

ides_a_unique_habitat_for_organism_such_as_resources.edited.docx

by Anyonymous Pro

Submission date: 10-May-2020 09:16PM (UTC+0300)

Submission ID: 1320953164

File name: ides_a_unique_habitat_for_organism_such_as_resources.edited.docx (20.96K)

Word count: 1354

Character count: 7221

The River Continuum concept

Name

Institution

Course

Date

1

The River Continuum concept

Headwaters is a section of a river with plenty of plants or organic matter that provides a unique habitat for different organisms. They offer an ecosystem with numerous resources, competitor free, and predator-free environment for aquatic species among other living organisms. The lives found in this habitat include fish, algae, birds, plants, invertebrates' amphibians and Desmans which is vertebrate species. Some of the organisms mentioned above depend on the headwater's environment for food shelter and protection, and this brings about different relationships in such areas. Waters in the headwaters area offers refuge to most of the organisms like fish, algae and amphibians. Fish depends on algae found in headwaters for food. Desmans is a kind of mammalian insectivore that capture invertebrates at the bottom of the headwaters stream. Besides, plants such as mosses and liverworts are found there and provide a home for small woodland organisms found in headwaters. Organisms like Big-Headed Turtle are also common and depends on such habitats to protect themselves from predators (Richardson, 2019). The mode feeding for algae is Photoautotrophy as they are self-feeders in the presence of Sunlight, carbon (Iv)oxide. Predation is the mode of feeding in this habitat with dippers feeding on small fish in the stream. The trophics here are plants and algae forming primary producers. Fish forms primary consumer as they feed on algae. Besides, in headwaters, the water is very shallow, and the bottom of such streams is rocky, limiting the growth of aquatic plants. Therefore, this means there is a shortage of food hence limits animals existing there. The benthic community are a common organism that forms a food web with mussels, and aquatic insects being dominant. The animals depend on stems, leave and some organism that falls into the river from the land. The stonefly nymphs feed by chewing and tearing stems. Interns, these stonefly nymphs are fed on by fish.

mid-sized streams

The mid-sized stream is a river section with a structure such as trees and rocks that perform an essential role in supplying autochthonous and periphyton materials. It also has floating algae and plants, and some animals live in niches (Maxwell & Johnson, 2013). There are grazers like snails as well as water pennies that depends on growing plants. There is a presence of more light that support different life processes. The presence of more light in mid-sized streams facilitate the growth of vegetation like periphyton, and this attracts a large proportion of grazers which feed on vegetation materials. There is a decreased organic matter in this section. There is a variety of large fish living deep and some at mid-level of the river (Maxwell & Johnson, 2013). Some flamingoes feed on small fish in the water. Here the rocks along the streams offer shelter and hiding places to fish in case of a predator. The vegetation cover forms primary producers as they are fed on by grazers. The birds feeding on the fish are secondary consumers in mid-sized streams.

The large, deep rivers are lower reaches with a large influx of materials. Mostly, the water is cloudy and turbid. More collectors are found here such as mussels and fish. Several organisms end up being scavengers while others act as omnivore and predators. The fish depends on small molluscs. Sunfish is a predator as it preys on insects. Plants like zooplankton are fish food. They form the primary tropic level. The rate of respiration is high than that of photosynthesis. Collectors and predators are more evident here. The fly larvae, as well as nematodes, are found in this section and mostly use adaptive features un catching and filtering any organic matter and feed on them (Maxwell & Johnson, 2013).

