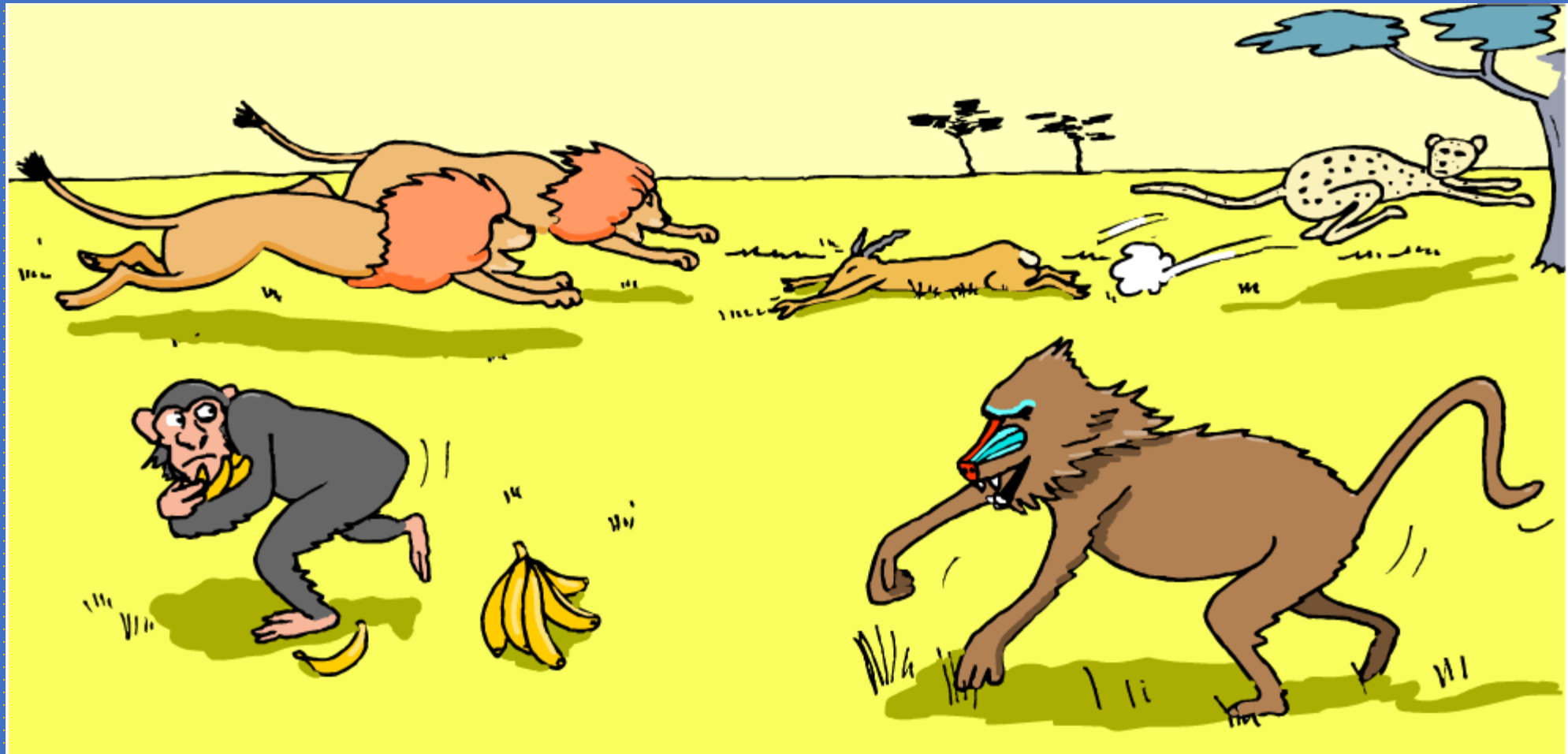


# Community Interactions



# **What do you know?**

**What ways do organisms interact with each other?**

**What impact on ecosystems could these interactions have?**



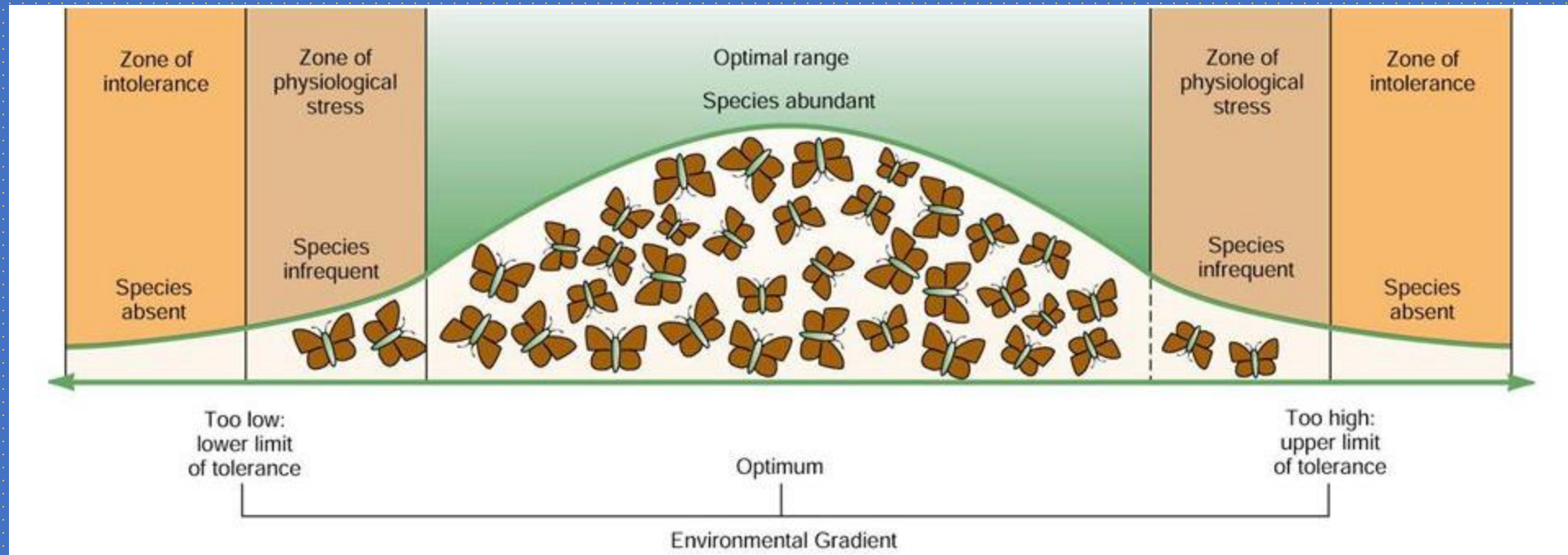
# Tolerance

Each species has its own tolerance:

Ability to survive & reproduce under a range of environmental circumstances.

- Temperature/Water Level/Food Availability/Toxicity Levels etc...

• **Cannot** survive past upper & lower limits



# Resilience

Ability to recover and adjust to change.

- In our current world, habitats and conditions are constantly changing.
