

Ecology

Concept of ecology was introduced by Haekel-1869

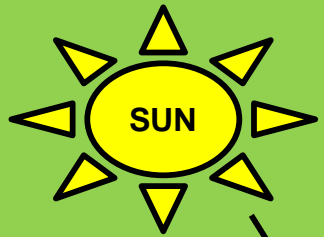
Ecosystem

Greek word *Oekos* = *Home*

Concept of Ecosystem was introduced by **Tensley-1935**

**The study of the interaction
between life and its abiotic
components, plants &
animals**

**An ecosystem is a self
regulatory group of biotic
communities interacting
living as well as nonliving
animals**



SUN

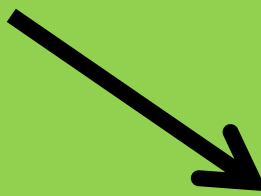
**AUTROTROPHS
OR
PRODUCERS**

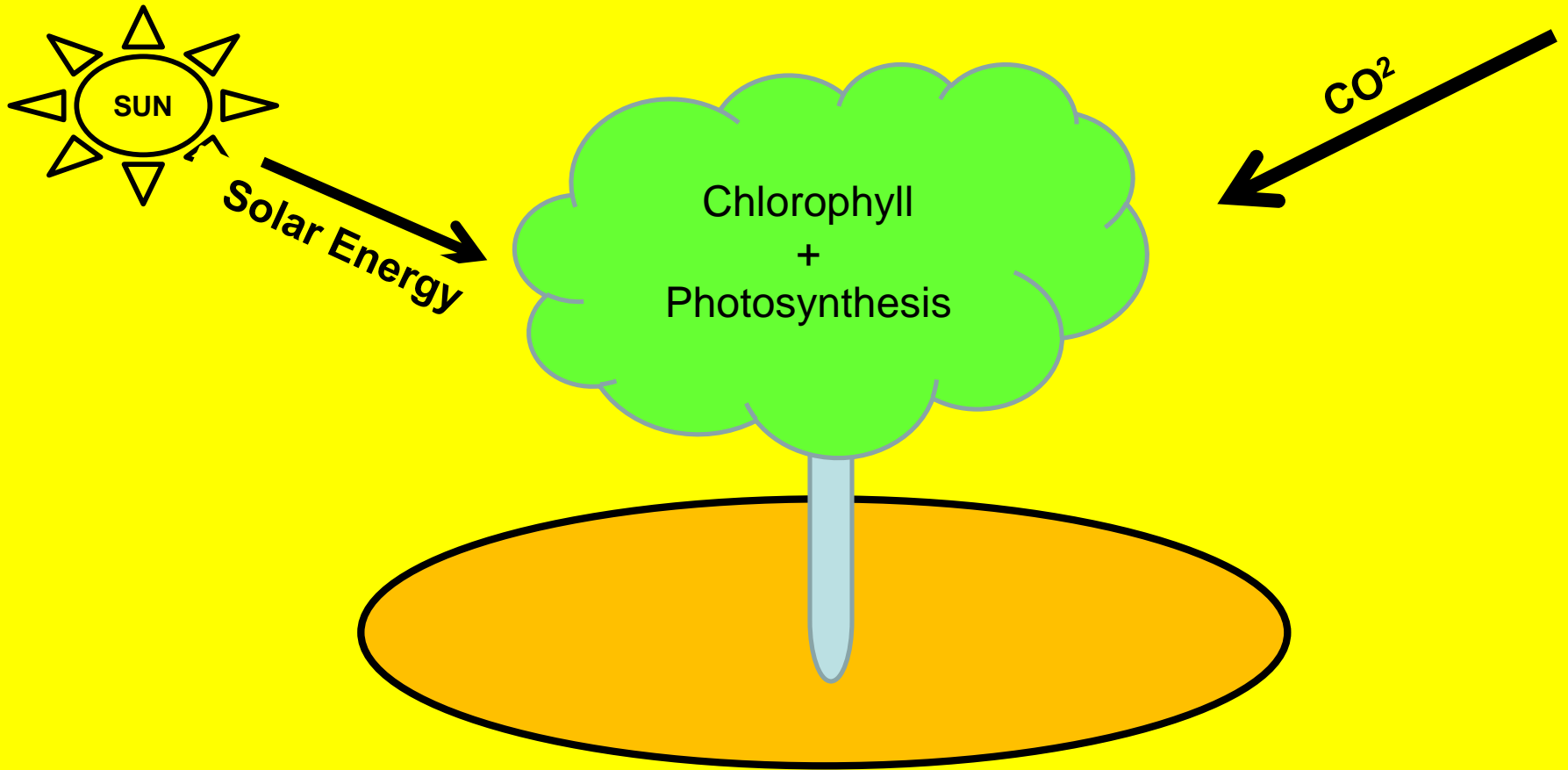
**HETROTROPHS
OR
CONSUMERS**

DECOMPOSERS

**NUTRIENTS
+
WATER**

ECOSYSYEM MODEL





ECOSYSYEM MODEL

Characteristics of Ecosystem

- 1. Abiotic Components**
- 2. Biotic Components**

1. Abiotic Components

A. Physical Factors

**Sunlight, Water, Soil,
& Temperature**

B. Chemical Factors

C,H,O,N,P,S,& K

2. Biotic Components

1. Autotrophs

All green plants

(Photosynthetic Organism)

2. Heterotrophs

All Animals

3. Decomposers

Nitrifying Bacteria & Fungi

Autotrophs

All green plants
(**Photosynthetic Organism**)



