Exploring the Environmental Value of Ecosystem for Amani Shah Nallah

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***Abstract*– Ecosystem can provide us with material things that are essential for our daily lives, such as food, wood, wool, and medicines. No matter who we are, or where we live, our well-being depends upon the way ecosystem works. There are some benefits of ecosystem which play an important role in regulating the environments in which we live. We are also protected from flooding or other hazards like soil erosion, land slips and also ensure the flow clean water with the virtue of it. Contribution towards spiritual value, cultural or religious significance, recreation and enjoyment of nature is also.**

Keywords- Chlorination, Electrical conductivity, Turbidity, Heavy metals, Toxicity, Total dissolved solids, Chemical oxygen demand.

I. INTRODUCTION

Water pollution is major problem. It causes damage to the human health, natural vegetation, agriculture and ecosystem in different ways. Due to lack of water farmers of Jaipur are growing vegetable crops with polluted water. Jaipur city is discharged through Amanishah nallah are finding way. Without filtration and purification, it is used for irrigating vegetable crops so the vegetable crop which grows there becomes polluted. Although pants are getting rich space manure containing water supply which increases growth and production yet at the same time they stand for destruction of pathogenic fungi, nematodes virus and bacteria cause fatal diseases. Manure production has spread to almost every part of industries and many research scholars have devoted themselves to the development of clean technologies in the industries which are engaged in textile printing.

Cleaner production, which has been developed in recent years is prominent for protection of environment and for higher success rate, has decreased environmental pollution, preserve natural resources from massive depletion and generally to control the bad environmental impact of economic activities [1]. The current problem with polluted industrial waters in developing nations is the absence of treatment prior to environmental discharge, combined with the formation of huge amounts of wastes when treatment is processed. Indeed, whether the treatment method uses chemical, biological or electrical means, large amounts of sludge are produced which are difficult to handle and dispose Industrial progress and development of global population have led to an excessive contamination of ecosystems particularly marine environment, by metals over the last three decades. Environmental pollution has become a worldwide phenomenon. Pollution of water bodies is a phenomenon of concern in the developing countries of the world including India. Industrial effluents urban runoff, disposal of wastes into the water bodies agricultural fertilizer and animal wastes remain the major water contaminants. It is also reported that textile and dyeing industry are major environmental threats because of the large amounts of water and dyes used in the manufacturing process [2]. Large amount of chemically different dyes is employed for various industrial applications including textile dyeing.

II. STUDY AREA

Sanganer town is situated 20 km away from the railway junction of Jaipur. Sanganer town lies between 26°49'N to 26°51'N latitude and 75°46' to 75°51'E longitude. The total area of Sanganer is about 635.5 sq km. Many industries discharge untreated waste water in Amanishah Nalla. Sanganer which is famous for its textile hand printing work. Mainly Chhipas community is engaged in dyeing and printing of textile as small scale industry. Sanganer is very famous for a special type of printing known as 'Sanganer Printing'. This type of printing requires huge amount of water for color fixation and it creates water pollution. The chhipas either wash clothes at their wells in the city or bring the cloth on wells dug on bank of Amanishah Nallah. The Amanishah Nallah is being polluted for years due to discharge of waste water into it and due to inflowing domestic waste water of Jaipur city. We had researched other areas like as Goner, Gayatri nagar, Sitapura.

III. TECHNICAL DETAILS

A. Origin

The problem that results in causing adverse effect to the life of human being as well as aquatic life, because people are consuming that vegetable, which have been grown in this polluted water and at the same time, polluting the environment. The residents are having various diseases due to extraction of gases and foul smell and due to various dissolved solvents, aquatic life cannot survive.

B. Definition of Problem

In Jaipur, Amanishah Nallah is acquiring large area in the centre of city. In Amanishah nallah many industries are dumping their waste directly into it. Due to this, these are causing diseases for those who consume its water either directly or indirectly. Now a days, people are cultivating vegetables and fruits which are very hazardous in these

forms, so it is creating a large impact on environmental and social aspects.

C. Objective

To determine the quality, water of Amanishah Nallah and if it is toxic then to suggest respective authority to take proper measures to control it.