- Ecosystems/Individuals must be able to adapt to this change or be destroyed



**"The bear-proof garbage containers  
have caused natural selection  
of a higher IQ."**

# Niches & Habitats

Different organisms live in different habitats and have different niches...

- **Habitat:** An organism's address; where an organism lives
- **Niche:** The role and position of an organism in its community (How it lives)



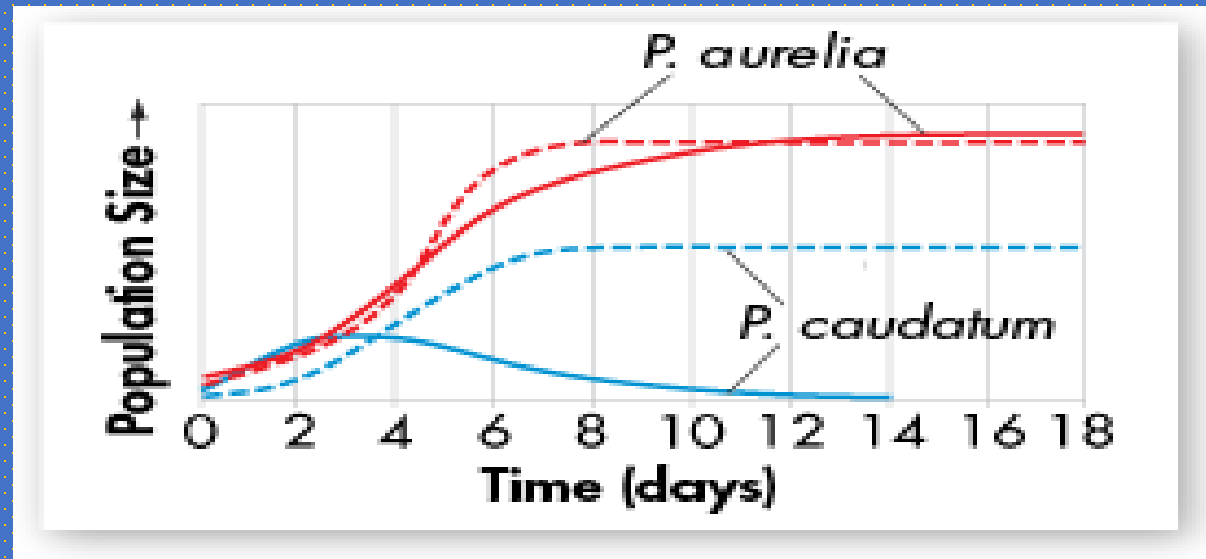


# Community Interactions

- **Competition**- organisms try to use the same limited resource in same place at same time