Hetrotrophs

1. Primary Consumer
2. Secondary Consumer
3. Tertiary Consumer

Decomposers

Nitrifying Bacteria & Fungi

Breaks macromolecules in to the micro molecules

Or

Breaks complex molecules in to the simple molecules

Functional Attributes Of Ecosystem

Food Chain

**The sequence of eating behavior
being eaten**

Grassland Ecosystem

Grass → Grasshopper → Frog → Snake → Hawk

Pond Ecosystem

**Phytoplankton's → Zooplankton's → Small
Fishes → Large Fishes**

Forest Ecosystem

Trees → Deer → Tiger

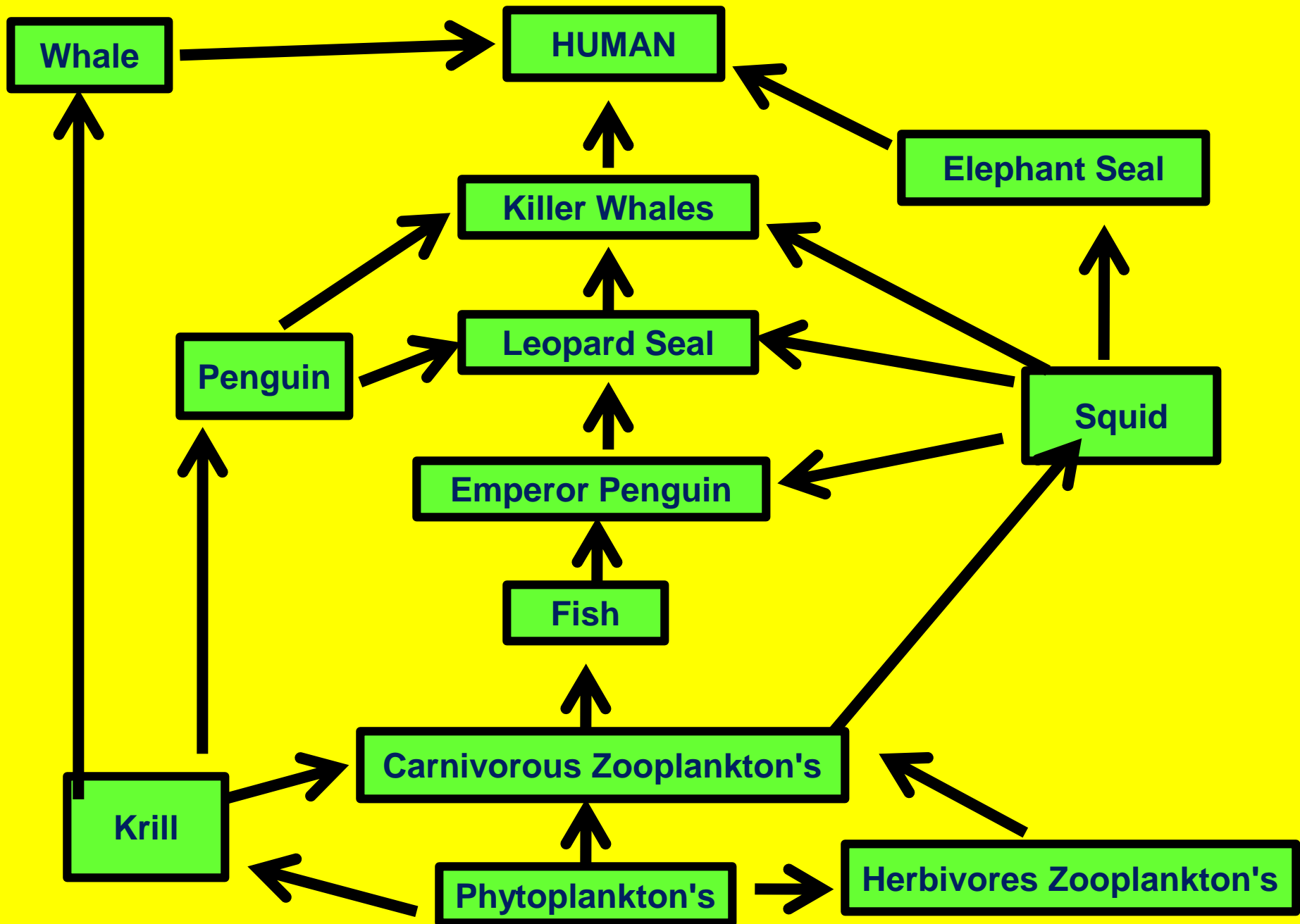
Tree Ecosystem

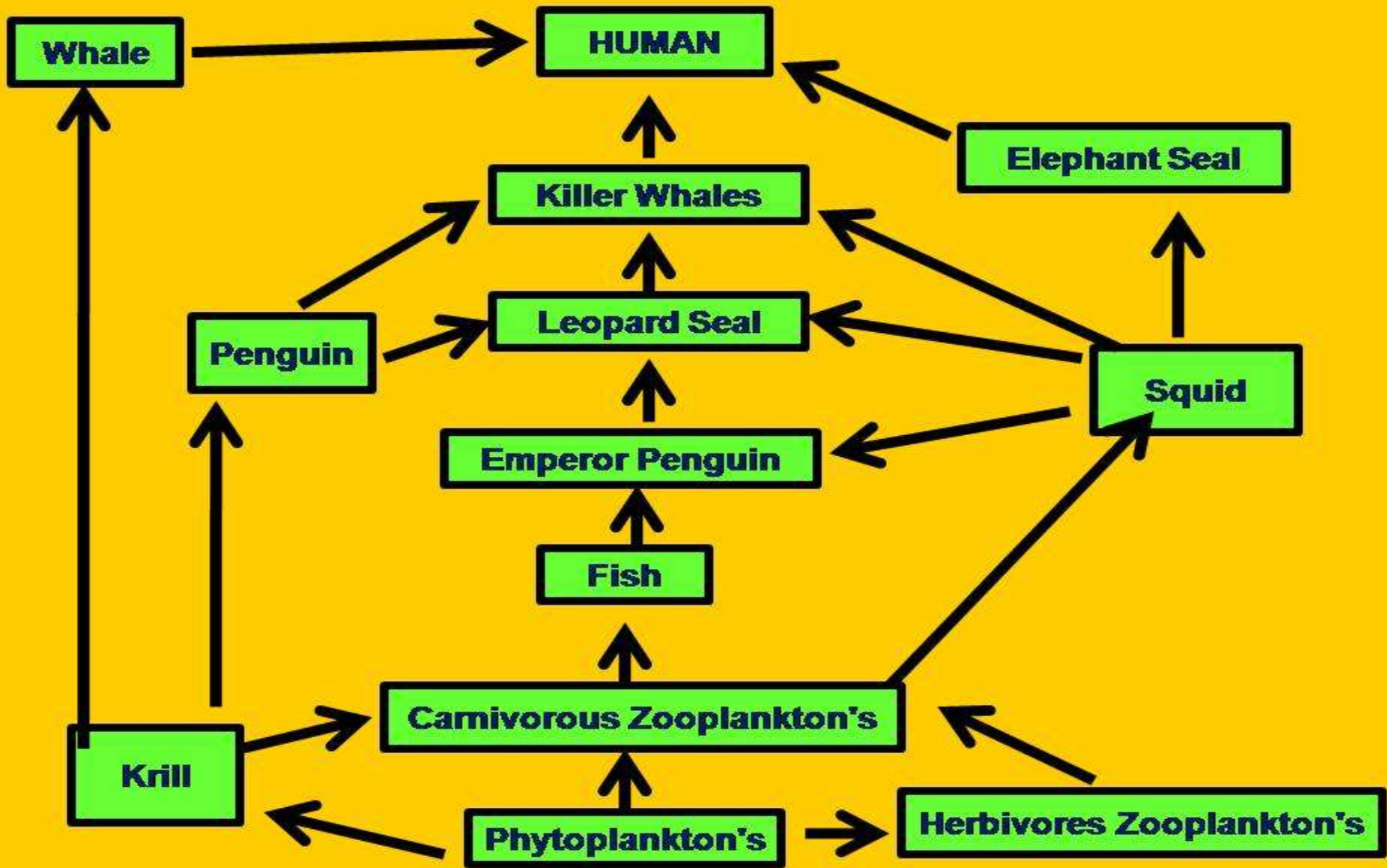
Tree → Birds → Ticks

Food Web

Network of Food Chain

In a food chain numbers of option of food is available at each trophic level





