

COMPONENTS AND FUNCTIONING OF ECOSYSTEM



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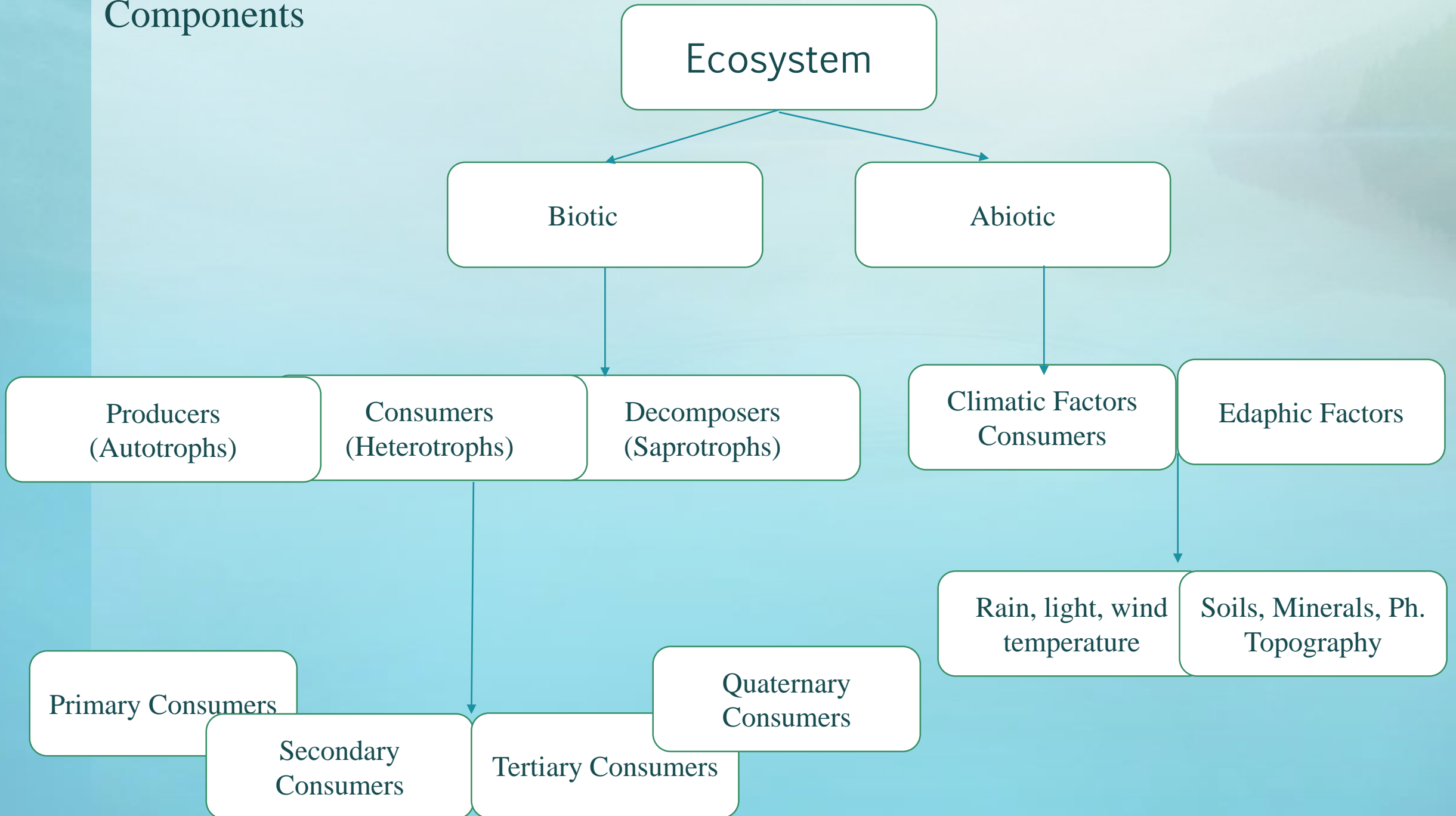
Introduction

- An ecosystem consists of the biological community.
- that occurs from the physical and chemical factors.
- The two main processes that ecosystem scientists study are *Energy transformations* and *biogeochemical cycling*.
- Studies of *individuals* are concerned mostly about physiology, reproduction, development or behavior, and studies of *populations* usually focus on the habitat and resource needs of particular species, their group behaviors, population growth, and what limits their abundance or causes extinction. Studies of *communities* examine how populations of many species interact with one another

COMPONENTS

ABIOTIC COMPONENTS	BIOTIC COMPONENTS
Sunlight	Primary producers
Temperature	Herbivores
Precipitation	Carnivores
Water or moisture	Omnivores
Soil or water chemistry (e.g., P, NO ₃ , NH ₄)	Detritivores
etc.	etc.