IV. OBSERVATIONS

TABLE I. WASTE WATER QUALITY PARAMETERS

Name of test	Sample 1	Sample 2	Sample 3
1) Total solid test	1520 mg/l	1121mg/l	1082 mg/l
2) Total dissolve solid test	826 mg/l	521mg/l	625 mg/l
3) Suspended solid test	452mg/l	358mg/l	467mg/l
4) Settable solid test	10 mg /l	6 mg /l	12 mg/l
5) pH of sample	5	4.8	----
6)Conductivity	-------	-------	------
7) C.O.D. test	985 mg/l	854 mg/l	1452 mg /l
8) B.O.D. test	125 ppm	69ppm	83 ppm

The table shows the results of the various parameters and different tests conducted on the sample.

V. FACTORS AFFECTING ECOSYSTEM BY AMANISHAH NALLAH

A. Natural factors

1) Flooding

Flooding can be part of the natural hydrological cycle, and is essential to the ecosystems. Hydrological connectivity between floodplains and rivers is maintained through flooding. When a river is flooded, then it deposits nutrient rich sediment on the banks of the river, and in turn washes bits of vegetation into the river that becomes food for organisms living in rivers. Floods can also replenish lakes and ponds found within the flood plain, and water table can be raised due to this. The perched basins in the Peace-Athabasca Delta, when flooding is introduced through damming or extreme events it can be detrimental to an aquatic system until balance is reached. In the case of dams, achieving this balance is just a matter of time—one habitat is destroyed and another is created. In the case of extreme flood events, the balance often occurs once the flood has receded and the aquatic organisms can rebuild their habitat in a more nutrient rich environment.

2) Beavers

Beavers can alter the structure and dynamics of an aquatic system through dam building and feeding. These modifications can include (Naiman *et al*. 1986):

- The creation of wetlands through flooding of the riparian zone;
- Alteration of channel hydrology and geomorphology;
- Changes in nutrient cycling and decomposition;
- Increased holding time of sediment and organic matter due to reduced velocities;
- Alteration of the riparian zone including species composition and dynamics;
- Influence of habitat and thus the overall species found in the altered habitat; and
- Impacts on the material transported downstream of the altered area.
- The beaver's ability to alter its environment and create new habitat makes it a keystone species, because its removal would affect all species that rely on these habitats.

B. Human affects

Oil sands operations and pulp mills release gases and small particulate matter (PM) into the atmosphere. These substances can then be deposited on the land or water by dry or wet deposition (when rain or snow bind to the gases or particulates).

Sulphur dioxide (SO_2) and nitrogen dioxide (NO_2) are examples of contaminants found in the atmosphere. These gases are associated with acid rain and the acidification of sensitive lakes and soils in the oil sands region.

Mercury is of particular concern in the northern rivers of Alberta. At the regional level mercury, is primarily emitted from coal power generation plants near Edmonton and in lesser amounts from the oil sands operations (NREI 2002). Mercury can travel long distances through the atmosphere and is eventually deposited in aquatic environments, where it can be toxic to aquatic organisms.

VI. RECOMMENDATION

There is a need of treating effluent water by central effluent treatment plant and removing heavy metals before utilizing this water for crop plants.

VII. RESULT& DISCUSSIONS

Textile industry effluents collected from several point sources of water pollution. The results related to physic - chemical characteristics of textile effluents. In the present study pH was found to be maximum in October. The results indicated that pH values range between 7.30 to 9.38. Minimum pH (7.30) was found in January 2016 and maximum pH (9.38) was in Oct. 2015. E.C. ranged between 0.76 to 1.20 mm hos its maximum concentrationi.e.1.20 was found in July 2011and minimum in January 2016i.e. 0.76. Total solids ranged from 970 mg/L was found in October 2015 and maximum 2011.2 mg/L in Jan. 2016. Similarly, Chloride values ranged between 284.60mg/L in oct. 2015 and578.3mg/L was maximum in Jan. 2016. Calcium and Magnesium hardness ranged between 40.24 was minimum and 90.46mg/L was maximum and 520.4mg/L minimum to 997.4 mg/L maximum. The Total Hardness was between 560.4 to 1133 mg/L.

In the present study the maximum concentrate on 1.024 mg/L of lead was recorded from textile waste water maximum permissible limits of lead is 0.1 mg/L. Desirable limits of lead is .05mg/L beyond this limit water becomes toxic. Average concentration of copper and cadmium 4.95 mg/L found in the textile water samples is more than the permissible limits [3]. Average concentration of cadmium

1.65 mg/L cadmium level was found high in industrial area. Average concentration of ferrous 0.168 mg/L found in textile water samples is more than permissible limits. Chromium metal was found 3.78 mg/L it was higher than permissible limits.

The permissible limit for Cr is 0.05 mg/L. Average concentration of zinc and nickel was 3.59 mg/L to 0.045mg/L [4].

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