Unit 4 discussion big ideas in science

Science

UNIT 4 DISCUSSION BIG IDEAS IN SCIENCE Part An example of a food chain of where I live is as below: Sun Algae Clams Sunfish Bass Human being

Human beings are classified as omnivores since thy can consume both flesh and plants. In this respect, Human beings occupy the middle position within the food chain. This is because they eat plants as the producers and at the same time feed on herbivores which are primary consumers and equally prey to the carnivores.

A food web has multiples of organisms in a series of food chains that are interconnected. Since food web does not follow a single energy transfer path, it is more of a self-sufficient loop that is able to sustain itself. Being part of food web is therefore helpful because elimination of one organism may not make the flow of energy to collapse completely.

Part 2:

In the Michigan food web, it is difficult to identify the most important producer since they are portrayed as collectively serving the next trophic levels by the arrows.

If the number of any producer is reduced, the primary consumers will starve and reduce in number. However, the secondary consumers will divert attention to other primary consumers and this will effectively reduce the overall population of organisms in the food web. Increase in any producer will bring an opposite effect of an overall increase in population in the ecosystem.

Impacts of humans on this food web

Human being will reduce the population of yellow perch which in turn lead to increase in native water flies and this in turn leads to reduction in the producers.

Human being will reduce the population of yellow perch which in turn lead to decrease in bloater and this in turn leads to increase in opossum shrimp and the native water flies decreases leading to increase in the producers.

•Propose a mechanism for how this fish was introduced to Lake Michigan.

This fish must have been transferred from another ecosystem when having eggs for fertilization into this new place.

•What challenges could occur within a food web when a new predator like this is introduced into an ecosystem?

Introduction of another predator will reduce their food stock hence make them starve and reduce in number while other organisms down the trophic levels will also be adjusted in numbers.

•What natural population controls are missing for this species within this food web?

The natural population missing for sea lamprey is other predatory fish like shark among others.

•Do you think steps should be taken to eradicate this species from the food web? Explain why or why not? If so, what steps can be implemented?

This species should not be eradicated because it plays a critical role in regulating the population in this ecosystem hence ensuring that maximum capacity is not exceeded.

Reference

Belgrano, A. (2004). Aquatic food webs: An ecosystem approach. Oxford: Oxford University Press.