Components



Abiotic Components

- Abiotic components of an ecosystem consist of the nonorganic aspects of the environment that determine what life forms can thrive.
- Examples of abiotic components are temperature, average humidity, topography and natural disturbances. Temperature varies by latitude; locations near the equator are warmer than are locations near the poles or the temperate zones.
- Humidity influences the amount of water and moisture in the air and soil, which, in turn, affect rainfall.
- Topography is the layout of the land in terms of elevation.

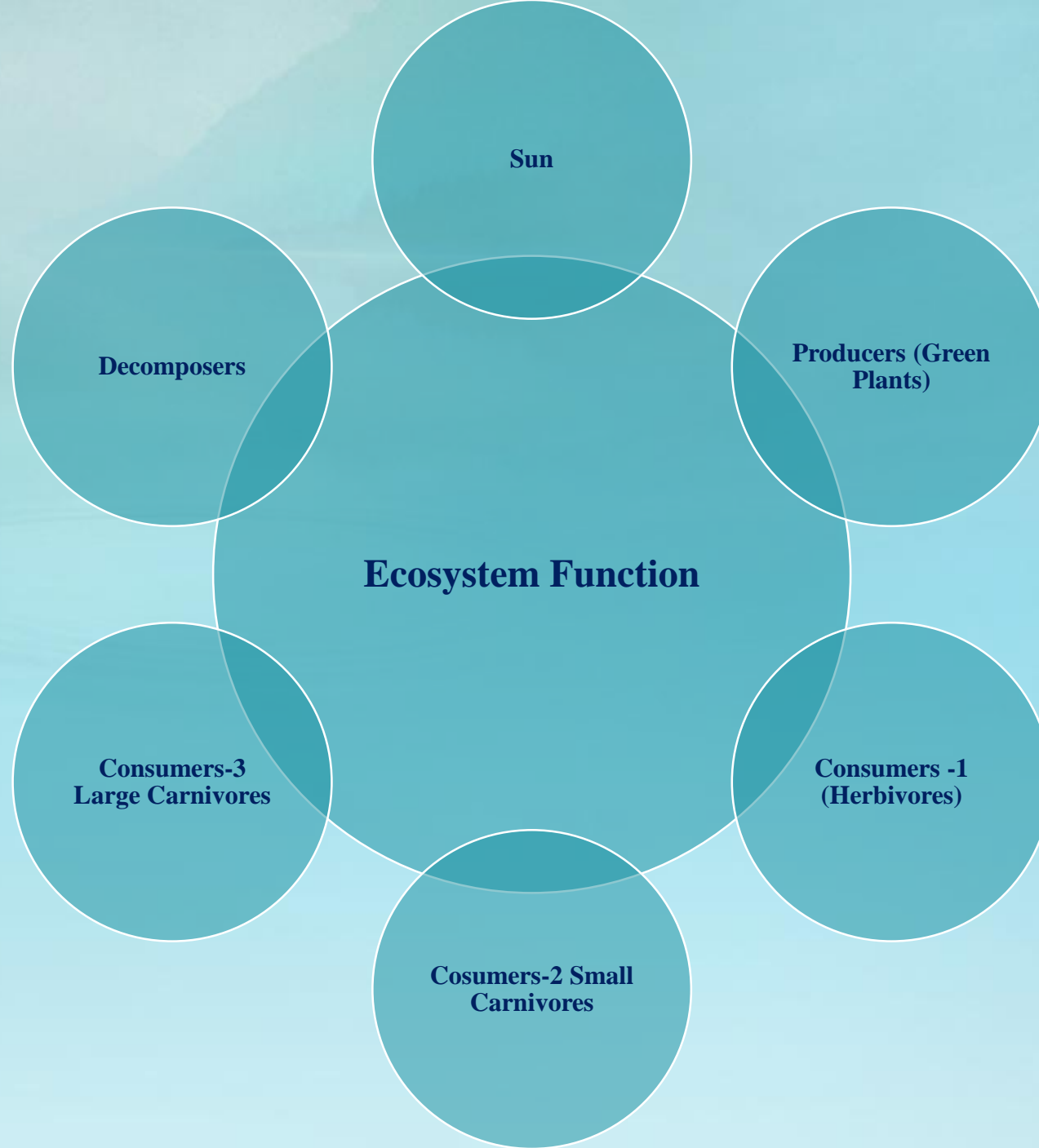
Biotic Components

- The biotic components of an ecosystem are the life forms that inhabit it.
- The life forms of an ecosystem aid in the transfer and cycle of energy. They are grouped in terms of the means they use to get energy.
- Producers such as plants produce their own energy without consuming other life forms; plants gain their energy from conducting photosynthesis via sunlight.
- Consumers exist on the next level of the food chain. There are three main types of consumers....
- Herbivores, carnivores and omnivores. Herbivores feed on plants, carnivores get their food by eating other carnivores or herbivores, and omnivores can digest both plant and animal tissue.

