OLMEFE Environmental Assignment R.H.O (7) RHI GEL 3.26 E.A.O MAGIO's cop

PALEOECOLOGY (1)

Ecology is the study of the causes of patterns of distribution and abundance of organisms. It is concerned with interaction between individuals and their physical, chemical and Biological environments. It is related to environmental Science as physics is to engineering. It provides the scientific framework on which conservation programmes can be set up. Paleoecology is the study of fossil organisms and their environments

ECOLOGICAL FACTORS.

The main ecological parameters consist of the following: Salinity, temperatures, food and oxygen supply

SALINITY: The most detering ecological barrier known to us is the salt content of the sea water. Only very few plants and animals species can strive in a range of salinity extending from sea water to fresh water. Thus some organism (Plant and animals) are Stenohaline ie can only thrive within a strictly narrow range of Salinity. Some are Euryhaline ie such organisms have a broad range of Salinity for their existence, such plants and animals can be found in almost any environment. Salinity is measured in part per thousand (ppth). Sea water of the open sea has a Salinity of 35%

The majority of benthonic animals (Echinoderms, Crustaceans, Annelids, Mollusc.) can only endure minimal fluctuations in the Salinity (Osmotic pressure) of their environment.

Animals, living in shallow water, tidal zones

the environment which have an immediate effects on the intercellular fluid and hence on the cells must be compensated, without some compensation reduction of the environmental salinity would cause water to flow into the cells which would swell and burst conversely, increase in salinity result in shrinking of cells. This processes can be countered only by active alteration of osmoti pressure in the cells and the intercellular fluid water is expelled and ions are actively taken up within the cells osmotically effective amino ac synthesized and broken down. On the basis of salinity water masses are divided into brackish, marine, hypersaline and fresh water.

TEMPERATURE : This is an environmental factor that is so easily measurable, some organisms reach their optimum in warm temperature while oth do so at cool temperature. Their metabolic activi perform better at such temperatures. Temperatur is also important in the seperation of bioprovince and some faunal groups. The biochemical activiti of plant also respond to temperature change in various ways. Transpiration is one of such ways.

FOOD : Food plays a very important role in th life of plants and animals. Food specializatio is evident in the structures or form of an animal. Carnivores all have shorter digestive

tracts than herbivores even when they are members of the same species. The intestine of plant eating tadpole is very long. whereas the of the adult, a carnivores frog is very shor Abundance of food can lead to population explosion in animals as seen in the regions of upwelling where the number of a species increases significantly, scarcity of food can make the effect of predation more noticeabl in a population.

Even with respect to the basic nutrient – carbohydrates, fats and proteins, it is known (Benson and lee, 1975) that animals make qualitative on their food. This substance must be available in the form the anind can utilize and in the right proportions, they must contain the right amount of the essential amino acids and fatty acids. Roe dee fed with the highest quality meadow hay on which the red deer and cow thrive, lose weight and eventually die The Roe deer rumen is very small and cannot break up the cellulose of the cell wall fast enough The Roe deer require food that is much more digestable containing little cellulose. In the field they subsist almost entirely on the buds of leaves and flowers.

LIGHT: Light is a factor which permits life to exist on the planet earth. Very few habitat, the deep ocean, the deep zone of some inland water and caves do not receive enough light with the correct spectral composition. Light is necessary for photosynthesis. There is always enough light in most habitat, thus the productivity within a habitat is not dependent on the amount of light only, the level of production is rather dependent or dictated by temperature and water supply, as well as presence of minerals.

OXYGEN SUPPLY: Organisms require oxygen to break down organic matter and obtained energy. In the absence of oxygen, less efficient metabolic pathway can provide energy. Certain organism are capable of living in an environment with low or reduce level of oxygen, such situation arises in under water or in the soil, terestrial organism rare encounter such situations, Under water when there is diminished oxygen supplied, anoxic environment benthonic animals become scarce, this is because adequate metabolic activities of the body cannot be sustained in such environment. Supply of oxygen to lakes or aquatic environments is derive from two sources,

1. Oxygen can diffuse into water from air. This is a slow process and it supply oxygen to underly

layer only if the surface water moves into the depth. This type of circulation can take place throughout the lake by strong winds.

2. The second supply of oxygen comes from aqua plants, Algae which floats in open water like Plankton. These are of course restricted to the upper lower level. When water is heavily fertil with a large number of planktonic algae due to high nutrients. Some parts become deprive of oxygen during such bloom. The dead planktonic algae sink to the bottom in vast numbers and when they are decomposed by bacteria — a process which consumes oxygen. The oxygen at the bottom of the river or lake can be used up completely, so that all the bottom dwelling animals will perish. In lakes with nutrients, Planktoni algae can carry on photosynthesising at depth of up to 50m due to the clearity of the water and the deep penetration of light.