

# Intro. To Environmental Science 120 - EXAM REVIEW

## UNIT 1: An Overview of Environmental Science

- 3 viewpoints (anthropocentric, biocentric, ecocentric)
- video...The Lorax (themes, terms and issues)
- see Unit 1 key terms handout
- article... 'Frankenfish – GM Salmon'
- ecological footprints
- ethical consumerism
- populations
- factors affecting population growth
- birth/death/immigration/emigration
- lab...mark/return/recapture method on popcorn kernels
- census (sample/true)
- population density (calculation)
- mark-return-recapture (calculation)
- video...Easter Island (themes, terms and issues)
- population growth (biotic potential, carrying capacity)
- exponential/logistic (graphs)
- exponential growth (calculation)
- limiting factors (light, space, water, nutrients)
- biological evolution
- adaptations...
  - \* behavioral (ie/ migration)
  - \* physiological (ie/ ability to poison prey)
  - \* structural (ie/ coloration)
- Darwin (natural selection, Darwin's finches beaks)
- processes that lead to evolution ...
  - \* changes in environment (speciation)
  - \* genetic variation (genes/mutations)

### USE UNIT 1 REVIEW/CROSSWORD AND CHECK/CORRECT UNIT 1 TEST

## UNIT 2: Sustainable Development

- levels of organization...
  - \* Biologist (cell/tissue/organ/11 organ systems)
  - \* Ecologist (organism/species/population/community/ecosystem/biome/biosphere)
- biotic/abiotic factors
- biomes (aquatic/forest/desert/tundra/grassland)
- video... TED Talk – Jayne Pointer on Biosphere 1
- autotrophs/producers
- photosynthesis (balanced chemical equation)
- heterotrophs/consumers...
  - \* herbivore (cow)
  - \* carnivore (snake)
  - \* omnivore (human)
  - \* detritivore (earthworm)
  - \* decomposer (fungus)
  - \* scavenger (vulture)
- food chains and food webs

- trophic levels
- lab...owl pellet dissection
- ecological pyramids...
  - \* energy
  - \* biomass
  - \* numbers
- habitat/niche
- species interactions...
  - \* competition (direct/indirect) *ex: fox and coyote*
  - \* predation (predator/prey) *ex: eagle and rabbit*
  - \* parasitism (parasite/host) *ex: tick and dog*
  - \* mutualism *ex: human and intestinal bacteria*
  - \* commensalism *ex: shark and remora*
- nutrients (essential elements)
- classification...
  - \* non-mineral/mineral, macro/micro, primary/secondary macronutrients
- nutrient cycles...
  - \* water/hydrologic (know in detail)
  - \* carbon
  - \* nitrogen
  - \* phosphorous
- problems that affect natural cycles
- species at risk...
  - \* extinct/extirpated/endangered/threatened/special concern/ data deficient/not at risk

## **USE UNIT 2 REVIEW/CROSSWORD AND CHECK/CORRECT UNIT 2 TEST**

### **UNIT 3: Miramichi Watershed, It's Ecology and Atlantic Salmon**

- life cycle of an Atlantic Salmon (see handout and video)
  - predators to the Atlantic Salmon (names of species)
  - watershed terminology (see handout)
  - 4 essential items for a healthy fish stock (see handout)
  - lab...salmon scale identification (see lab assignment)
  - 4 types of current found in a river...Eddy/ Pool/Riffle/Undercut
  - lab...external anatomy of a salmon (see lab assignment)
- We have had a few guest speakers over this past semester...know some points from each!
    - Ken Kimble – Coyote Population & Global Warming
    - Tony VanBuskirk – Species at Risk
    - Emma Bell-Carruthers – ArcGIS
  - Wild Canada Series...be familiar with some of the themes and interactions showcased in the episodes.
  - We have discussed a number of environmental issues over this past semester. Choose an issue, state a title, include an introduction that describes the issue with any history/background information, identify/explain at least two pros along with two cons to the issue, your feelings/position on the issue and a conclusion to summarize your information.