Food Web of Antarctic Sea

Energy Flow In Ecosystem

Types of Energy

1. Potential Energy

Energy at rest

2. Kinetic Energy

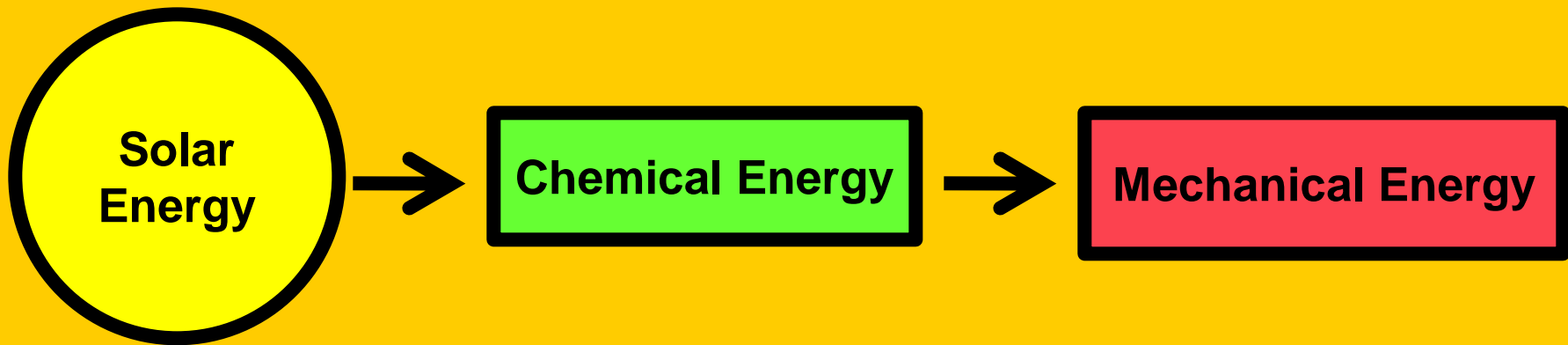
Energy in Motion

Energy Flow In Ecosystem

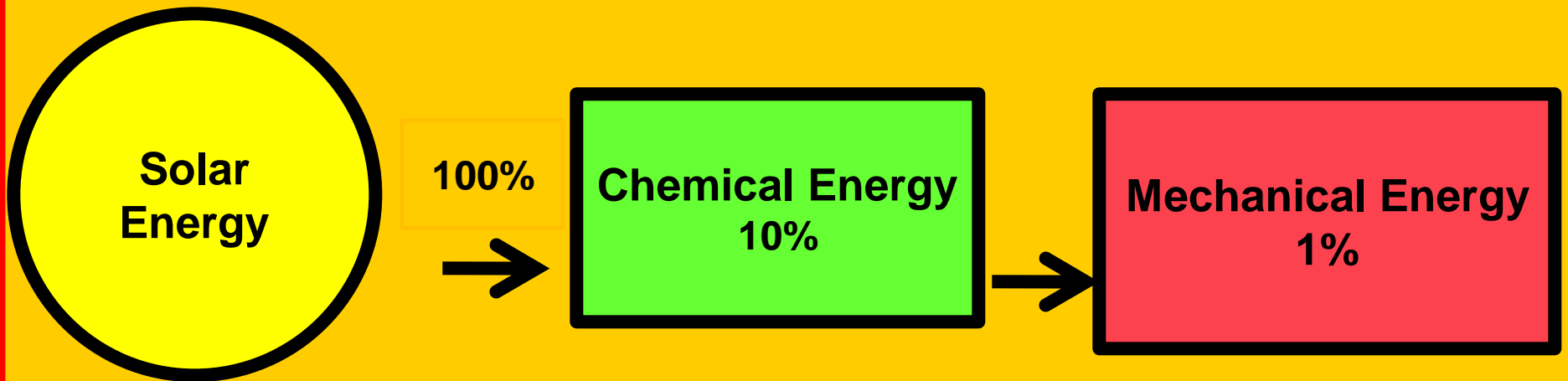
1.1st Law Of Thermodynamic

2.Second Law of Thermodynamics

Ist Law Of Thermodynamic

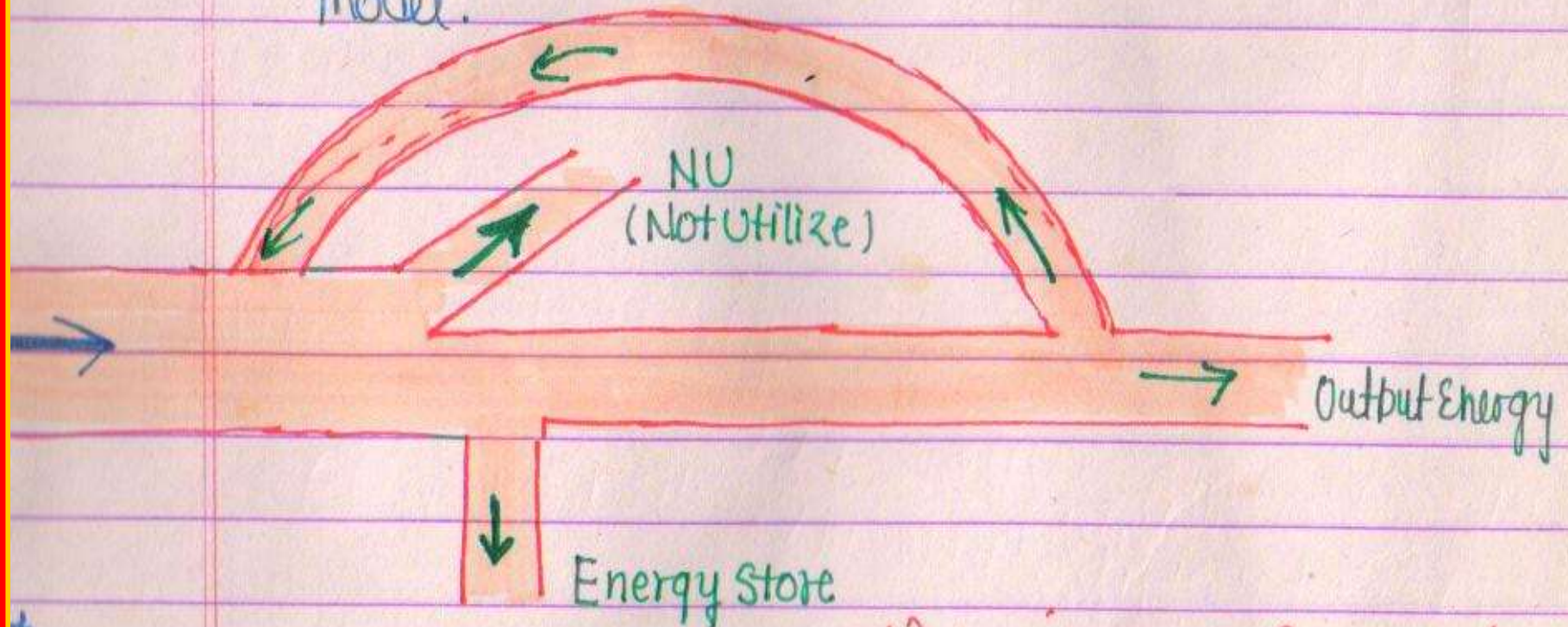


Energy can be generate or destroyed but can transform from one form to other



During the transformation of energy the most of the part of energy is dissipates

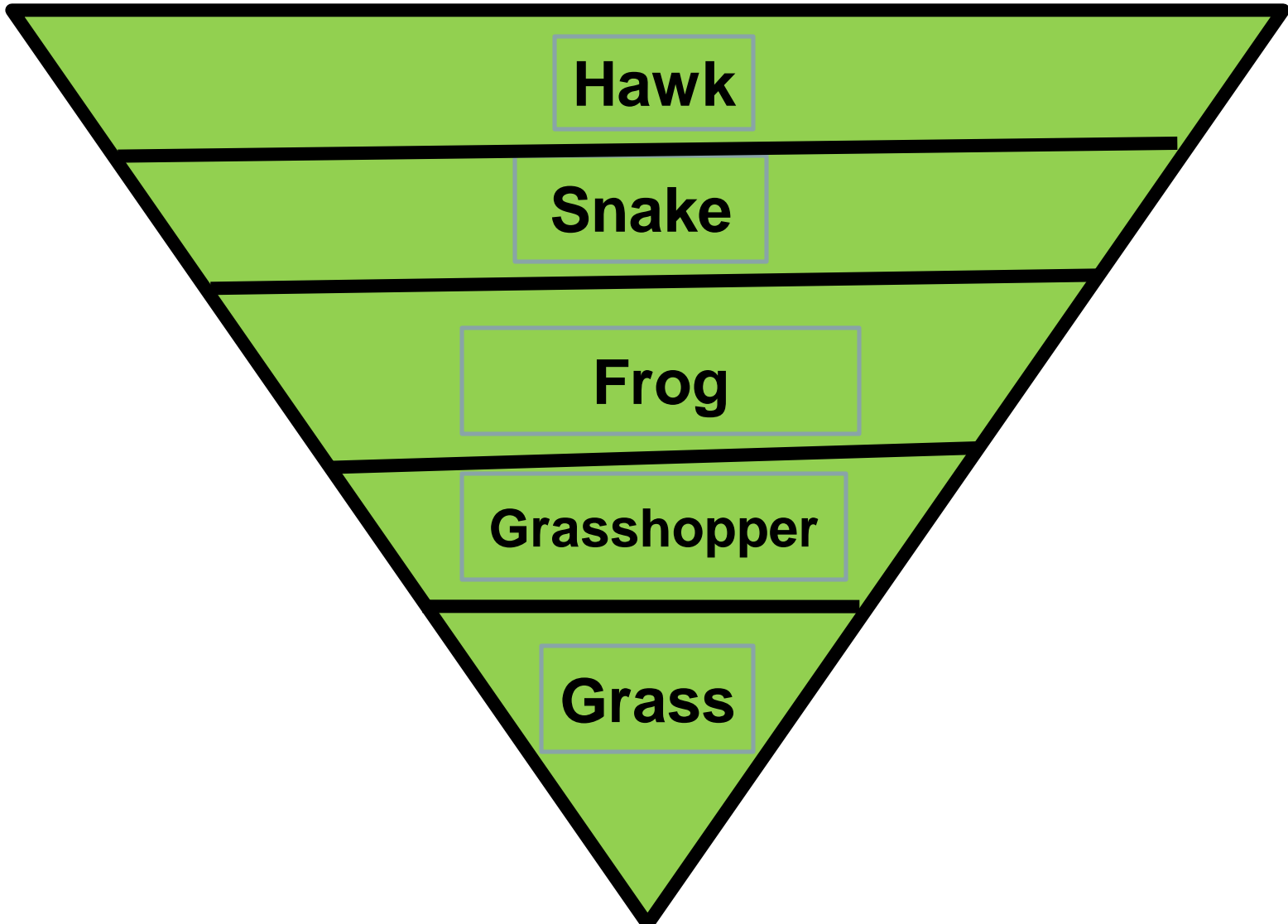
Universal Energy flow Model - It was explained by E. P. Odum as the universal energy flow model.



