

IMPACT OF SOLID AND LIQUID WASTE ON WETLAND

Akshita Verma

Lecturer Of Biology

D.A.V Inter College Aligarh, Uttar Pradesh

ECOSYSTEM & ITS IMPORTANCE FOR HEALTH AND WELL BEING

Ecosystem is defined as interaction of abiotic and biotic factors to form a bubble of life. Life as well as economy is dependent upon ecosystem services.

Wetlands- These are areas where water covers soil either all the year or during growing season. These are most valuable ecosystem of earth. It only covers 6 % of earth's surface, but provides high number of ecosystem services. Examples- Ponds, swamps, marshes etc.

ECOSYSTEM SERVICES PROVIDED BY WETLANDS-

1. During heavy rains, wetlands absorb excess water, limiting the effects of flooding.
2. Wetlands protect coastal areas from storms.
3. It recharges groundwater aquifers.
4. It produces foods & goods for human use.

 **But these wetlands are polluted by dumping solid and liquid wastes into it which has serious impact on health & the environment.**

METHODOLOGY

This project aims to identify the impacts of solid and liquid waste on wetlands which is also an important part of ecosystem. It directly affects health and well being of aquatic as well as terrestrial flora and fauna.

During the conduction of project work we visits different wetland sites of Aligarh and observe the quantity of solid and liquid wastes present in wetland and wrote that record in notebook. We also went to municipal corporation to collect the data of dumping of solid and liquid wastes dumped into wetlands. We also observe the impacts of this on local people as it causes various diseases in aquatic animals & waterborne and other diseases in human population and other animals too.

DATA COLLECTION

We collected data by visiting different wetlands of Aligarh and firstly identify the sources of presence of solid wastes in wetlands with the help of municipal organization.

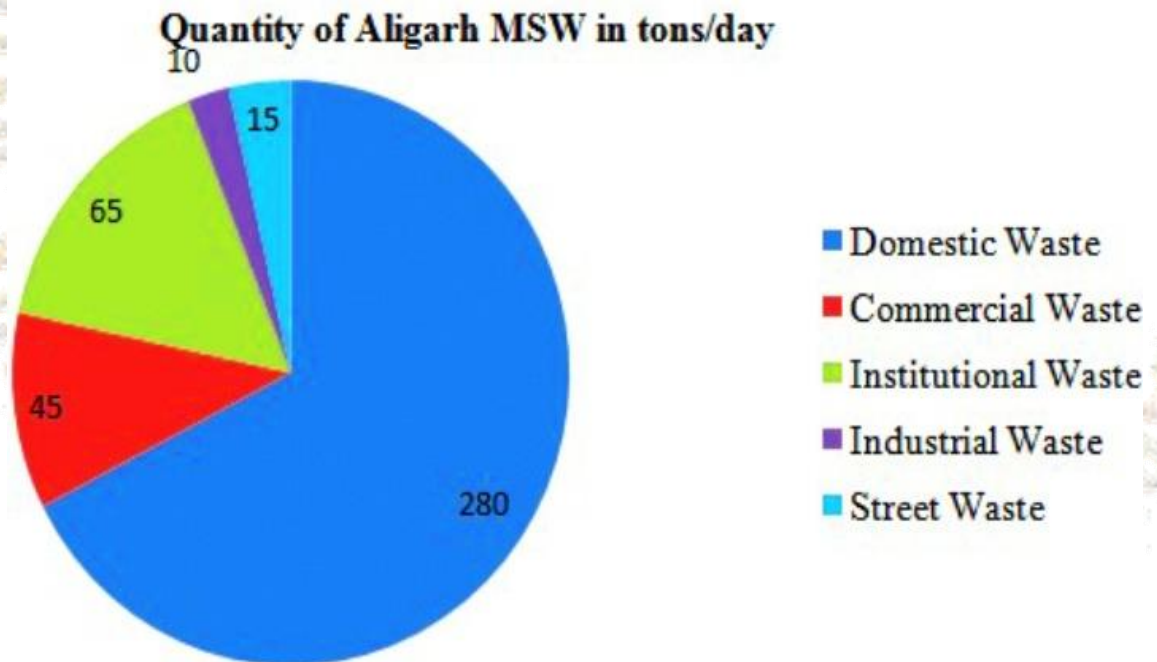
SOLID WASTE IMPACT ON WETLAND

SOURCES OF SOLID WASTE IN WETLAND-



DATA OF SOLID WASTES IN WETLANDS COLLECTED BY MUNICIPAL CORPORATION OF ALIGARH

Types of Waste	Quantity in tons / day	Item	Percent by weight
Domestic	280	Organic Content	55.2
Commercial Waste	45	Inert/ Stones / Ashes	19.6
Institutional Waste	65	Paper	12.8
Industrial Waste	10	Plastic	4.5
Street Waste	15	wood	0.6
Total Waste = 415 tons/day		Bones	2.3
		Metal	1.8