Question 2

- a) small, hot, intermittent stream in the open desert of Arizona

The communities of the open desert of Arizona need to focus on small, hot and intermittent streams which both forested and those found in desert areas. More focus needs to be placed on the streams and rivers in desert areas with an understanding that such streams like intermittent rivers are just temporary streams. There is a need to highlight ubiquity as well as the biodiversity of these natural and temporal waterways such that, they may benefit people. If well protected, a small, hot, intermittent stream will offer a sound ecosystem in the open desert of Arizona. The communities need to think of recognizing and protecting these temporal rivers and streams. Worded legislation recognizing their importance intermittency flow in hydrological regime during the period of discharge.

b) a large river with a well-developed floodplain that floods often

There is a lot to be done in ecosystems where floods are likely to occur. In floodplain, the communities concerned need first to understand the effects associated with flooding of the floodplains and then think of methods to control them. Just as many countries have done, communities in floodplain need to establish Reservoirs, Bunds, Levees and weirs as a protective measure against bursting banks of rivers. Besides, communities should think of planting vegetation cover as a way of retaining extra water and also constructing terraces on a hillside to slow the downhill flow of waters. Further floodways such as human-made channels can be made to divert water that is flooding (Dunne & Aalto, 2013).

c). a mid-sized stream with a point-source sewer dumping human waste into it

The communities concerned need to focus on reduction and avoidance of waste at all cost. Waste avoidance and reduction is achieved through waste minimization. Recovering and recycling

human waste like making biomass is a way that can help in reclaiming human waste from streams. The community can also develop better disposal methods whereby the pretreatment of human waste is done to change the characteristics of human wastes. This can help in reducing harmfulness of waste as they are disposed into the mid-sized stream.

3. The bioassessment method to monitor the lake affected by acid rain

To assess and monitor lake affected by acid rains will involve the use of Bio survey technique like the Rapid Bioassessment Protocols in detecting any form of impairments in aquatic life. Assessment of severity will follow. After the damage has been detected additional ecological data like chemical and biological toxicity to help in identifying the causative agent of the acidic rainfall after which it will be easy to establish the source and implement suitable mitigation strategy to monitor it.

The sort of naturally occurring extreme environment would be similar to that polluted habitat (Lake affected by acid rain) is an acid ocean. The surrounding of acidic ocean occurs as the carbon (iv) oxide increases and rises in the atmosphere as ocean water absorbs it. The seawater reacts with carbon (iv) oxide-forming carbonic acid, and this adds acidity in seas and oceans.

There is an adaptation of an organism that occurs in the naturally occurring extreme environment like the acidic ocean that would help them survive in the polluted environment. For example, according to Landy (2016), studies have shown that shrimp, Lobsters and crabs survive better in parts of oceans where the level of acidity is significantly higher. These organisms have some adaptations in the way they can quickly build strong shells. The strong shells make them survive in these acidic environments. Besides, Landy (2016) supports that there are specific seagrasses that grow well with a high concentration of carbon (iv) oxide. The grass can grow tall very quickly and reproduce in acidic waters.

Further, there are mixed fortunes in algae which is the source of food for zooplankton in the marine ecosystem. Some algae do better in a high concentration of carbon (iv) oxide with a valid number of them building shells of calcium carbonates. However, some suffer from shelling just as corals

References

Dunne, T., & Aalto, R. E. (2013). *Large river floodplains* (Vol. 9, pp. 645-678).

<https://stroudcenter.org/rcc/dlo/explore-midreach.html>

Landy, E. (2016). Animal adaptation for an ever more acidic ocean. <https://animalogic.ca/wild/animal-adaptation-for-an-ever-more-acidic-ocean>

Maxwell, R. & Johnson, S. (2013). The streams and rivers. Texas aquatic textbook.

<https://texasaquaticscience.org/streams-and-rivers-aquatic-science-texas/>

Richardson, J. S. (2019). Biological diversity in headwater streams. *Water*, 11(2), 366.

ides_a_unique_habitat_for_organism_such_as_resources.edited.

ORIGINALITY REPORT

4%

SIMILARITY INDEX

0%

INTERNET SOURCES

0%

PUBLICATIONS

4%

STUDENT PAPERS

PRIMARY SOURCES

1

Submitted to University of Texas at Tyler

Student Paper

4%

Exclude quotes Off

Exclude bibliography On

Exclude matches Off