

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
- census (sample/true)
- population density (calculation)
- mark-return-recapture (calculation)
- video...Easter Island
- 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/dessert/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)
 - salmon scale identification (see lab assignment)
 - 4 types of current found in a river...
 - * Eddy/ Pool/Riffle/Undercut
 - external anatomy of a salmon (see lab assignment)
- We have had a number of guest speakers over this past semester...know some points from each!
 - Bonnie Wright – Fish Friends
 - Harry Collins – Miramichi River Environmental Assessment Committee
 - Peter Clark – NB Story Telling
 - Ken Kimble – Coyote Populations
 - Tony VanBuskirk – Spruce Budworm
 - Tanner Stewart – Aquaponics
 - Billy Joe Fowler – Tabusintac Watershed Association