

# Kentucky Class Notes

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BIO 152 McLetchie  
Fall 2010  
Test 1

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- Why do we study plants?
  - We study plants not only because they are interesting but they are very beneficial to human survival.
- Plants provide several **ecosystem services**.
  - Recall that an **ecosystem** includes all organisms as well as things like water, sun, atmosphere, and soil of a given area.
- The first ecosystem service plants provide is **producing oxygen**. Plants perform oxygenic photosynthesis. This is literally “oxygen producing photosynthesis. During this process carbon dioxide ( $CO_2$ ) is removed from the atmosphere and oxygen ( $O_2$ ) is released as a by-product. Without this, all aerobic organisms including humans would be unable to survive.
- The second ecosystem service plants provide is **building and holding soil**. This service is essential to help production of soil as well as preventing unnecessary loss to erosion by wind or water. Some examples of how this is accomplished are the root systems of plants and trees, as well as leaves, roots, and stems being broken when they fall to the ground.
- The third ecosystem service plants provide is **holding water and temperature control**. Plant tissue draws in and holds water. Areas with high amounts of vegetation are key in flood control as well as keeping water from running off before it can be absorbed in water tables. Plants provide shade which reduces temperatures around them,

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- The final ecosystem service plants provide is producing food. Plants are defined as being **primary producers**. This means they produce C-C bonds or carbon carbon bonds that other organisms can convert into energy. This makes plants the base of the food chain.
- Other vocabulary to remember:
  - **Herbivores**-plant eaters
  - **Carnivores**-meat eaters
  - **Omnivores**-all eaters
- \*even though plants respire carbon dioxide through cellular respiration, they use way more than what is released.

How do humans use plants?

- Food
  - We spend a large amount of money on researching crop plants. Over time, humans have gradually changed crop characteristics to be more desirable (seedless, bigger). This was accomplished through **artificial selection**, which is the process of selecting for desirable traits.
- Fuel
  - Wood burning was primary fuel source
  - Coal was the first fuel to replace wood in the United States and is made of partially decomposed plant matter that is compacted until hardened as rock.