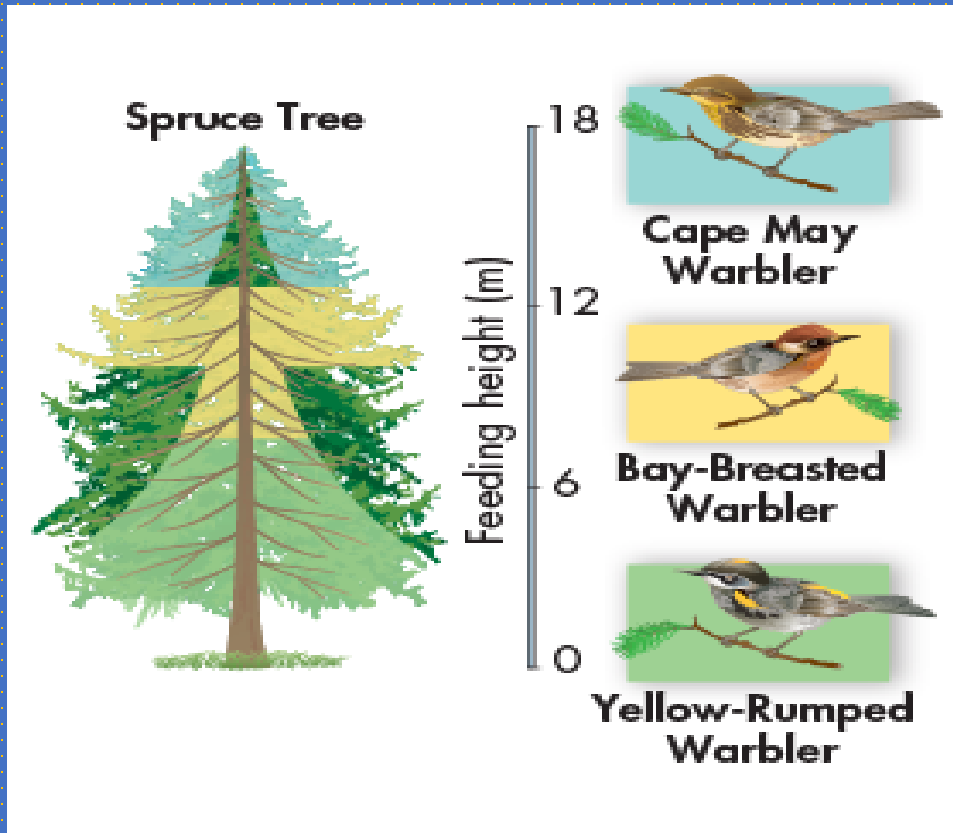


- Who is the winner/loser?



# Competition

- **Competitive exclusion principle**- no 2 species can occupy *exactly* the same niche in the same habitat at the same time
  - One will win (survive) and the other will die (death/extinction)



Does this example break the competitive exclusion principle?

*No! They may live in the same tree, but they live in different parts of the tree.*



# Community Interactions

- **Predation**- one animal (predator) captures & feeds on another (prey)
- **Symbiosis**- relationship in which 2 species live closely together
  - 3 types of symbiotic relationships:
    - **mutualism**- both species benefit
    - **parasitism**- 1 organism lives in/on another & harms it
    - **commensalism**- 1 organism benefits & other is not helped or harmed

“Good for you, good for me!”

# MUTUALISM

*Example: Ostrich and Gazelle*

These two animals feed next to each other in the grasslands. Both watch for predators and alert each other to danger. The visual abilities of these two animals are different so they are able to identify threats the other animal would not see.



*How would this bee and flower be an example of mutualism?*



# COMMENSALISM

“Good for me, doesn’t bother you!”

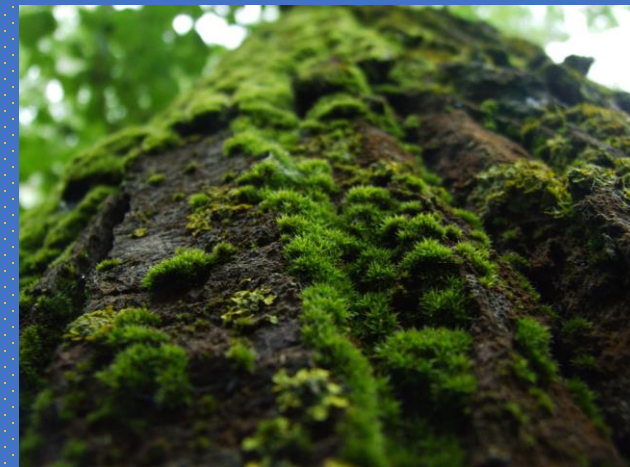
## *Example: Remora and Shark*

A remora attaches themselves to a shark’s body. They travel with the shark and feed on the left over food from the shark’s meals. This does not hurt or help the shark.



