This list of topics is not exhaustive, but should give you an idea as to the range of material and types of questions we are likely to present on the exam. Please refer to your syllabus, text, readings, and lecture and lab notes for information relevant to the first exam. The exam will cover Chapters 5-9 in your text, several guest speakers, and the extra assigned readings listed in your syllabus and on the course web page. Also fair game are readings assigned for the labs you will have attended through today (05 March, 2004).

Likely Exam Format (total of 100 points):
True or false and matching (~33.3 points)
Really Short Answer or Definitions (one word or sentence) (~33.3 pts)
Short Answer (a couple of sentences) (~33.3 pts)

Think about links among the material presented in different parts of the course as you study:

Primarily from your text and lecture notes:
1. What are the biggest contributors to an individual’s ecological footprint in this country?
2. What factors affect human population size? How are these different in different parts of the world? How can these factors be altered by various government policies or economic changes?
3. Calculate the population after 20 years of exponential growth if \( N_0 = 5 \text{ billion and } k = 0.015 \).
4. How do you calculate the doubling time of a population growing exponentially?
5. What is the replacement fertility level per woman?
6. How did human population change 1,000 years ago as compared to the last 50 years?
7. What are natural limits to exponential growth.
8. How are population age structure diagrams different in different countries?
9. What is the demographic transition?
10. How does urbanization affect the local environment? The global environment?
11. Discuss some of the ways Curitiba, Brazil has attempted to become more environmentally friendly. Would these efforts work in U.S. cities?
12. What types of energy do we use in the US? How does this compare with the rest of the world?
13. How are the three main fossil fuels the same or different with respect to cost, efficiency, pollution, etc.
15. What kind of light bulbs should you buy if you are living in a rental house and will be moving out in 3 months? Why?
16. What are advantages of hybrid and/or fuel-cell cars?
17. What are advantages and disadvantages of using solar energy for our energy needs?
18. What are the arguments for and against drilling for oil in the Arctic National Wildlife Refuge?
19. How can subsidies, taxation, and government policy influence the types of energy we use?
20. What are some of the costs of using fossil fuels that we don’t pay at the pump?
21. Discuss the effects of livestock grazing and road building on public lands in this country and throughout the world.
22. What are some of the consequences of erosion?
23. Where does the food that feeds the world's people come from? What is the Green Revolution?
24. How is traditional agricultural practice different than industrial agriculture?
25. Define overnutrition.
26. Why are some folks wary of GMO’s?
27. How does pest control in an agricultural setting have environmental implications?
28. What are the pros and cons of eating beef?
29. Why might Nuclear Energy be more expensive than some would have us believe?
30. How many shipments of nuclear waste per day may be moved toward Yucca Mountain in the next 30 years.
31. How is the Endangered Species Act a controversial topic in American politics?
32. What is a paper park?
33. How are Biosphere Reserves and National Parks the same or different?
34. What does SDCP stand for?
35. According to Dr. Bob Steidl, what is the procedure by which scientists identified the biologically important parts of Pima County?
36. Define “riparian”.
37. Are extinction rates changing as a result of human activities? What is ecological extinction?
38. How does the Nature Conservancy promote biodiversity conservation? Name one Nature Conservancy land unit in Arizona. Have you been there?

39. What are the major causes of species extinctions or declines?

40. What is the Stoel 1999 paper about? The Batisse 1997 paper?

41. Does building more freeways seem to alleviate traffic congestion? Pollution?

42. What are some of the costs and benefits of urban sprawl?

43. Define “urban heat island”.

44. What is the main argument in the Rifkin 1992 reading? The Levidow 1999 reading?

45. Why are people interested in the San Pedro River?

46. What did the rainforest conservation video illustrate about global interconnectedness?

47. What is biodiversity? Extinction? Are there different definitions within the realm of each of these terms?

48. Where are most of the biodiversity hotspots throughout the world?

49. Why should we care about preserving wild species (biodiversity)?

50. Discuss the positive and negative effects of nonnative species (intentionally or accidentally introduced).

51. Most multicellular organisms are what?

52. List and explain three important properties of habitat patches that many conservation biologists think contribute to biodiversity persistence.

53. What is an endemic species?

54. What is a sink population? A source population?

55. Why is education and empowerment of women important for the environment?

56. How are the full costs of certain fuels, land-use practices, or other extractive practices sometimes not included in an economic valuation analysis?

57. How does the 2nd Law of Thermodynamics affect energy-use efficiency?

Primarily from your lab meetings:

58. What did you learn from your session in the library?

59. How would you construct a dichotomous key for plant identification?

60. What is different about the first stop on Tumamoc Hill as compared to the top of the hill? What evidence is there of human use of the area (now and before Europeans settled here)? How has the Santa Cruz River changed in the last 150 years? What are differences evident on the long term study plot from say 1915 to now? What role does the abiotic environment have on plant community structure?

61. What does NEPA stand for? What were two of the alternatives that you analyzed in the Rillito River? What are impact topics? Who was president when NEPA was passed?

Have a Good Weekend!