

April 22, 2015

Conservation

Announcements

- YouTube video due today
- Critical Thinking question #7 due Sunday April 26th, 11:59 pm
- Quiz 9 now available- due Sunday, April 26th, 11:59 pm
- Last Day of Classes: Monday, April 27th
- Final Exam: Monday, May 4th 1300- 1550
 - o Office Hours: 0900-1200

Humans and Environment

- Humans have interacted with the environment throughout history
 - o 2.3 million years ago= origin of genus Homo
- Pre-historic civilizations left mark on environment
- Throughout history, humans have exploited natural resources
 - o Overharvesting
 - o Overgrazing
 - o Pollution
- Humans have changed abiotic characteristics
 - o Forests
 - o Wetlands
 - o Rivers
- Humans have altered the biotic interactions in the environment
 - o Non-native species

- o Loss of apex predators

Extinctions

- Current Extinction rates= 100 to 1,000 times higher than background
- Mammals and Birds
 - o Background rate= ~1 species/ 200 years
 - o Current rate of extinction for mammals and birds is 1 species/year
- The 6th Mass extinction?

Conservation Biology

- Applied Ecological science
- Goal-orientated science
 - o Want to achieve a goal
 - o Understand loss of biodiversity
 - o Prevent/decrease loss of biodiversity

Conservation biology is an integrative science

- Biology
- Economy
- Government
- Society

Why Conserve?

- “Biophilia”- E.O. Wilson, Harvard biologist
 - o Love of nature and connection to other organisms
- Moral belief other organisms have a right to life
- Practical need for ecosystem services

Conservation Biology can focus on

- Protecting endangered populations
- Protecting ecosystems and landscapes
- Decreasing threats to biodiversity

Protecting endangered Populations

- In order to protect a species, one must understand..
 1. Behavior and ecological niche of target species
 - Habitat
 - Resources
 - Interactions within community
 2. Threats to species
 - Harvesting
 - Habitat loss
 - Pollution
 - Non-native species
- Must also conserve genetic diversity
 - o Bottleneck effect decreases genetic diversity
 - o Inbreeding increase chances of recessive disorders
- Methods
 - o Captive breeding programs
 - Increased chances that breeding would be successful
 - Attempt to get some sort of genetic diversity
 - o Movement corridors for gene flow