AP Biology Unit 6: Ecology and Animal Behavior Cheat Sheet

by hlewsey via cheatography.com/36676/cs/11641/

Population Ecology

biotic/abiotic factors → response: acclimate, regulate, conform, migrate, torpor, etc.

fundamental niche=range of factors/resources a species could use

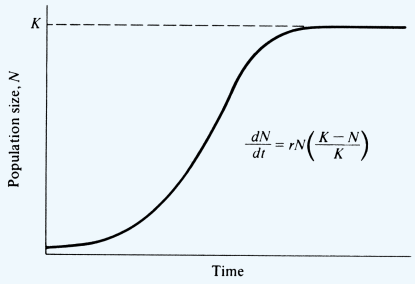
realized niche=actual use of potential environment

uniform dispersion=evenly spaced

random dispersion=unpredictable spacing

clumped dispersion=aggregate in patches

Logistic Growth



K-selection=sensitive to population density

r-selection=maximizes r (reproductive rate)

density independent= pop. density does not affect birth/death rate

density dependent= ↑ pop. density→ ↓ birth rate/ ↑ death rate

Species Richness and Diversity

species richness	# of different species in a community
species diversity	# & size of each population in a community
relative abundance	proportion of different species in a community
dominant species	most abundant species w/ highest biomass
keystone species	has pivotal ecological role/niche

Interspecific Interactions

Competitive Exclusion Principle

> 2 species can't survive in the same ecological niche; fundamental≠realized

Interspecific Interactions (cont)

Predation

> +/-; adaptions: cryptic/aposematic coloration, Batesian/Müllerian mimicry

Symbiosis

> -parasitism: +/-, endo & ecto
> -mutualism: +/+, obligate vs facultative
> -commensalism: +/0 interaction

Community Disturbance

primary succession	colonization by pioneer organisms (bacteria/algae/lichens/moss) in a virtually lifeless area to form soil
secondary succession	colonization of an area where the existing community was cleared but soil is intact

Learning

habituation	loss of responsiveness to stimuli w/no new info
imprinting	formation of permanent long-lasting response to an individual during sensitive period
spatial	landmarks, cognitive maps
associative	classical/operant conditioning
cognitive	awareness, reasoning, judgment→problem solving

Social Behavior

cooperation	behavior done as a group
agonistic	aggressive behavior
dominance hierarchies	dictate social position of an animal in a culture
territoriality	behavior to defend an area from others
altruism	↓ individual's reproductive fitness, ↑ fitness of colony

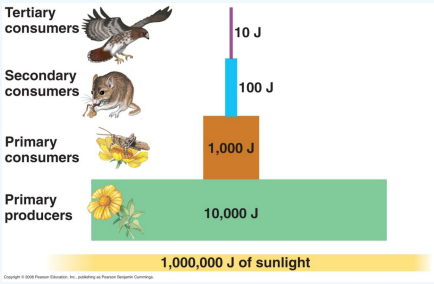
Chemical Cycles

Water	evaporation, condensation, precipitation, runoff/transpiration
Carbon	photosynthesis & respiration, burning fossil fuels
Nitrogen	fixation: free nitrogen→NH_4^+ nitrification: NH_4^+→nitrites/ates denitrification: nitrates→N_2 decomposition: organic matter →ammonia

Animal Behavior

Proximate Cause	how a behavior occurs/is modified
Ultimate Cause	why behavior occurs in context of natural selection
Fixed Action Pattern	highly stereotypic behavior that is unchangeable and carried to completion
Sign Stimulus	external cue that triggers FAP exchanged within a species=releaser
Communication	visual (waggle dance), chemical (pheromones), tactile, & auditory (birdsong)
Kinesis & Taxis	change in activity in response to stimulus; oriented movement toward/away from stimulus

Ecosystem Energy Flow



bottom-up model: influence from low→high

top-down (trophic cascade) model: influence from high→low

biological magnification: ↑ trophic level= ↑ accumulated toxin concentration

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