Mating behaviors

Permuncious	No strong pairs
Monogamous	one male + one female
Pologymy	1 Individual, multiple partners

Coloration and Mimicry

Aposmetic coloration	Prey use to avoid predatation, warning colors
Cryptic coloration	Prey use to avoid predatation, camoflague
Batesian Mimicry	Nontoxic mimics toxic
Mullerian Mimicry	2 or more dangerous species with similiar warning coloration, more known

Relationships

Interspecific	Between species
Competitive exclusion	two species competing for same resources can't coexcist
Explotation	One species benefits, other harmed

Water Cycle

1.	Evaporation
2.	In aptmosphere as water vapor
3.	Forms clouds
4.	Falls
5.	Runoff absorbed
Human impact:	Reduce abailibility, cause pollution by agriculture and urbanization

Dispersion

Nitrogen cycle

1.	Nitrogen gas converted to usable form by nitrogen-fixing bacteria, other bacteria convert to nitrates which are taken up by plants through the roots
2.	Animals consume plants, acquire nitrogen in body
3.	When animals die, nitrogen goes into soil and is reused
Human Impacts:	Nitrogen fertilizers, leads to eutrophical and water polution

Phophorous Cycle

1.	Found in rocks
2.	Plants take up through roots
3.	Animals consume, die, return, phosphorous gets locked in rocks
Human impact:	Mining releases large amounts of phosphorous

Plants

Dormancy	Inactivity or slow metabolism triggered by environment
Hormones	Auxins and cytokines play role in plant development
Trophism	Plants grow in response to particular stimulus
Photo Periarosm	Plants able to see changes in day lengths

Organisms uses

Bioremediation	Use of organisms to remove pollutants
Biological augmentation	Addition of organisms to ecosystem to enhance its function (ex. nitrogen-fixing bacteria increase plant growth)

Stimulus response

Kinesis	Nondirectional response to stimulus, activity level aranges in response to intensity.

Fixed Action Patterns

Fixed action patterns	innate, stereotyped, behavior sequences that are triggered by specific environmental cues.
Sign Simulus	Specific environmental cues

Ultimate vs Inate Evolution

Ultimate	Focuses on evolutionary history and behavior of trait
Inate	Genetic + physiological basis

Definitions

Ecology	The study of organisms and their interactions with the envirionment
Biotic	Living; plants, animals, bacteria
Abiotic	Non-living; temperature, sun, water, soil, rocks, weather

Species movement

Species Transplant	Adding a species to areas where it was previously absent to see if dispersal is a key factor or limiting distribution, must survive and reproduce to be sucessful
Dispersal	Movement away from high population density or origin, contributes to distribution

Biomes

Tundra	Cold
Savanna	Desert
Temperate Broadleaf forest	Indiana, Arkansas
Tropical	Most diverse, by equator
Temps are warmer at equator	Colder at poles

Climate vs Weather

Weather	Shorter period of time
Climate	Statistical changes over time (temp, percipitation, sunlight, wind)
Climate change	Long-term shift in teperature and weather patterns caused by human activities especially burning of fossil fuels

NEP

Definition	difference between total CO2 absorbed by photosynthesis and released by respiration
+	singk
-	releasing. loosing

j

Eutrophication

Eutrophication	Body of water becomes enriched with nutrients = excessive plant growth and death of fish

Limiting Nutrient

Limiting nutrient	Nutrient in short supploy, limits growth of organisms

Carbon Cycle

1.	CO2 taken in by plants in photosynthesis (some carbon transformed to soil)
2.	Plants and animals die, carbon returned to soil, stored for long time or released into aptmosphere through respiration, decomposition
Human impact:	Burning of fossil fuels

Niches

Fundamental	Potential
Realized	Actual environment
Ecological	Role organism fills in ecosystem

Temporal Partitioning

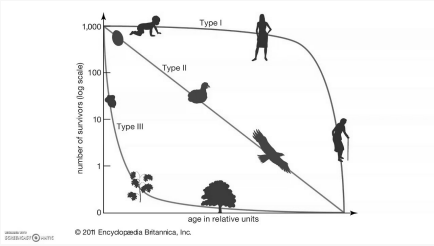
Temporal Partitioning	Species that occupy similar niches reduce competition by using at different times
Example	Birds look for food at different times a day

Species Diversity

Richness	number of different species present
Abundance	number of individuals of each species

Dispersion

Survivorship Curve



Density dependent vs independent

Density dependent	Affect population size, effects increase as population increases
Density independent	Abiotic, significant impact on population regaurdless of size

Altruistic behaviors

Altruistic behaviors	Benefit others at cost to individual
Hamilton's rule	Predicts altruistic behaviors through evolution
Kin selection	Explains altrustic behaviors

Learning

Imprinting	Organism deveopes strong attatchment to first item it discovers
Associated Learning	Organism associates stimulus with response
Operant conditioning	Organism associates behavior with new and or punishment and adjust accordingly
Cognition	Mental process inviolved in perception, learning, memory and problem solving

Animal Behavior

Behavior Ecology	Study of ecological and evolutionary causes of behavior in organisms.
Competition	Organisms competing
Resource partitioning	Division of resources to avoid competition
Mutualism	Both organisms benefit
Commensalism	One animal benefits one is unaffected.
Agonistic Behaviors	Associated with conflict between individuals (fighting, threatinging...)

Definitions

Bioaccumulation	Increase of toxins in food web by building up in individual organism.
Biomagnification	Retained substance becomes more concentrated at each level.

Primary productivity

GPP=	NPP+RR