

Where it takes Newton's third law gradually not like humans

Ravi kiran M*

Department of Environment, Andhra University, Visakhapatnam

*Corresponding author: Ravi kiran M, Department of Environment, Andhra University, Visakhapatnam, E-mail: ravikiran5372@gmail.com

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Commentary

The organism provides the basis for study of ecology eventually leading to understanding the highest level the ecosystem. How does ecosystem functions? What gives an ecosystem its balance? These are some of the questions that come to mind when we think of a forest, desert or pond ecosystem. To gain some clarity on these, we need to understand how ecosystem works. In an ecosystem several kinds of biochemical processes take place. The two major processes that form the basis of ecosystem functioning are energy flow.

Any kind of work process either requires energy or releases it. Thus if we want to study the functioning or the working of an ecosystem, we must understand the basic principles and laws of thermodynamics in an ecological context. The first law of thermodynamics states that energy may be transformed from one type into another but is neither created nor destroyed. The second law states that no energy transformations are hundred percent efficient means energy always being transformed from a more useful to a less useful form. Under natural conditions energy tends to flow from a higher level to the lower one. This is a derivation from the second law of thermodynamics. The ecological implication of these laws is that energy cannot be produced in ecosystems from nowhere. Thus when we say productivity of ecosystems we are referring to the transformation of one form of energy into another. Secondly, the process of transformation of energy from one form into another or even the transfer of energy from one organism to another is never a 100 percent efficient all energy

transformations always involve energy loss in the form of heat energy which is not available to the organism. The amount of the loss may vary from one transformation process to the other, but it invariably occurs. In the light of these two laws of thermodynamics, let us try to analyse the energy flow in an ecosystem.

The ultimate source of energy for all ecological systems in the sun. The energy that enters the earth's atmosphere as heat and light is balanced by the energy that is absorbed by the biosphere, plus the amount that leaves the earth's surface as invisible heat radiation. When solar energy strikes the earth it tends to be degraded into heat energy. Only a very small part of this energy gets absorbed by the green plants and is subsequently transformed into food energy. The food energy then flows through a series of organisms in ecosystems. All organisms dead or alive are potential sources of food for other organisms. A grasshopper eats the grass a frog eats the grasshopper a snake eats the frog and is in turn eaten by a peacock. When these creatures die, they are all consumed by decomposers. Every organism in an ecosystem can be assigned a feeding level, referred to as the trophic level. It consists of those organisms in food chains that are the same number of steps away from the original source of energy. Plants would be grouped in the first trophic level, herbivores in the second trophic level, and carnivores in third level and so on. Once if we utter a word about damage that we are causing where it continues with no control. So let's plant a tree and remake this environment.