

“IN THE WETLANDS, IT IS ALL ABOUT THE FLOW”

The wetland market place, “Food Chain”

by Larry Eichert 6/15

We are oblivious to the complex interrelationships that have taken hundreds of years to develop an energy efficient community of living things. Some relationships build up the soil - a living organism in itself, others help to provide food - a virtual organized pot luck dinner, a feast for those consuming the harvest of which they partake. Other members transport needed supplies by air and pathways into the community providing diversity and supplies. Still others take what is left over and recycle it back into the natural resources necessary for community development.

Each type of system is a subdivision of the overall community where every neighbor next door provides help to others allowing the community to survive and flourish. Nothing is wasted. The waste product of one organism becomes the food supply for another. A healthy, naturally functioning community (ecosystem) has its own unique plants (flora), animals (fauna) and decomposers (recyclers). These systems contain a food supply, water, light and air for both adult and immature creatures to survive. There are places for roosting, nesting and hiding from the elements or predators. The boundaries of the system are determined by the environment. Only certain forms of life can be sustained by those given conditions. The plant and animal populations are subsystems through which it functions. If you change the conditions the organisms within it will change. That is why “there are 11 different micro-ecosystems that can be seen in 76 different places within our community.” (“The Natural Stonybrook” articles introduction)



Because any type of environment is so complex it is best to divide its' parts into the Abiotic (non-living) and biotic (living organisms). The ultimate source of energy for all organisms is the sun. For most plants it directly supplies the energy necessary for them to grow (photosynthesis, in its various forms). Animals obtain their energy by eating the plants or other animals. All living organisms require a variety of chemical compounds and elements (carbon, nitrogen, phosphorus etc.) which they obtain from rocks in the soil, or dissolved in the water. These atoms are used by the organism's body and eventually are returned to the environment through, respiration, excretion, or death and decay. The amount, type, and concentration of these abiotic factors along with elevation, temperatures, the angle and concentration of sun light, plus the type and amount of water determine the various ecosystems on earth.

Each step in the flow of energy through the ecosystem is known as a trophic level. Producers (plants) form the first level. Herbivores (animals that only eat plants) form the second. Carnivores that eat herbivorous are the thirds level and carnivores that eat carnivores are the fourth level. Omnivores, parasites, and scavengers occupy different trophic levels depending on what they happen to be eating at the time. If you eat a piece of steak your or on level three and you are on level two when you eat salad. Each time energy moves up to a new trophic level (better known as the food chain) approximately 90 % of the useful energy is lost. (the second law of thermodynamics) Much of this is lost in low energy heat. In addition to this loss of heat organisms must expend energy to maintain their own life processes which eventually goes into the organisms surroundings. Next month; The food web and a climax community.