International Journal of Physical and Social Science
Vol. 8 Issue 6, June 2018,
ISSN: 2249-5894 Impact Factor: 6.644
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate as well as in Cabell's Directories of Publishing Opportunities, U.S.A

Impact of pollution on Macrobenthos in River Saryu in Chhapra district

KumariTulika
J. P. University, Chhapra

Abstract

The present study was carried out in the River Saryu of Chhapra district of Bihar . Benthos can give us reliable information on stream , river and lake water quality.Benthos represent an extremely diverse group of aquatic animals and the large number of species possesses a wide range of response to stressors such as organic pollutants, sediments and toxicants.Benthic communities can be used to monitor stream quality condition of a broad area.In present study we studied impact of pollution on macrobenthic in River Saryu in Chhapra district

Keywords:-

Benthos, pollutants,toxicants, sediments , River Saryu ,aquatic animals

Introduction:

Benthos is the community of organism which live on, in or near the seabedalso known as the benthic zone.These animals are wide spread in their distribution and can live on all bottom types even on man- made object.Unlike fish benthos cannot move around much sothey less able to escape The effect of sediments and other pollutants that diminish water quality.therefore benthos can give us reliable information on stream river and lake water quality. Their long life cycles allow studies conducted by aquatic ecologist to determine any decline in environmental quality.

The firm term benthos comes from a greek noun which mean depth of the sea. Benthos is aslo used in freshwater biology to refer to organism at the bottom of freshwater bodies of water such as lakes, river and streams.Fresh water benthic macroinvertebrates or more simply benthos are animals without backbones that are larger than 1/2 millimeteri.e size of a pencil dot

Materials and Methods :

The present study was carried out in the River Saryu of Chhapra district of Bihar.Bihar is located in the eastern part of india between latitude 21°-58'-10N - 27°-31' -15N and longitude 82°-19'-50E -88°-17'-40E.Saryu River is the an important tributary of Ghaghara in India.It flows southeast through Uttar Pradesh and Bihar takes to join the Ganges down stream of the town Chhapra after a course of 1080km.

Samples were collecting from River Saryu at the Rivilganjghat which is sampling station .The samples were collected with the use of an Ekman dredge and secured in bucket with US standard sieve no 40.The whole samples were sieved from the plankton net made up of nylon bolting silk mesh size 0.03 mm to 0.04 nn to obtain the benthes with the help of forceps or brush for preserving the same in 4% formalin. The residual organic matter retained in sieve was transported to the laboratory for further collecting of benthes. To this 5 g of surcose was added for easy collecting of benthos. Samples were preserved in 70 percent ethanol. The samples counting was done with the help of Lackey's drop method .Where a known volume of water which below a 22 mm coverglass is placed over a glass slide. The volume is one drop taken by a dropper.Organism in this drop are counted in a high power microfield of a compound microscope.

Result and discussion :

The benthic macro invertebrate fauna of the main channel of River Saryu comprises 70 indentified taxa a with high diversity of 22 species of annelids 30 species o mollusca . 18 families genera or species of arthopoda .The biology and habitat of benthic organism often determine the causes of cyclesof abundance and decline and to determine the impacts of pollution andhabitat degradation.Unlikepredator benthos can not move around much so they are less-able to escape the effects of sediment and other pullutans that diminish water quality.Living macro fauna are more sensitive to environment any disturbances making them potential bioindicators of the changes in the water and soil environment.Some benthos is found more often and larger amounts in water that generally clean or unpolluted by organic wastes .Without too much organic matter the water usually have lots of oxygen for benthos .This use as an indicator of water quality has been occaring for many years .Stone flies phylum arthopoda are oftem considered to be indicator of clean water.But due to increase of pollution in River Saryu the benthos i.e. Stoneflies cannot survive more.Molluscans usually do not tolerate pollution as high as do tobefiex and chironomidsgastropodai.eMelanoidestuberculata , M.scarba , Vivipara ,. BengalensisLymenea ,accuminata , and Gyrausconvexusculus were found in non polluted water with rich dissolved oxygen and in good water quality. In the present study it was also observed that some species of macro invertebrate were found to decrease in number or disappear from the polluted river.

Conclusion :

A benthic study may be used as baseline in formation to evaluate the prevailing condition.Form above mention we can say that decrease in number ofGastropodai.e

phylum molluscans in River Saryu due to impact of pollution. Because we studied earlier that molluscas were found in non polluted water. In the present study it was also observed that same species of macroinvertebrate were found orbecame less in number of from the polluted River Saryu .It shows impact of pollution on macroinvertebratein River Saryu .

Refrences :

1. J.D.Elias, J. N. Ijumba. Y. D. Megha, and F, A, Mamboya. Study on fresh water macro invertebrates of some Tanzanian rivers as a basis for developing biomonitoring index for assessing pollution in tropical African regions"Journal of Ecosystems, vol, 2014, page, 2014.
2. Nautiyal et at (1998) studied al;titudinal variation in phytobenthosdensity and its component in the cold water mountain River Alakananda , Ganga .
3. K.Suleimwn and I, Abdullahi, " Biological assessment of water quality a study of Challawa river water Kano Nigeria" Bayero Journal of Pure and Applied Science, vol, 4, no. 2 pp- 121-127- 2012
4. J. Soedarso and Y. Wardiatno, Assessment of the Quality Status of the River with Macrobenthos as Indicator, Pena Nusantara, Bogor, Indonesia, 2015
5. Data Munshi, J.S. G.N Singh and D.K. Singh 1988 Ecology of fresh water polychaetes of River aGangaJournal of Freshwater Biology 1 : 103 : 108 .