(Universal Energy flow Model)

The gradual loss of energy takes place at every level.

Energy Flow Model



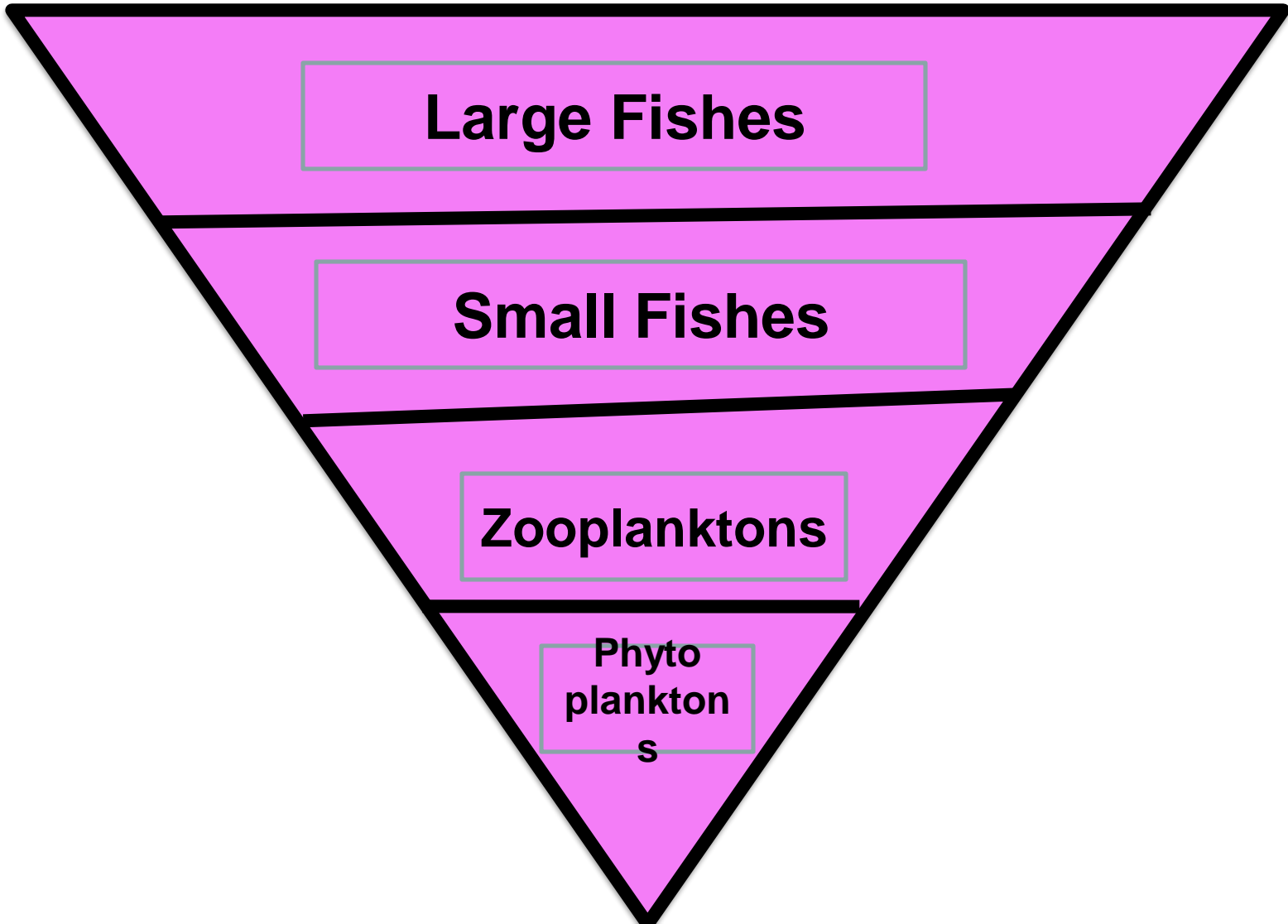
Hawk

Snake

Frog

Grasshopper

Grass



Large Fishes

Small Fishes

Zooplanktons

**Phyto
plankton
s**

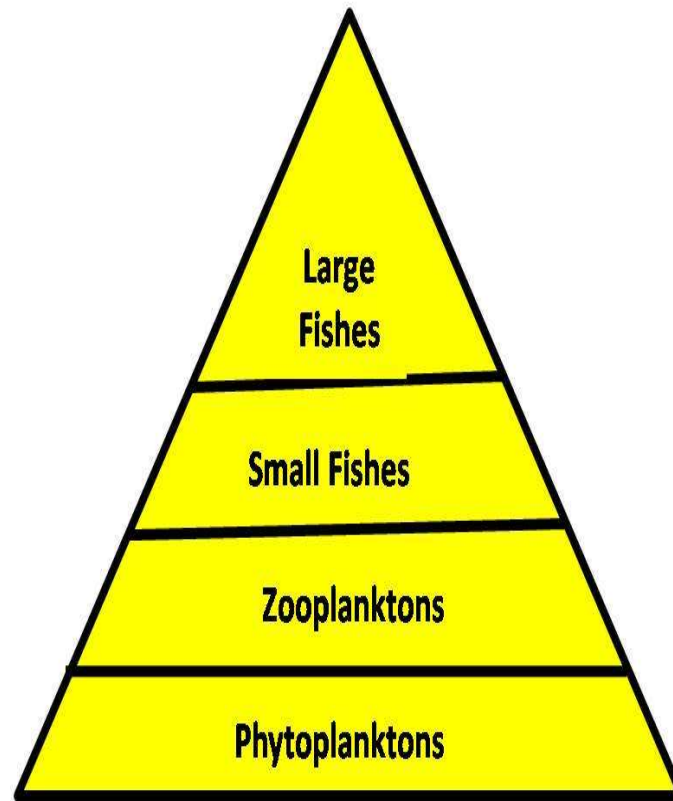
Ecological Pyramids

Graphical representation of trophic structure and function of an ecosystem starting with producers at the base are known as Ecological Pyramids

