Week 1 – ANSWERS

- Name and describe the three resource/conservation ethics discussed in class? List one or more people who are associated with each ethic.  
  1. Romantic-Transcendental Conservation Ethic - derived from the writings of Ralph Waldo Emerson and Henry David Thoreau (eastern United States) and John Muir (western United States) - spoke of nature in a quasi-religious sense, argued for the preservation of nature for nature's sake is a pristine state.
  2. Resource Conservation Ethic - popularized by Gifford Pinchot who believed in the greatest good of the greatest number for the longest time - natural resources feed the economic machine and contribute to the material quality of human life for today's and future generations.
  3. Evolutionary-Ecological Land Ethic - popularized by Aldo Leopold - begins the development of ecology and evolution as scholarly disciplines which demonstrated that nature was not a simple collection of independent parts but a complicated integrated system of interdependent processes and components.

[van Dyke p. 3-14]

- In what two ways might overpopulation pose a threat to nature.

  High human population puts heavy demands on earth's space and resources. It leads to natural resource depletion, like water, oil, wood minerals. Also land use for food production limits natural habitats.

- What are the 4 postulates of conservation biology? The four postulates offered by Soule are

  1. Diversity of organisms is good, Untimely extinction is bad
  2. Ecological complexity is good, Simplification of ecosystems by humans is bad
  3. Evolution by means of natural selection is good, Interference with normal evolutionary patterns is bad
  4. Biotic diversity has intrinsic value, regardless of its economic value, Destruction of biodiversity is ethically wrong

[van Dyke p. 15]

- List 5 characteristics of the discipline of conservation biology.

  1. It is a crisis-oriented discipline
  2. It is integrative and multidisciplinary in nature
  3. Conservation biology is inexact and an adaptive science
  4. Most sciences are value-free, whereas conservation biology is value-laden and mission driven
  5. Conservation biology has an evolutionary time scale
  6. It is a legally empowered science
  7. It is a science with eternal vigilance

[van Dyke p. 15-16]
• What is extinction rate? Describe one way that long-term extinction rates have been estimated.

Extinction rate is the rate at which species go extinct over time. Long term extinction rates (or background extinction rates) have been estimated by the amount of time between when a species first appears and when it disappears from the fossil record.

• What general patterns does examination of the fossil record reveal about background extinction rates?

Fossil record shows that extinction is occurring all the time at a steady rate. It indicates that the average lifespan of the species, is between 1 and 5 million years. Several mass extinctions accelerated the rate for very short periods, but they did not change the general pattern considerably: on average we should lose about 1-2 species a year. There are today more species/families present than earlier suggesting that the long-term extinction rate is slowing down.

[partly van Dyke p. 75]