## *Example: Mosses and Trees*

Mosses grow on the trunks or branches of trees. They get the light they need as well as nutrients that run down along the tree. As long as these plants do not grow too heavy, the tree is not affected.



# Parasitism

“Good for me, hurts you!”

*Example: Cuckoo and Warbler*

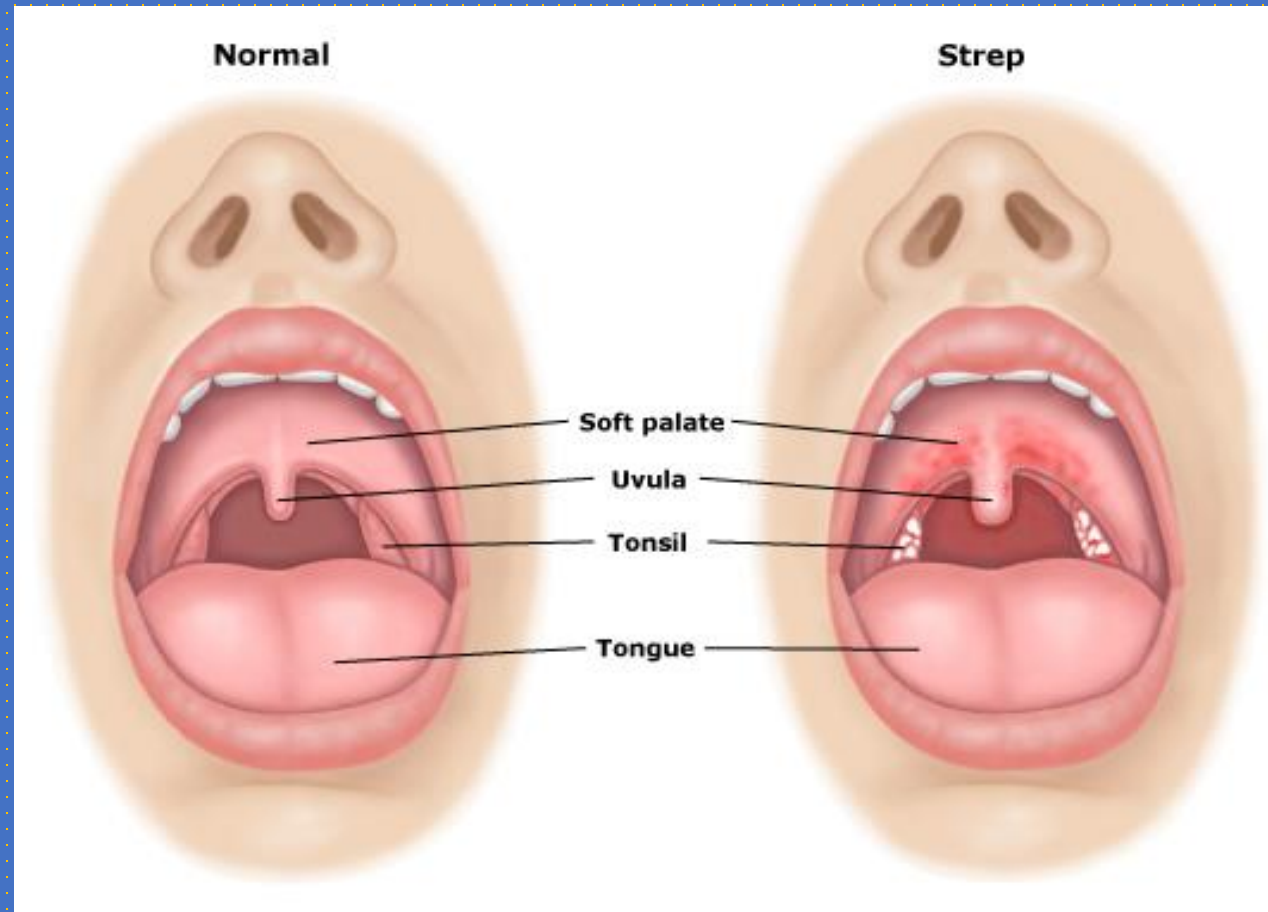
A cuckoo may lay its eggs in a warbler's nest. The cuckoo's young will displace the warbler's young and will be raised by the warbler.



*How would a tick and a human be an example of parasitism?*



Bacteria that is living in your throat and is therefore making your throat sore and swollen is an example of PARASITISM.



Epiphytes that live in trees in the tropical rain forest and get their water and nutrients from the air, so they don't harm the tree they live in is an example of

**COMMENSALISM**

