbrella.

5. Which of the following watersheds is Tucson NOT a part of?

a) Colorado River
b) Gila River
c) San Pedro River
d) Santa Cruz River
e) Rillito River

Fill in the Blank **(2 points per blank; 16 points total)**

1. Accessible freshwater is about _____ percent of the water on earth.

2. In Allyson Wheelock's lecture, she suggested we avoid eating foods containing animal fats because of the increased concentration of pollutants in fat due to _____ up the food chain.

3. According to Dr. Bill Matter, still inland waters are called _____ systems in contrast to flowing inland waters which are called _____ systems.

4. The four main green house gases are _____, _____, CH_4, and N_20.

5. Earth Day was first held on 22 April _____.

6. The study of inland waters is called _____.

Really Short Answer **(CHOOSE 11 of 12; 44 points total; 4 points each)**

1. Dr. Katrina Mangin used the terms "eagle pie" and "lion steak" to describe what is served every day on seafood menus in the United States. What did she mean by this?

2. Consumer choices influence the landfill's ability to sell certain recyclables; how?

3. Distinguish between eutrophication and cultural eutrophication.

4. What gas does the Los Reales landfill collect, why do they collect it, and what do they do with it?

5. What are three of the negative environmental effects of reservoirs?

6. Define externality and give an example.

7. How could you argue that a tree-fall in a forest and a beaver dam in a stream contribute to similar ecological phenomena?

8. What are endocrine disruptors? Give an example of one.

9. Draw a logistic growth curve and label the axes.

10. Under the model of Island Biogeography, two islands of equal size but different distances from the mainland will have different equilibrium numbers of species. Why?

11. Global warming is a potential threat to the Sky Island ecosystems in this area. What is a Sky Island and why are they threatened by global warming?

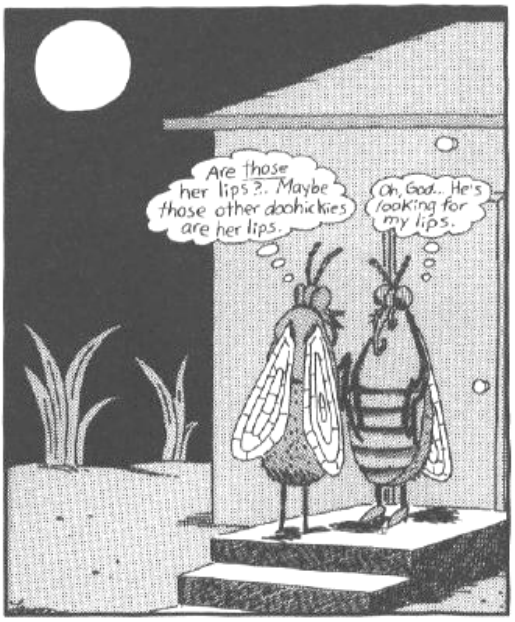
12. What is shrimp trawling and what two environmental problems are associated with shrimp trawling in the Gulf of California?

Short Answer **(24 points total; 8 each; several organized sentences required for an adequate answer)**

1. How are global warming and ozone thinning different? In your answer please address the underlying processes, their locations, and attempts to reduce human influences.

2. What is anthropocentrism and why does it perhaps hinder conservation efforts? How could you argue to an anthropocentrist that conservation is extremely important? How do the ideas of instrumental vs. intrinsic value enter into this debate?

3. If Loihi seamount erupts at rates comparable to Kilauea and Mauna Loa (active volcanoes on Hawaiian islands), it will reach sea level in a few tens of thousands of years. What did Dr. Robichaux mean by the phrase "preparing for Loihi" and why is it relevant to this class?



Fly dates