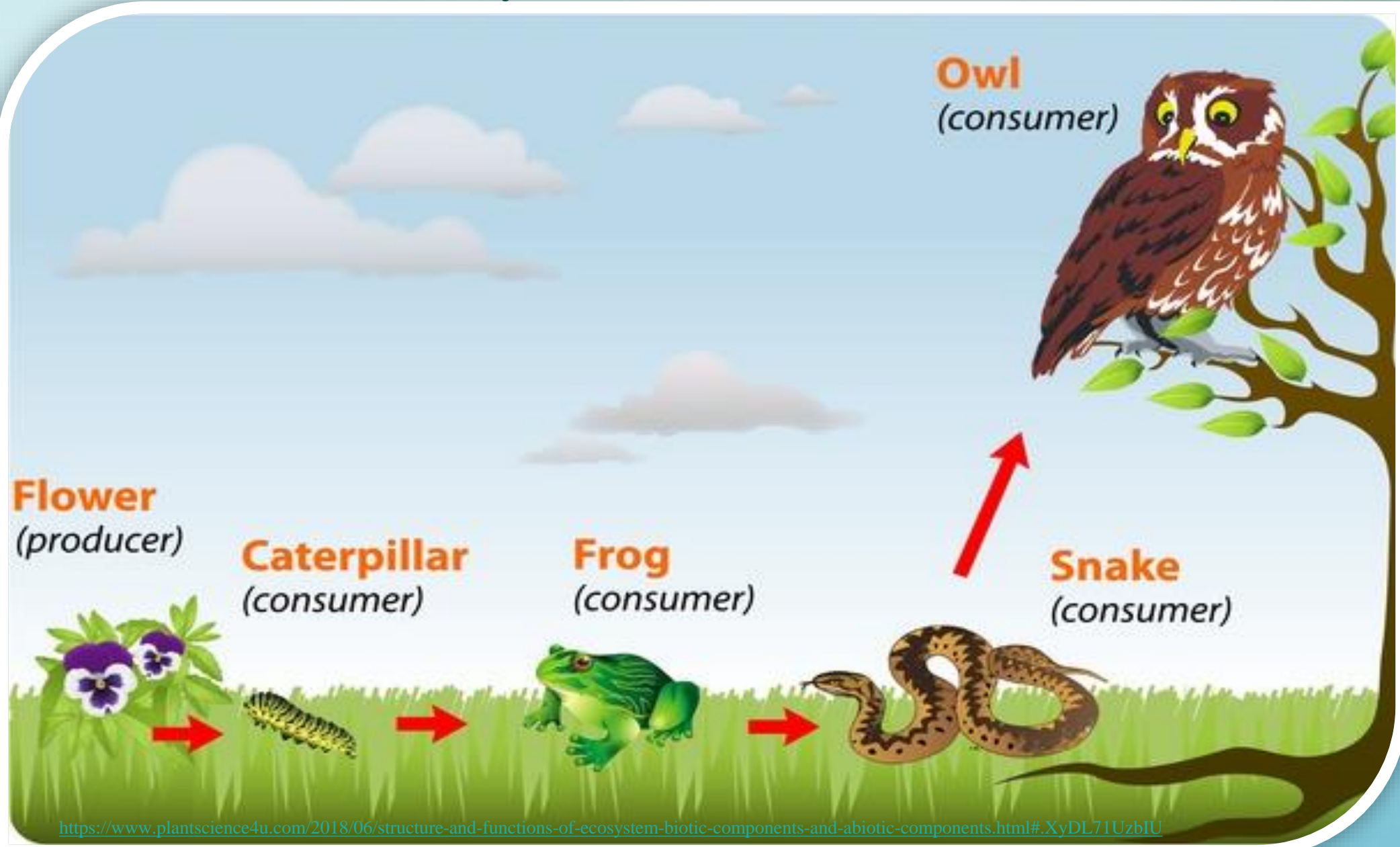
Energy Flow

Trophic Level	Desert Biome	Grassland Biome	Pond Biome	Ocean Biome
Producer (Photosynthetic)	Cactus	Grass	Algae	Phytoplankton
Primary Consumer (Herbivore)	Butterfly	Grasshopper	Insect Larva	Zooplankton
Secondary Consumer (Carnivore)	Lizard	Mouse	Minnow	Fish
Tertiary Consumer (Carnivore)	Snake	Snake	Frog	Seal
Quaternary Consumer (Carnivore)	Roadrunner	Hawk	Raccoon	Shark

