

Survivorship

Type 1: individuals live out life span, die old

Type 2: individuals die at constant rate (birds, rodents)

Type 3: individuals die early in life (fish, invertebrates)

Ecosystem Stability

Biological Diversity: stabilize ecosystem function in the face of environmental fluctuation

Variation among species: in response to fluctuation is an essential requirement for ecosystem stability

Climate change and other anthropogenic environmental changes: continue to cause biodiversity loss

Cardio Disorders

Congestive Heart Failure heart cannot pump enough blood, rapid breath/heartbeat, fatigue, systolic/diastolic dysfunction

Atrial Fibrillation arrhythmia(abnormal heartbeat), 400 bpm in upper chambers, poor blood flow, upper and lower chambers have no coordination, palpitations, shortness of breath, fatigue

Myocardial Infarction decreased of blood flow to myocardium, blood clot blocks blood, pain in chest/neck/back/arms, fatigue, abnormal heartbeat, lack of oxygen supply

Cardio Disorders (cont)

Atherosclerosis thickening of arteries because of plaque in inner lining of artery, obstruction of blood flow, no symptoms until plaque ruptures or blood flow is blocked

Bradycardia slower than normal heartbeat (40-60), fainting, dizziness, memory problems, fatigued easily, hypothyroidism, caused by heart tissue damaging due to age, transmitted to atria, obstructive sleep apnea

Tachycardia heart rate over 100bpm, arrhythmias can cause tachycardia, atrial flutter/S-VT/Ventricular/Ventricular Fibrillation, shortness of breath, palpitations, chest pain, hyperthyroidism

Microcytic anemia presence of small, hypochromic(less color), RBC in peripheral blood smears, causes include iron deficiency

Normocytic anemia RBC are same size and color (normochromic, causes include heavy menstrual bleeding, chronic bleeding

Cardio Disorders (cont)

Macrocytic anemia bone marrow produces large RBC, causes include alcohol, hypothyroidism, deficiencies in B12 and folate

Central Line-Associated Bloodstream Infection bloodstream infection not related to infection at another place within 48 hours

Bloodstream Infection

Hypotension Low blood pressure happens when BP is much lower, fainting or dizziness, brain doesn't receive enough blood

Hypertension Pressure in blood vessels is too high, headaches, chest pain, dizziness, difficulty breathing, nausea, blurred vision

Abdominal Aortic Aneurysm swelling in aorta, life-threatening if ruptures, common in older men and smokers

Thoracic Aortic Aneurysm weakened aorta, causes include necrosis(breaking down of tissue inside of aortic wall), difficulty breathing, low BP, pain in chest or jaw, trouble swallowing

Aortic Dissection tear in inner layer of aorta, older men, chest or back pain, unconsciousness, shortness of breath, may be inherited, constant high BP could also weaken aortic wall



Types of Competition

Intraspecific: competition between same species

Interspecific: competition between different species

Competitive exclusion: one niche-one species, no two species can have the same niche

Resource partitioning: resources are divided, different species can use resources in different times, areas, and ways

Types of Pollution

Organic: decomp of living things and their bi-products

Inorganic: dissolved and suspended solids (salts, minerals)

Toxic: heavy metals and other chemical compounds that are lethal to organisms

Thermal: waste heat from industrial and power generation processes

Ecological Succession

Primary: barren ground (new islands)

Secondary: disturbed areas (abandoned farm lands)

Pioneer community: first organisms to occupy area

Climax communities: stable array of species in equilibrium

Taiga

Taiga (cont)

Coniferous trees can photosynthesize in cold conditions

Critical Carbon Sink

Predators regulate the grounds

Place for reproduction to occur

EKG Patterns

Pulse heart stops because electrical activity in heart is too weak, nonshockable heart rhythm, sinus rhythm, A Fib, bundle branch blocks, idioventricular rhythms

Ventricular Tachycardia fast arrhythmia, problem with electrical impulses, chest pain, fainting, dizziness, shortness of breath

Torsades de pointes type of VT that starts in ventricles, lower chambers beat faster than upper chambers

Premature Ventricular Contractions extra heartbeats that starts in ventricles, fluttering or skipped beat in chest, occur spontaneously

Supraventricular Tachycardia fast arrhythmia that affects upper chambers, palpitations, heart suddenly beats faster,

Energy Transfer

Conduction transfer by direct contact

Radiation transfer of heat energy by electromagnetic radiation

Circulation transfer of heat energy as result of insulation

Convection transfer of heat by fluid or air

Energy Transfer (cont)

Negative Feedback circular chain of events that opposes change

Tundra

Cold, treeless regions found in Arctic and tops of mountains

Windy, 150mm-250mm of precipitation

Summer brings wildflowers

Soil is permafrost, thin surface layer for thawed soil in summer

Most plants are low growing plants

Low reproductive rates, slow growth rates, small offspring

Short growing season

Considered desert

Average temperatures below freezing for 6-10 months

6-10 weeks are warm, and long growing days

Threatened by people who want to drill for oil

Might be shrubs and dwarf trees

Shallow root systems

Reproduce quickly in summer

Caribou, Arctic foxes, migratory birds

Large herbivores migrate seasonally

Birds breed in summer

Dark pigment and thick fur

Thawing permafrost could release greenhouse gases

Breeding grounds

Deciduous Forests

Thick forests that contain coniferous (spruce, pine, fir) trees

Trees have needles instead of leaves, seeds grow inside protective cones

Winters are long, cold, days are short, persistent snowpack

Summers are short, moist, and cool

Growing seasons have long days, lasts about 3 months

Moderate to high precipitation, 40-100mm

More coniferous than deciduous

Moderate reproductive rates

Soil is spodosol

Moose, reindeer, birds, wolves, migratory birds often mate during summer

Taiga animals have thick fur because of temperature

Trees that lose their leaves at end of each growing season

Most trees are broadleaf

Summers are mild, winters are cold

750-1500mm of precipitation

4-6 month growing seasons

4 distinct seasons

Moderate temperatures and moderate precipitation

Shrubs and ferns, biodiversity is a lot

Lots of wildlife, hibernate to get through seasons

Trees shed leaves to save energy and water

Vital role in carbon cycling and oxygen production



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