RESULTS OF DATA COLLECTION NEGATIVE IMPACTS TO THE WETLANDS BY SOLID WASTE & ITS EFFECTS ON HEALTH

S.No.	KINDS OF SOLID WASTE	IMPACT TO THE WETLAND & HEALTH AND WELL BEING
1.	FOOD WASTE	May cause a bad odour and pollute water.
2.	SMALL PIECES SUCH AS CIGARETTES	Birds may eat them which introduce hazardous chemicals in their body.
3.	PLASTIC FILMS	May cover the bottom of the wetlands & damage the aquatic insects. May also cause wound onto plants in the wetlands.
4.	PLASTIC STRINGS	May damage birds by winding to their legs.
5.	PLASTIC BOTTLES	May float in the wetland & generate hazardous substances which kills aquatic animals like- fishes.
6.	BATTERIES	Introduce harmful & poisonous substances (Mercury, Zinc, Lead) which poses threat to aquatic flora and fauna.
7.	FLUORESCENT LAMPS	May introduce mercury in wetland which causes diseases in aquatic animals.
8.	RADIOACTIVE WASTES	Uranium, radium etc. exposure in wetlands causes cancerous growth in animals.
9.	ELECTRONIC WASTES	E-wastes dumping releases toxins which affects plants and animal health Also damage heart, liver and brain.

IMPACT OF LIQUID WASTES ON WETLANDS

LIQUID WASTES- These are the wastes which are harmful to human health as well as aquatic plants and animals in wetlands.

EXAMPLES OF LIQUID WASTES-

1. Liquid waste from industrial discharge (Oil refineries, harmful chemicals) released in wetlands.
2. Agricultural farming practices introduces fertilizers & pesticides in wetlands.
3. Household waste –Include waste water from food preparation, toilets, bathing discharged into wetlands.
4. Liquid medical wastes.
5. Accidental- Broken pipes, oil spills.

NEGATIVE IMPACT OF LIQUID WASTE –

- Wastewaters from different sources contain organic matter which causes pollution in wetlands.
- This organic matter contains bacteria and other microbes which increases Biological oxygen demand (B.O.D) of water. These bacteria are also disease causing and changes the quality of water present in wetland.
- Oils and fats covers water surface which do not allow oxygen to enter inside it which cause death of aquatic animals which also produces bad odour.
 - ❖ For many poor people, wetlands provide the only free source of water they can access. The disposal of liquid waste into wetlands is the cause of many water borne diseases such as- Diarrhoea etc.



RESULTS

DISEASES CAUSED BY WETLAND LIQUID WASTES WHICH AFFECTS HEALTH & WELL BEING

S.No.	DISEASES	TRANSMISSION ROUTE	EFFECT ON HEALTH OF ORGANISMS
1.	Diarrhoea Cholera Typhoid	Infection spread through intake of water contaminated with faeces & wastewater.	Causes dehydration, nausea, vomiting, prolonged fever, constipation.
2.	Roundworm (Ascariasis)	Infection spread through pollution of water by household wastes.	Severe abdominal pain, restlessness , fatigue.
3.	Malaria, sleeping sickness	Infection spread through bites of insects that lives & breed in wetlands	Causes severe fever, loss of R.B.C. Sleeping sickness causes headaches, aching muscles & joints, loss of sleep
4.	Guinea worm	Infection spread through the bites of insects that live & breed in wetlands	Fever, swelling, pain in the area. More than 90% of worms come out of legs & feet.

CONCLUSION

Despite having environmental rules & regulations that have been implemented to protect the ecosystem increased population & industrialization led to creation of mountains of solid wastes such as- plastic , tyres, metals, electronic wastes in wetlands. Large amount of liquid wastes such as- oils, household sewage etc. These illegal dumping of solid & liquid wastes in wetland greatly affects life of aquatic plants and animals. Plastics are particularly harmful for wildlife. It also causes many water borne diseases in humans example – Mercury in water causes Minimata disease, other diseases such as- cholera, typhoid, malaria are caused due to polluted condition of wetlands. These all factors disturbs the ecosystem in very bad way.