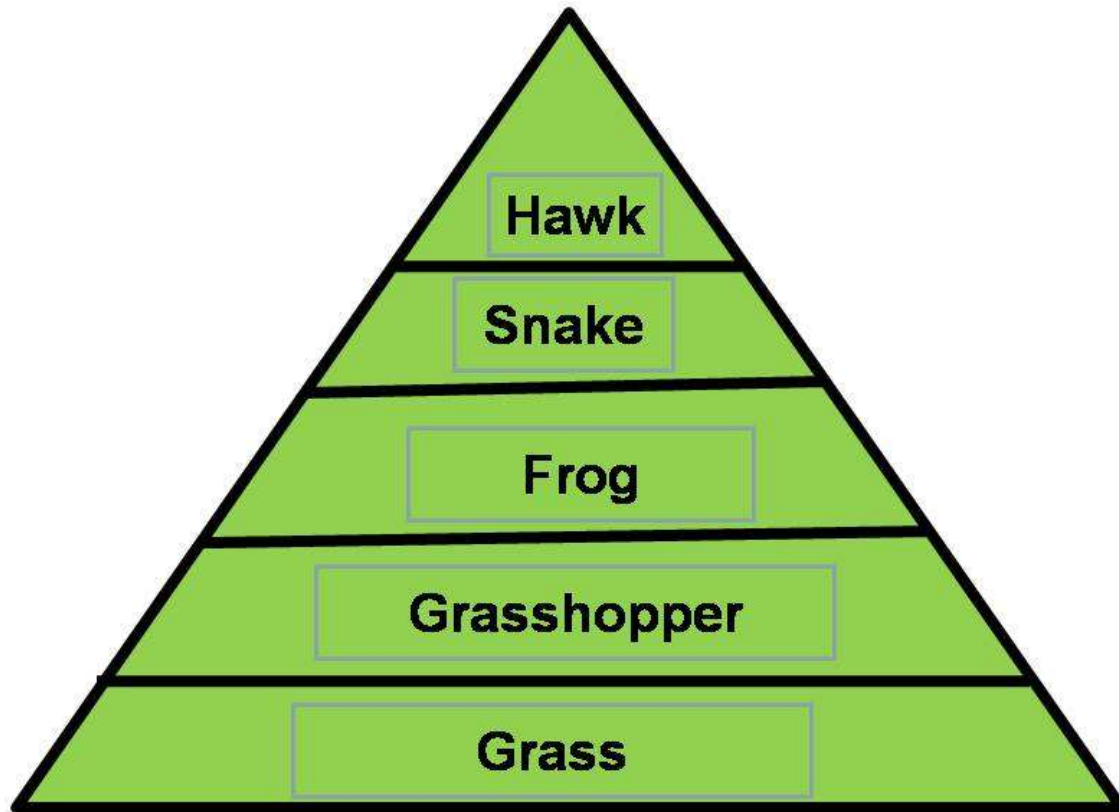
ECOLOGICAL PYRAMIDS

- 1. Pyramids of Numbers**
- 2. Pyramids of Biomass**
- 3. Pyramids of Energy**

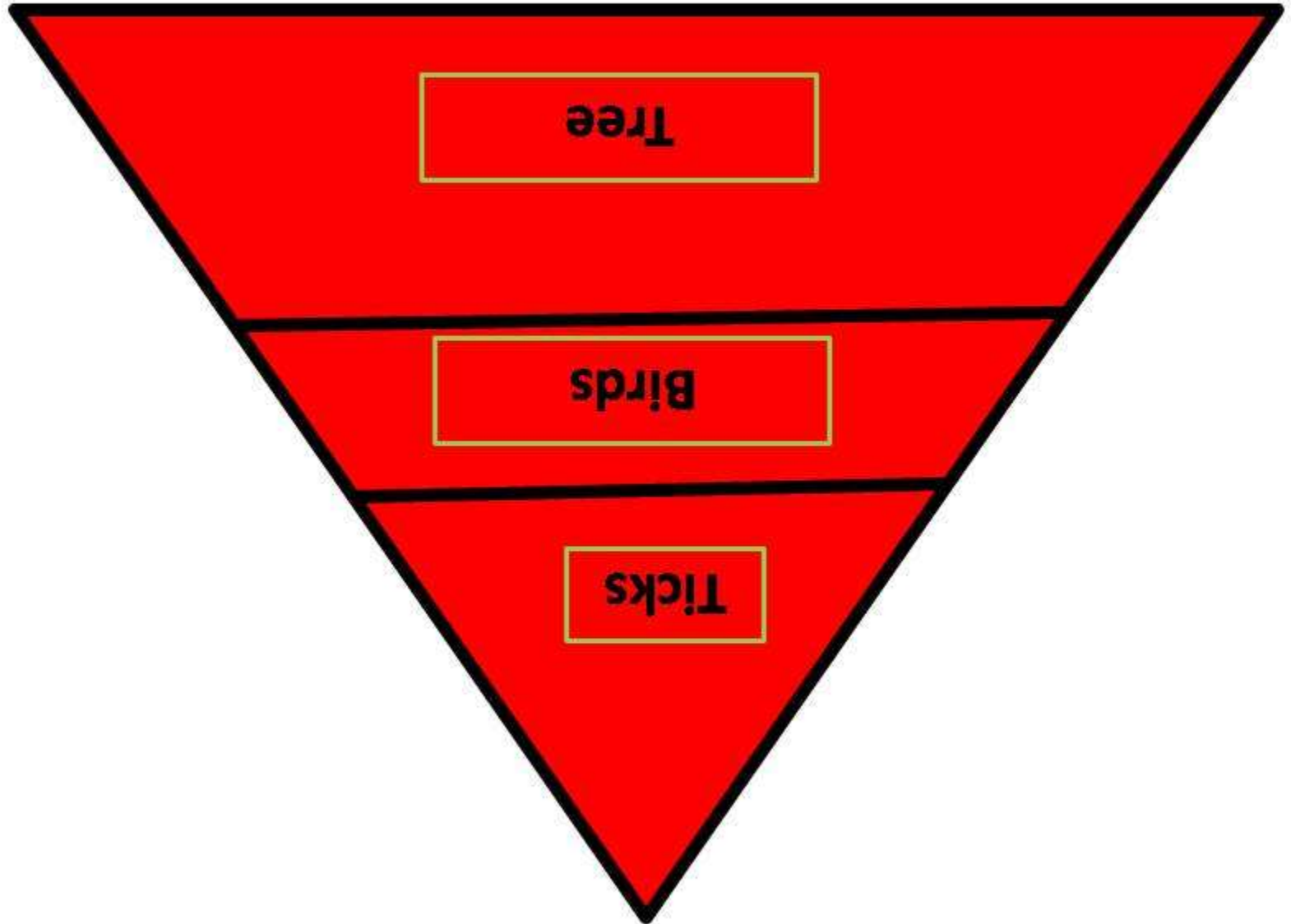
1. Pyramids of Numbers