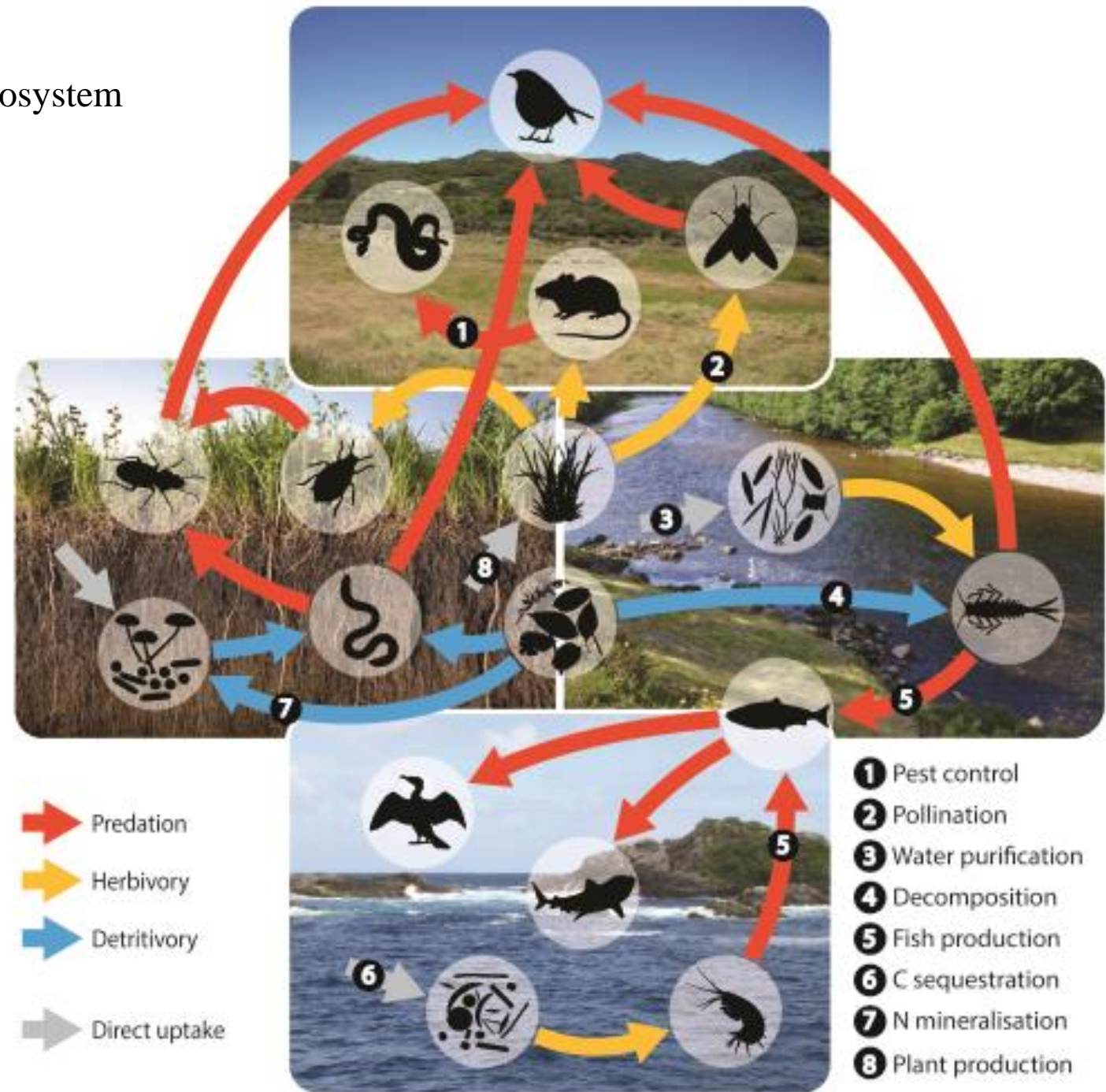
Functions



Function of Ecosystems



Food web energy fluxes and their relation to ecosystem services across ecosystems





Thank you