

Energy Flow through the Ecosystem

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Food Chain

Sunlight ? Plants ? Herbivores ? Carnivores ? Decomposers

You must be familiar with the above chain. Right? What do you understand from this chain? Yes, the Energy Flow!!

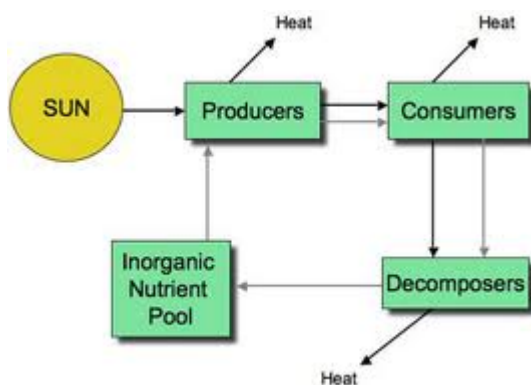
The energy flows through the ecosystem in the form of [carbon-carbon bonds](#) (C-C bond). Inorganic nutrients also flow through the ecosystem. During respiration the C-C bonds are broken and the released carbon is will be added to the atmospheric oxygen and become carbon dioxide.

Energy Flow

(C + O₂ ? CO₂)

During this above process energy is released. This released energy is again used by the organism or the energy may be lost as heat. Organisms use this energy for the movement of muscles, to digest their consumed food, to excrete waste, etc. Overall, all [physiological processes](#) need energy. The ecosystem receives energy from the sun and unfortunately all the energy of ecosystems is lost as heat. And it is very important to remember that the energy does not recycle.

The whole process explained in the below picture. You can see, the Sun provides energy to the ecosystem and the producers – the green plants absorb it and some part of energy is consumed by consumers and the rest of the energy released as heat.



Energy flows through the Ecosystem

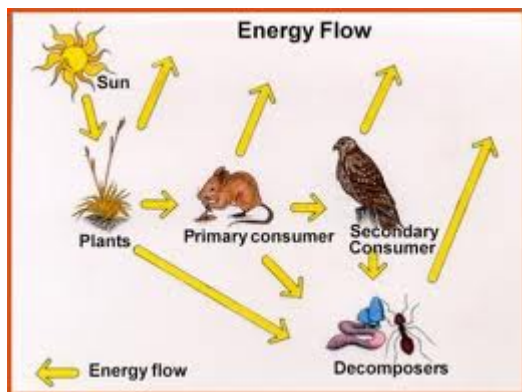
Due to the death of the consumers it is decomposed and the energy is passing on to decomposers and here also a part of heat is released.

Inorganic Nutrients:

In this picture you can see the inorganic nutrients. Why they are inorganic? Because, the C-C Bonds are absent.

The phosphorous present in human teeth, bones, and [cellular membranes](#) are some of the examples of inorganic nutrients. The autotrophic plants obtain these inorganic nutrients from the inorganic nutrient pool that is soil or water surrounding them.

Then these inorganic nutrients will enter into food chain if an organism consumed by another. Once the organisms die and become detritus, then the decomposers consume them as food. Decomposers will be collected as an inorganic nutrient pool (water or soil) rich with inorganic nutrients. This will again consumed by plants and the cycle begins again.



The Energy Flow through the organisms of Ecosystem

We can summarize the energy flow as

- The ultimate source of energy is the sun
- Energy in ecosystems lost as heat.
- Energy and nutrients are passed through the food chain.
- [Decomposers](#) remove the last
- Inorganic nutrients only recycled but not the energy.
- Flow in the ecosystem is unidirectional.

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Reference Links:

- <http://www.studentsguide.in/biology/eco-system/energy-flow-through-the-ecosystem.html>
- <http://en.wikipedia.org/wiki/Ecosystem>
- http://en.wikipedia.org/wiki/Food_chain
- http://en.wikipedia.org/wiki/Energy_flow

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