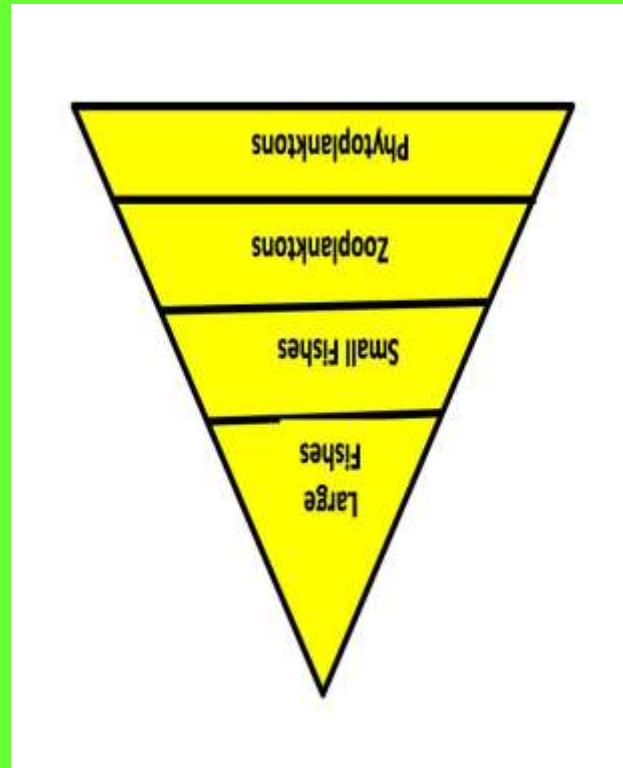
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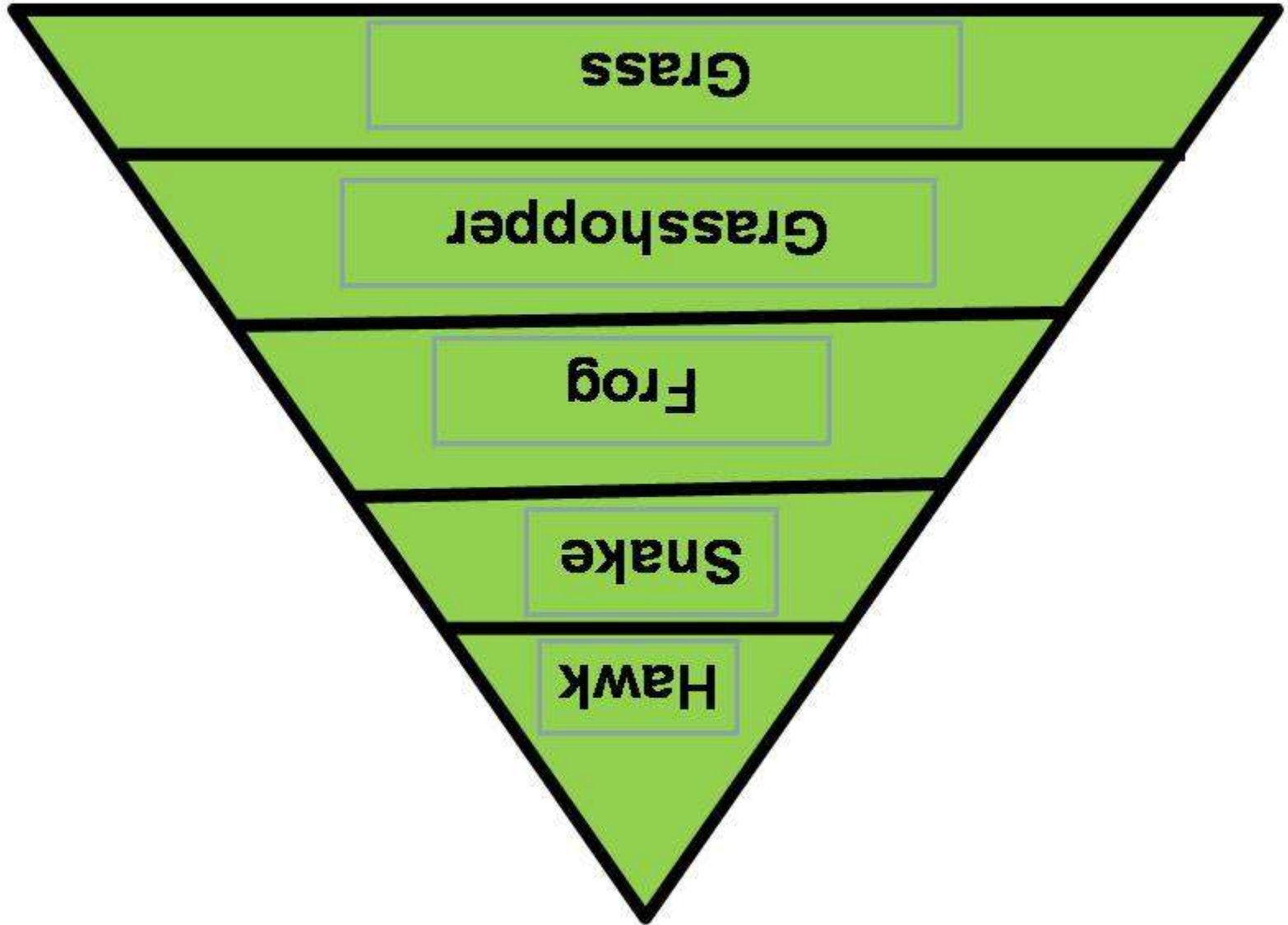
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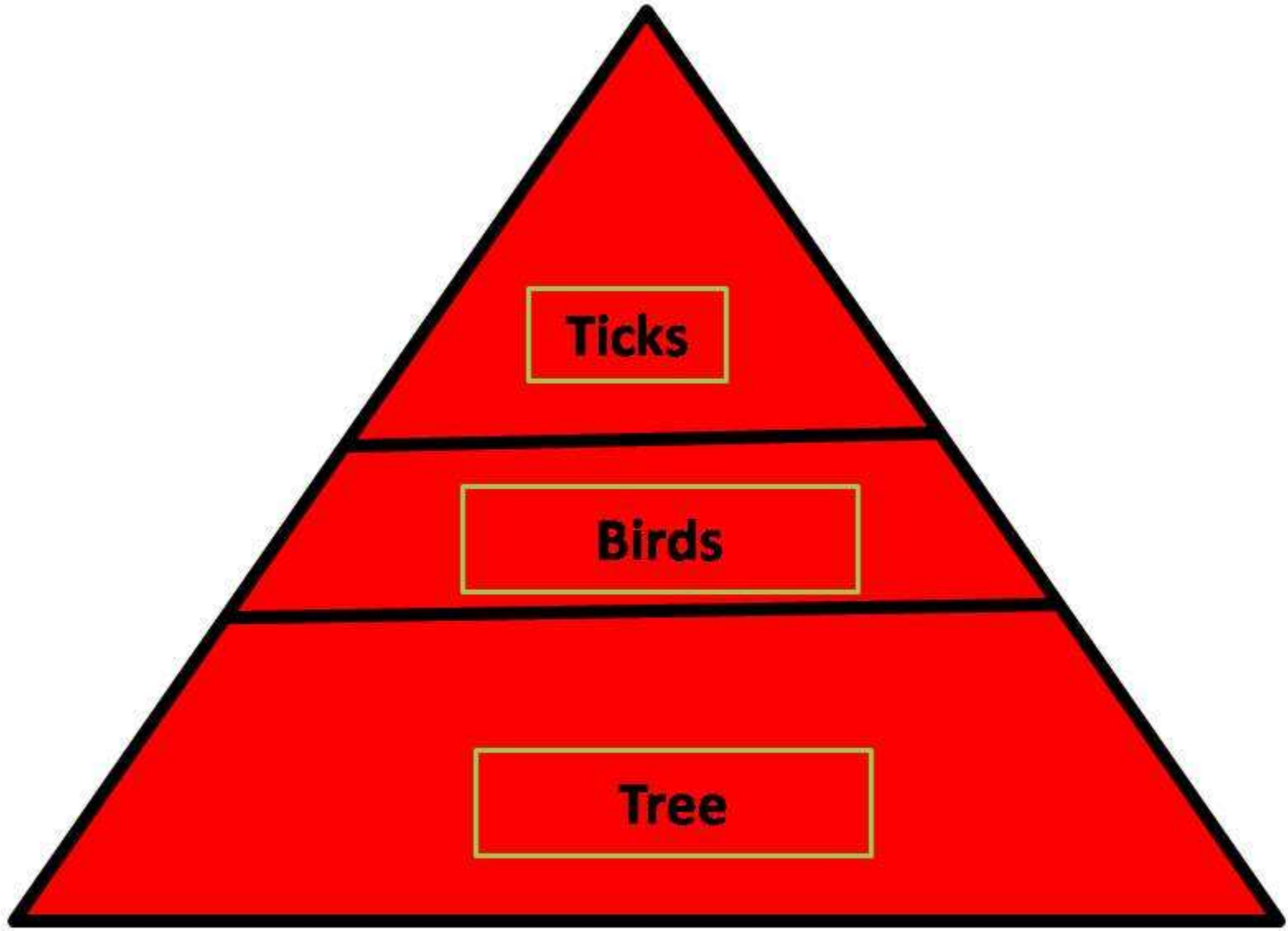


