

# Meeting 4: Evolution, Plant and Animal Adaptations



<http://www.mooseyscountrygarden.com/hampton-court-flower-show-marquees/venus-fly-trap-plants.jpg>



# Learning Objectives

at the end of today's meeting you should be able to...

- Identify the assumptions of **evolution by natural selection**
- Explain why **trade-offs** are essential to understanding ecological and evolutionary processes
- Provide an **example** of a plant based adaptive trade-off
- Contrast the adaptive significance of the **C<sub>3</sub>, C<sub>4</sub>, and CAM** photosynthetic pathways
- Describe the **above ground - below ground** tissue trade off
- Explain key adaptive differences between **terrestrial and aquatic** plants
- Identify **key processes** common to all animals
- Explain why **scaling** is a fundamental constraint on the evolution of organisms
- Explain why **positive and negative feedbacks** are core concepts in ecology and provide an example of each

# Assignments

## Reading/Next Topic

Ch 8: Population Ecology

## Vocabulary you should know ...

primary & secondary producer, natural selection, fitness, adaptation, photosynthesis, rubisco, PEP, net photosynthesis, light compensation point, transpiration, water use efficiency,  $C_3$ ,  $C_4$ , CAM, acclimation, trade-offs,

scaling, herbivores, carnivores, omnivores, detritivores, homeostasis, positive & negative feedback, endotherms, homeotherms, ectotherms, poikilotherms, torpor, hibernation, biological clock, circadian rhythm.