A REPORT WRITING

ON

Environment Studies

TOPIC: Lotic Ecosystem

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INTRODUCTION

An ecosystem is a biological environment consisting of both biotic and abiotic components. All the organisms living in a particular area may interact with the nonliving.

An Ecosystem is a biological environment consisting of both biotic and abiotic component . All the organisms living in a particular area may interact with the nonliving (abiotic) physical components of the environment such as Air ,Soil , Water and Sunlight. Ecosystem are classified into water – based terrestrial ecosystem categoriel. Based on the quality of water involved the aquatic ecosystem are further classified into fresh water and marine water types freshwater ecosystem are a subset of earth's aquatic ecosystem . They includes lakes and ponds , river, streams and springs and wetlands they can be contrasted with marine ecosystem , which have a larger salt content freshwater habitats can be classified by different factors including temperature, light penetration and vegetation.

The freshwater ecosystem are generally classified into two major groups as lentic and lotic ecosystems. The term lentic ecosystem is given to standing water bodies or still water bodies like lakes, ponds,swamps or bags. The term lotic

ecosystem is given to the flowing water bodies. The Lotic ecosystem include all flowing water bodies like river , springs,creek . The subject of study of freshwater ecosystem is known as limnology almost all ecological factors like temperature ,light , PH, dissolved gases , dissolved salts in water , turbidity , alkalinity depth and areal distribution, all of these parameters play an active role in controlling the habitat of aquatic ecosystem.

- **Characteristics of Lotic Ecosystem**

Water flowing from and lakes and ponds is of the following three main types:

1)Currents: Currents are a controlling and limiting factor. Due to the smaller size and depth of the lake, the interaction of land and water is more in the flowing water body.

2)With the exception of polluted areas, most lotic water bodies contain more dissolved oxygen than lakes.

3)The temperature of water flowing from stagnant water is higher Moreover , the specific features of lotic water ecosystem is its speed or rate of water flow. The amount of water that passes through a particular unit is called the rate water flow. The velocity of water increases rapidly in the lower reaches of the river where the tributary river joins its main river.

Lotic water ecosystem can be divided in two parts based on the speed of water flow and the rate of flow. Namely:

1)Fast flowing aquatic environment &

2)slow moving aquatic environment.

fast flowing

Fast Flowing Aquatic Environment

The part of the flowing river in which the current is more and the direction is changing rapidly, this part is called fast flowing aquatic environment. The objects that flow through the current are other things that look like animals and sediments. The effect of the current is that the stones and pebbles become round and smooth. These habitats are more diverse. Physical parameters such as the rate water flow, the rate water flow between the top and bottom of the rock blocks and the flow rate below them are completely different . Different species can live in these micro habitats.Moreover aquatic plants are used as habitats for some fish that live in tidal environments. Phytoplankton are

rarely seen in this region. Phytoplankton in this region are Diatom ,Blue green algae, Green algae (e.g., Cladophora, Ulothrix) and water moss (e.g.,Fontinalis).

Slow moving aquatic

Slowly Flowing Aquating Ecosystem

A slow-flowing aquatic environment tends to be different in many ways from a high-flowing envivonment .As the current level is low, such water flow has less capacity to erode the land. A small amount of sediment and decomposed organic matter accumulates at the bottom.moreover , all these water flows have excessive temperature . As a result , such an environment contains a significant number of planktonic organisms, such as protozoa. Isopods , sowbugs, molluscs

(sphaenius, pisidium and anodonta dominate)and may fly, damsel fly, naids or tube , Chiromomus larvae and some other insert larvae oysters , nemadodes , snails and rotifers. There is also an abundance of swimming organisms in such pond. Notable fish species among these organisms are carp, suckers , spoonbill etc.

The freshwater ecosystem are flowing water that drain the landscape , and indude the biotic (living)interaction amongt plants, animals and micro-organisms as well as abiotic (non living)physical and chemical interaction of its many parts. The major zones in river ecosystem are determined by the rivers beds gradient or by the velocity of the current. Faster moving turbulent water typically contains greater concentrations of dissolved oxygen , which supports greater biodiversity than the slow-moving water of pools . these distinctions from the bisis for the division of river into upland lowland rivers.

This stream operation together with its environment can be thought of as farming a lotic ecosystem

The food base of streams within" Zapeno Liezie" forests is mostly derived from the trees; but wider streams and those that lack a canopy derive the majority of their food base from algae . Anadromous fish are also an important source of nutrients.

fish

crab

-Environmental threats to rivers include loss of water , dams chemical pollution and introduced species. A dam produces negative effects that continue down the watershed . The most important negative effects are the reduction of spring

flooding , which damages wetlands and the retention of sediment , which leads to the loss of deltaic wetlands.

CONCLUSION

Lotic ecosystem are extremely impacted by human activities and the intensity of stress could increase even further in future due to climate change and increased dispersal rates of invasive species. Fresh waters have seen the largest decline in biodiversity of any ecosystem , with lotic ecosystem particularly impacted by human activities. The main drivers of environmental change relate primarily to agriculture, urbanization, and industrial production that have resulted in severe habitat degradation im stream and rivers worldwide. The increasing impact of climate change and invasive species has put further pressure on these system the indicator used today ignore large parts of what in occurring in the ecosystem and cannot in most cases, diagnose the causes of degradation with reasonable precision.