

# AP Biology Unit 6: Ecology and Animal Behavior Cheat Sheet by hlewsey via cheatography.com/36676/cs/11641/

## Population Ecology

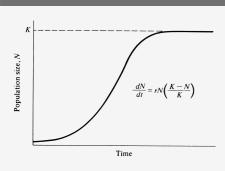
biotic/abiotic factors → response: acclimate, regulate, conform, migrate, torpor, etc.

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

## Learning

habitu- ation	loss of responsiveness to stimuli w/no new info
imprinting	formation of permanent long-l- asting response to an individual during sensitive period
spatial	landmarks, cognitive maps
associ- ative	classical/operant conditioning
cognitive	awareness, reasoning, judgment→problem solving

## Social Behavior

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

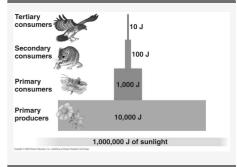
# **Chemical Cycles**

Water	evaporation, condensation, precipitation, runoff/transpiration
Carbon	photosynthesis & respiration, burning fossil fuels
Nitrogen	fixation: free nitrogen→NH₄ <sup>+</sup> nitrification: NH₄ <sup>+</sup> →nitrites/ates denitrification: nitrates→N₂ 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=r-eleaser
Communication	visual (waggle dance), chemical (pheromones), tactile, & auditory (birdsong)
Kinesis & Taxis	change in activity in response to stimulus; oriented movement toward/away from

## 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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Published 27th May, 2017. Last updated 6th May, 2017. Page 1 of 1. Sponsored by **Readable.com**Measure your website readability!

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