Pyramids of Biomass

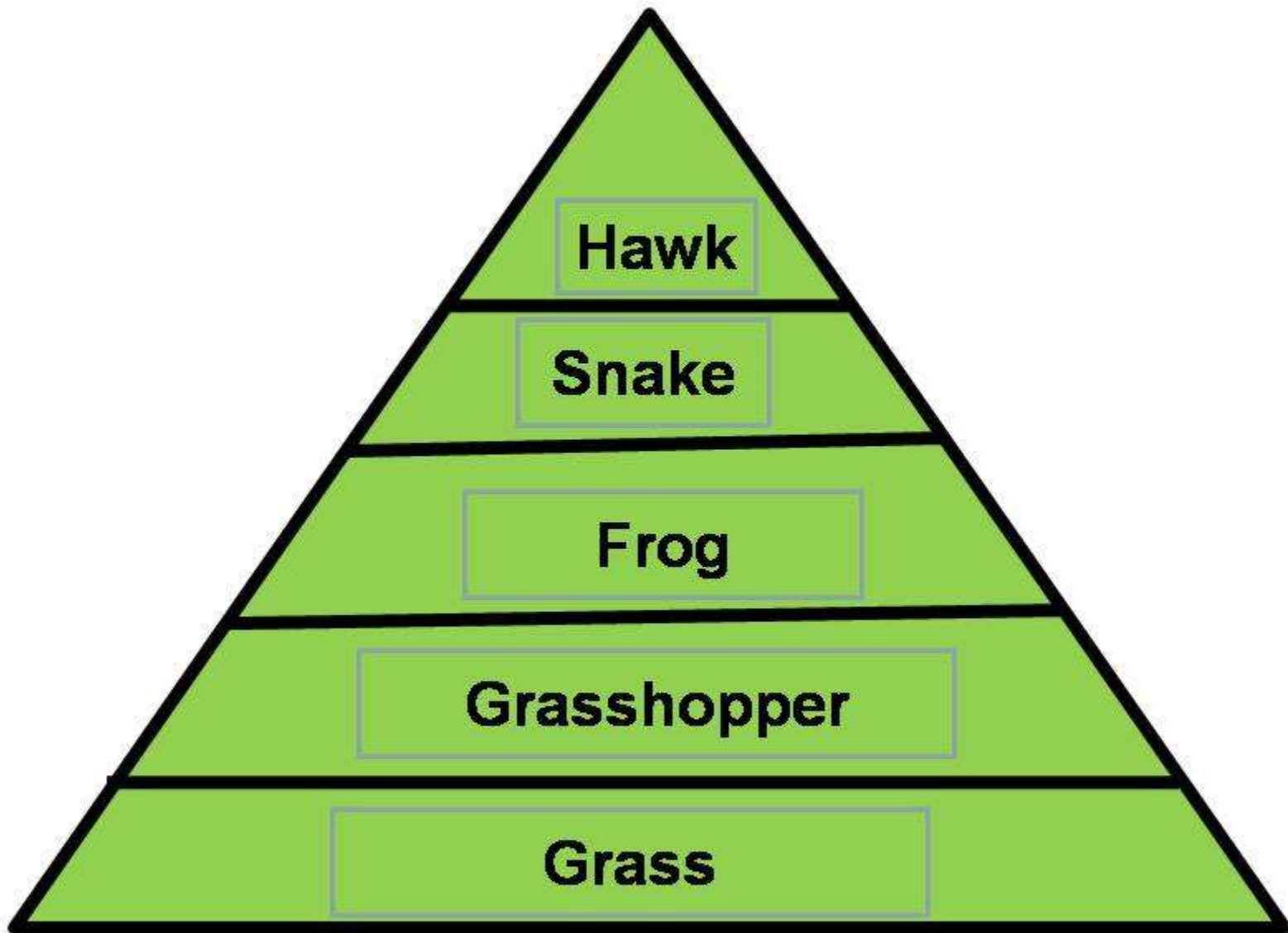


Pyramids of Biomass

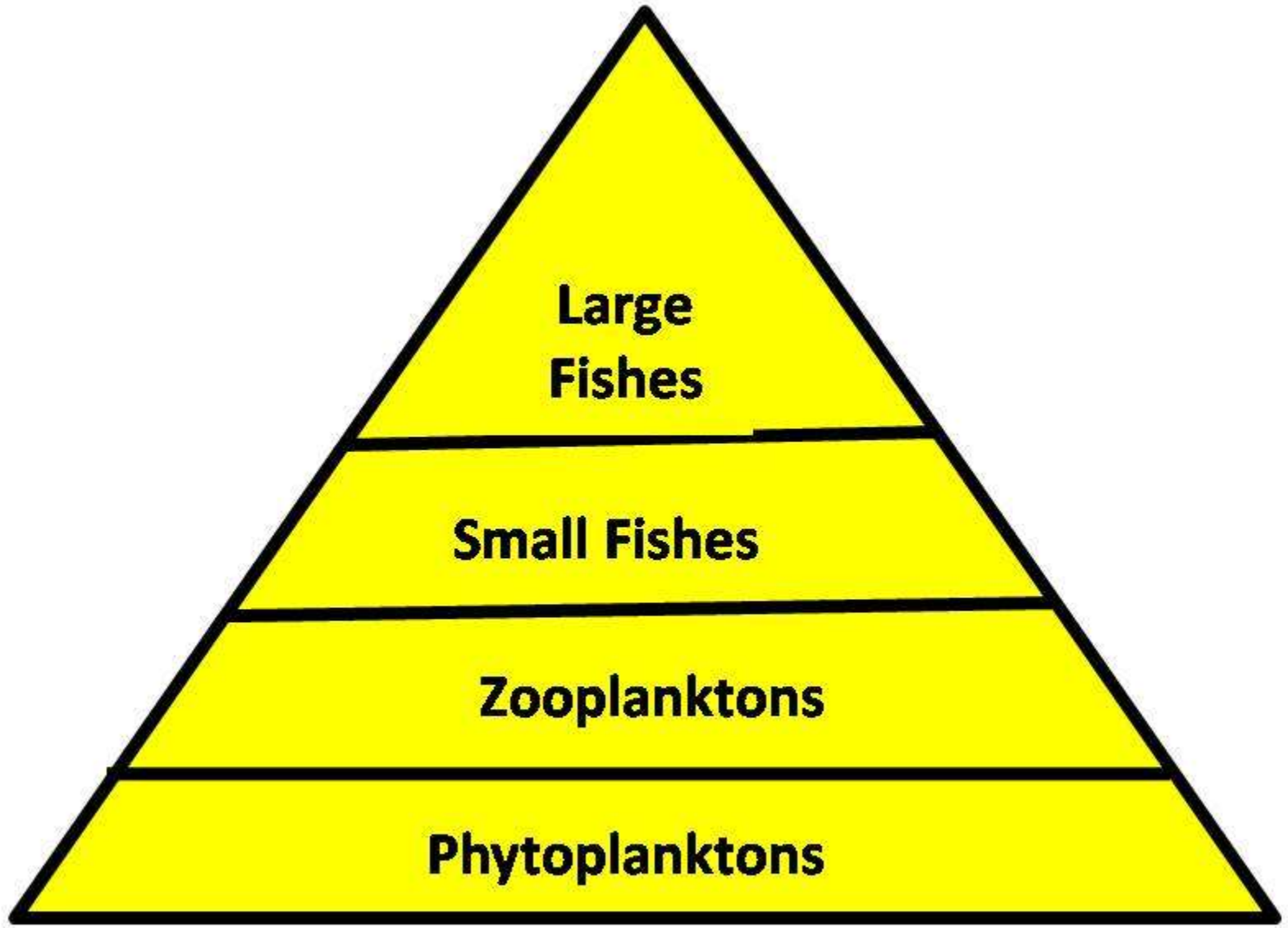




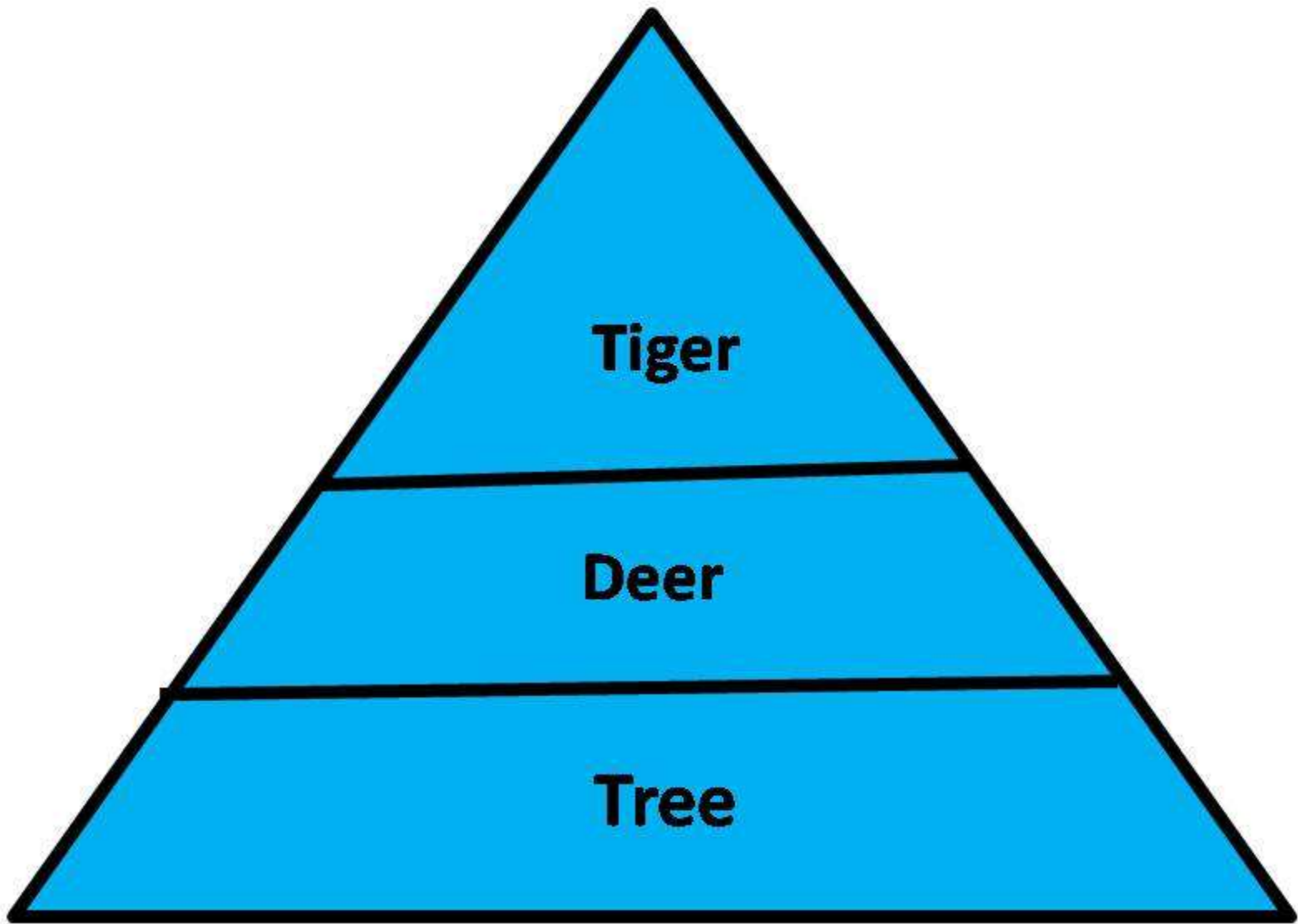
