

# Research paper on ecosystems

[Environment](#), [Animals](#)



Question: Identify a natural ecosystem in which you live (Minnesota) or near to where you live? How does this ecosystem support you? At what tropic level are you? Why?

Chippewa National Forest located in Northern Minnesota gets its name from Chippewa Indians; the people from whose land the forest was initially created. The forest is rich in fauna and flora where pine maple, fir and many continue to densely cover the area. Moreover, the land is also a great habitat for wildlife such as woodpecker, bald eagle, red squirrel and several other animals. The Chippewa National Forest provides the animals with an appropriate nesting site and is especially known to host a dense population of the bald eagle. Like every other ecosystem, Chippewa National Forest is a great source of several things which are beneficial for the human beings (Rauchfuss, 2011).

The Chippewa National Forest has an abundance of water thereby having lakes, rivers and streams which sustain life. In this way, plants and animals continue to get everything for survival further making life easier for humans. Since humans depend on animals and plants for food and herbs, the Chippewa National Forest supports human (Rauchfuss, 2011). Also, the trees present in this forest absorb the nutrients from soil transporting it to the leaves which fall and eventually turn into an organic matter which regulates the supply of water by promoting plant growth and protecting the society from floods and erosion. Also, the trees absorb the sunlight and the air converting carbon dioxide and aiding in the process of photosynthesis which produces oxygen that is the basic necessity for human life. The Chippewa National Forest supports people by providing them with economy gains. The

wood obtained from the trees is not only a source of food or essential wood products, but it also plays an essential role in generating electricity and providing jobs. Hence, in this way, Chippewa National Forest being a natural ecosystem example supports human life in every aspect that fosters survival (Bolland, 2011).

Since Chippewa National Forest is a perfect example of a natural ecosystem comprising plants, animals and other species, this ecosystem can also be divided into different trophic levels; a term explaining food and nutrition. In relation to the Chippewa National Forest, non-vegetarian humans can be considered to be at the 2nd trophic level because since they depend on plants for their diet, they become the primary consumers. On the other hand, a non-vegetarian (like me) can be categorized in the third trophic level because of depending on animals which rely on plants. Regardless of the huge amount of energy lost between the trophic levels, animals as well as plants collectively provide humans with all the essential nutrients for a healthy life (Didier, Gue, & Pauly, 2003).

Question: Why can it be difficult to identify the boundaries of an ecosystem? How can environmental scientists resolve this boundary issue when studying an ecosystem?

Ecosystems range from a water drop to a complete ocean. In this regard, they exist at different geographical scales which ultimately make it difficult to identify the boundaries of an ecosystem. The trouble is usually associated with the change in the spatial capacity, location and the extent to which the ecosystem extends that is based upon climatic and seasonal changes.

The structure of an ecosystem changes seasonally as well as several times

within a year. Environmental fluctuations which affect the patterns of the Pacific Ocean universally impact the global weather bringing about substantial change in the structure and functioning of the ecosystems. In addition, ecosystem boundaries are also understood as zones between adjacent habitats. The transition zones are greatly affected by the density of animals and plant which continues to vary whereas for naturally occurring ecosystems, the habitat is often unique that is specific to life. Identifying the boundary of an ecosystem is a difficult process as it requires the selection of an appropriate scale which usually differs on the basis of ensuring ecological diversity and providing a proper habitat and ecological conditions for the survival of the species. In this regard, one way in which the environmental scientists can resolve the boundary issue while studying ecosystems is by understanding the proper implementation of the specific scales such as spatial and temporal which specifically measure ecosystem diversity as in the case of lakes and beaches. Also having in depth knowledge about the characteristics of the ecological boundaries can also aid in the study process of environmental scientists (Cadenaaso, 2003). The foremost step is to look into the idea as to from where did the boundary originate; was it just in the mind of the scientist, a line drawn on the map or was it a real demarcation between two places? Once this is decided, the next important thing to consider is the spatial structure of the boundary. In other words, knowledge about grain size, the extent of the boundary (scale), and thickness is of vital importance in identifying the boundary of an ecosystem. Moreover, it is also essential to know the purpose and the function of the boundary which may differ from one ecosystem to the other. Some of the functions include

transformation whereby which materials change into different forms as in the case of ammonia converting into nitrate at the edge of ground water. While identifying boundaries, the purpose of permeability should also be kept in mind due to which ecosystems allow some materials and organisms to pass through while restricting the movement of others. As a matter of fact, since ecological boundaries change over time making it difficult for the environmentalists to study ecosystems, the idea about the age and history of an ecosystem can resolve the boundary issues face by the environmental scientists (Strayer, 2003).

## References

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