Terms and concepts for the physiological ecology lecture

• Importance of nutrients and soils: role of topsoil
• What are some major macronutrients for plants. Which is one of the most important?
• How do plants get most of their nitrogen?
• What are mycorrhizae? What do they get from plants? What do plants get from them?
• What is the difference between ecto and endomycorrhizae?
• Special nutritional modes:
  o What is an epiphyte?
  o What is a parasitic plant?
  o What is a carnivorous plant?
• Adaptations to water availability: mesophytes, halophytes, hydrophytes, xerophytes. For each describe
  o General characteristics
  o Some examples
  o Some special adaptations, especially for the leaves (focus on xerophytes and hydrophytes)
• Stomata
  o Role of Potassium in opening/closing
  o Know the general structure and role.
  o What affects stomatal density
  o What is transpiration?
  o What are 4 cues to stomatal opening and closing
• Know some abiotic and biotic factors affecting growth and development of plants
• Be able to list some characteristics of Rubisco
describe photorespiration. What conditions will ‘favor’ photorespiration?
• C4 and CAM pathways: when are they used, what are the advantages and disadvantages, what is the mechanism. Be able to draw the general pathways
• What are some other ways plants deal with environmental stress
• Physical/mechanical, behavioral (eg. ant mutualists), and chemical (secondary compounds) defense mechanisms in plants.
  o Describe some physical mechanisms
  o Behavioral (using insects like ant mutualists)
  o Chemicals. Give some examples of secondary compounds
• How to compete with neighbors: Know what allelopathy is and how it is used – competition against other plants. What are some allelopathic effects?