Pyramids of Biomass



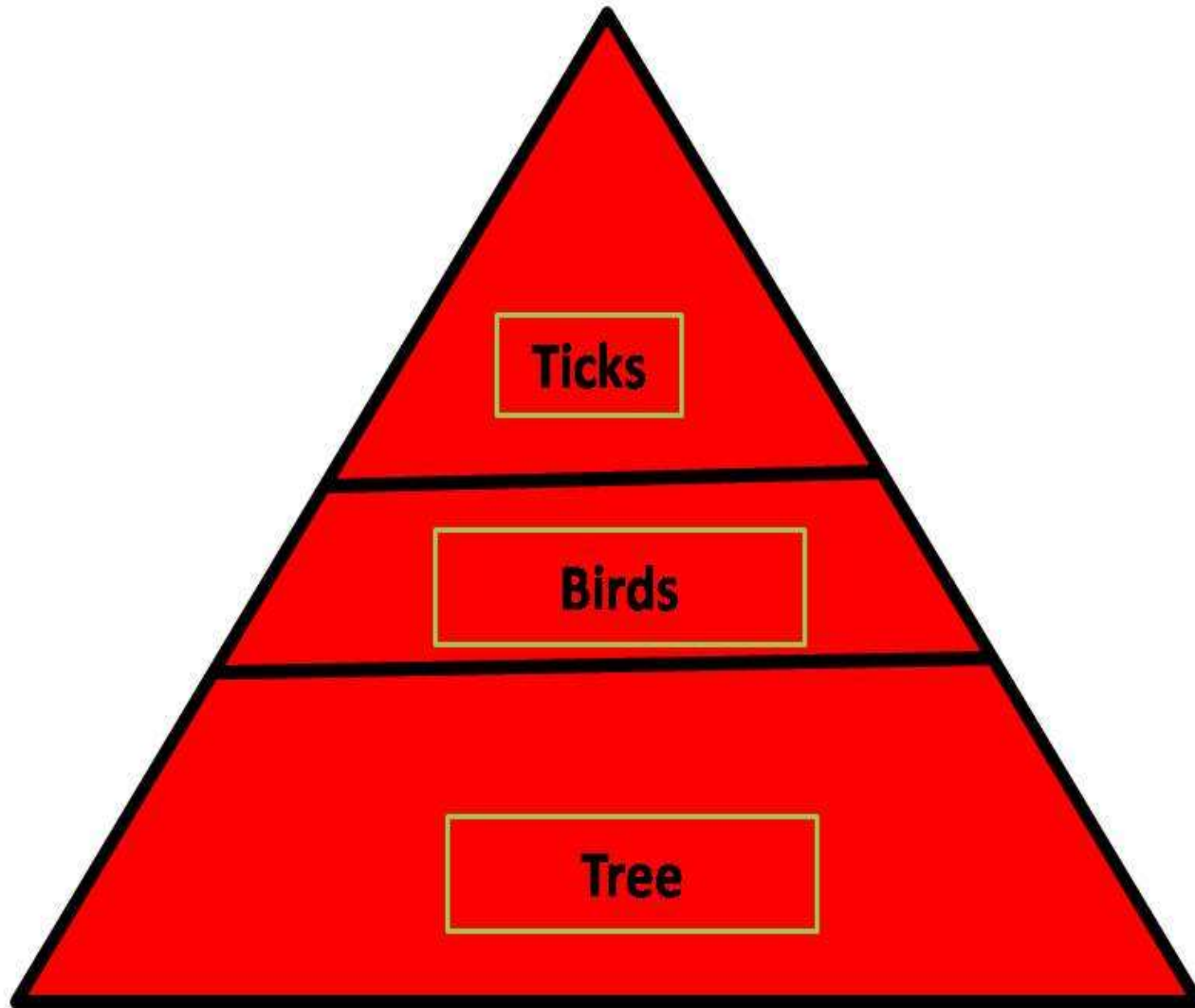
Pyramids of Energy



Pyramids of Energy



Pyramids of Energy



Pyramids of Energy