

# An Organism's Niche

- The unique role of a species within an ecosystem is a **niche**
  - An **ecosystem** is all of the organisms living in an area together with their physical environment
  - It includes their physical home, the environmental factors necessary for survival, and all interactions with other organisms
  - It is different than a **habitat** (where an organism lives)

# Ways in Which Species Interact

- Interactions are categorized by how one population interacts with another
- These interactions depend on whether they harm or help one another
- Some interactions are direct, others are indirect
- This is still being studied to better understand its complexities

# Competition

- A relationship in which different individuals or populations attempt to use the same limited resource
- Each individual can be harmed by the competition
- Can occur within or between species
- Ex. Fox and coyote compete for the same prey



# Competition

## Indirect Competition

- Some species may never come in contact with each other and still compete
- Ex. One type of insect during the day and another at night

## Adaptations

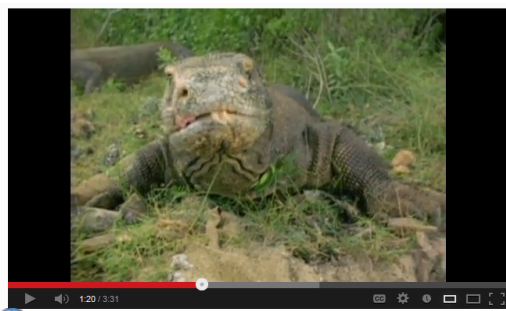
- Some species reduce competition with each other by adjusting their niche
- This is called *niche restriction*

# Predation

- An organism that feeds on another organism
- The organism that is fed upon is called the **prey**
- Ex. Coyote and deer
- Many species have evolved some mechanisms to avoid or defend against predators



# Predation in action...



Nature's Perfect Predators - Komodo Dragon



Golden Eagle vs. Jackrabbit



Download video as MP3 or MP4

Share / Save



Nature's Perfect Predators- Praying Mantis

# Parasitism

- An organism that lives on another organism and feeds on the other organism is a **parasite**
- The organism that provides the nourishment is the **host**
- Ex. Ticks, fleas, tapeworms, sea-lice



Uploaded on Apr 27, 2009

A parasitic wasp has injected her eggs into a caterpillar  
-- and now they're ready to hatch.





# Mutualism

- A close relationship between two species in which each species provides a benefit to the other
- Ex. Humans and certain types of bacteria in the intestines
  - Humans are better able to digest food and bacteria have a place to live



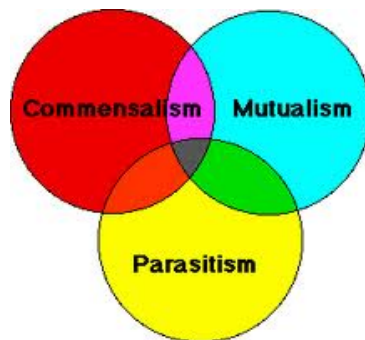
# Commensalism

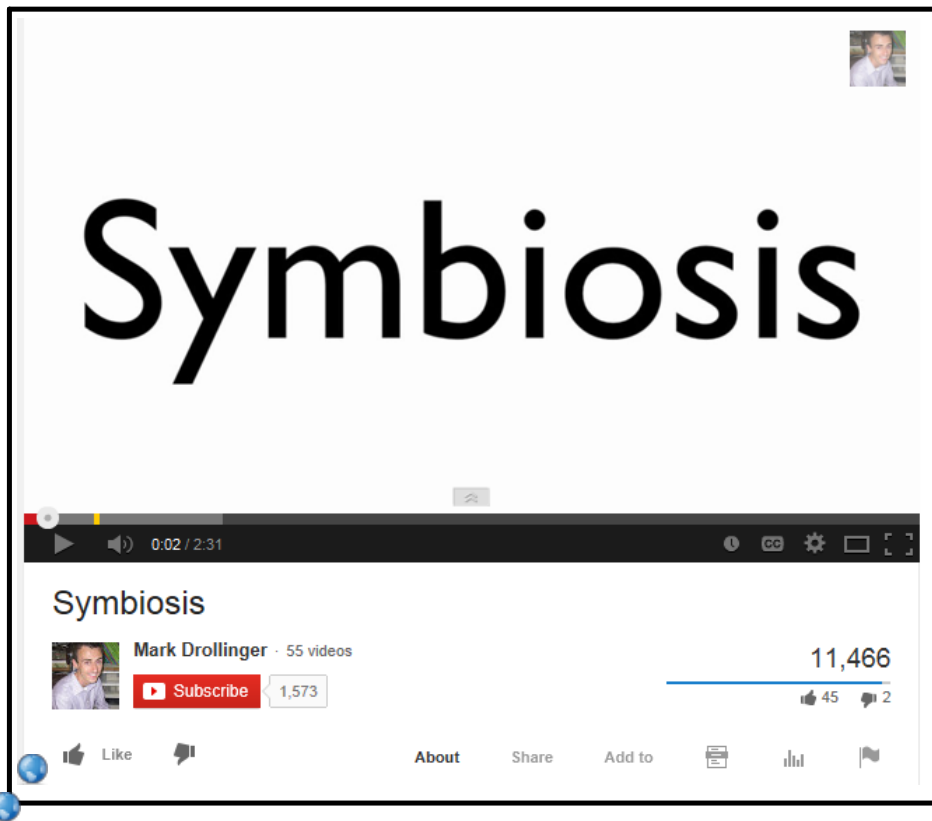
- A relationship in which one species benefits and the other species is neither harmed nor helped
- Ex. Sharks and remoras
  - Sharks are unharmed and fish are able to eat what the shark doesn't



# Symbiosis and Coevolution

- A relationship in which two organisms live in close association is called **symbiosis**
  - Symbiosis is often used to describe at least one species benefiting from another
  - Over time, the species may **coevolve**
  - They develop adaptations that reduce the harm or improve the benefit of the relationship



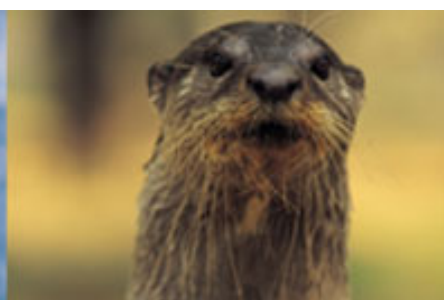


A screenshot of a YouTube video player. The video title is "Symbiosis" and it is by Mark Drollinger, who has 55 videos. The video has 11,466 views, 45 likes, and 2 dislikes. The player shows a progress bar at 0:02 / 2:31. The interface includes a play button, volume control, and various settings icons. Below the video, there are buttons for "Like", "About", "Share", "Add to", and a "Subscribe" button with 1,573 subscribers. A small profile picture of Mark Drollinger is visible in the top right corner of the video frame.

# CO-EVOLUTION...



Sea Lion



Otter

# SUMMARY...



The image shows a YouTube video player interface. The video title is "Symbiosis: Mutualism, Commensalism, and Parasitism". The channel is "Untamed Science" with 71 videos. The video has 112,012 views, 221 likes, and 19 dislikes. The video player shows a progress bar at 0:18 / 5:15. The video content features a jungle background with a large sign that says "Untamed Science". The sign is surrounded by portraits of the hosts: Jonas, Haley, Suze, Rob, Hazen, and Danni. A parrot is visible in the top left corner of the video frame.

Subscribe for our weekly science videos!

Subscribe

5,419

112,012

221 19