

April 15, 2015

Threats to Biodiversity (Part 1)

Announcements

- Exam 4 grades now available on Webcourses
- Volunteer Extra credit now available
- No Quiz this week!
 - Quiz 9 last of the semester opens Monday, April 20th and due Sunday, April 26th
- Critical Thinking Question #6 dues Sunday, April 19th, 11:59 pm
 - Last critical Thinking will open up on Monday April 20 and will be due on Sunday April 26
- This week's participation= participation 12
 - Las weekly participation grade
- Clicker Questions Next week= Extra Credit points (5 total for week)
- You-Tube Video= Due by Wednesday, April 22nd
- Last Day of Classes= Monday, April 27th
 - Final exam review= no new material
 - Make-up exams= must be completed by this date or take during final exam period
 - Last day of regular semester office hours
- Final Exam= Monday, May 4, 1300-1550
 - Office Hours: 9am to 12pm

Human impacts can have negative effects on biodiversity

- 6th Mass extinction??
- This time period will represent the 6th mass extinction in the fossil record

- o 5 mass extinction currently
- o Think humans will cause the 6th extinction

Threats to Global Biodiversity

1. Habitat Loss
 2. Non-native species
 3. Overharvesting
 4. Pollution
 5. Climate Change
- All threats result in decrease of population size, increasing risk of extinction

Small populations have increased risk of extinction

- Small populations= low genetic diversity
 - o Reduces potential for evolutionary adaptations
 - o Natural selection is less effective in small populations
- Evolution of small populations less likely to be adaptive
 - o Inbreeding depression
 - o Genetic Drift= Chance events cause genetic changes
 - o Bottleneck Effect= event kills many individuals, leaving small subset of population

Loss of Biodiversity

- Loss of one species can have cascading effects on ecosystems
 - o Apex predators
 - o Keystone species
 - o Ecosystem engineers

Biodiversity= Ecosystem Services

- Loss of species= loss of ecosystem services

#1: Habitat Loss

- Habitats can be altered, degraded, or lost through conversion or extraction
- Most rivers and freshwater systems have been affected by human activity

Loss of Terrestrial ecosystems

- Ecosystems can be altered, degraded, or destroyed by conversion
- Forests: 50% lost

Deforestation

- Net loss of trees from a forested area
 - o Net loss of forests globally every year
 - o Currently, higher rate in developing countries
- Causes:
 - o Logging for wood products
 - o Harvesting for charcoal and fuel
 - o Clearing for cattle, roads, farming, human structures
 - o Non-native species
 - o Fire Suppression
- Negative Effects
 - o Habitat loss/fragmentation
 - o Loss of biodiversity
 - o Soil erosion
 - o Severe flooding