AgriCos e-Newsletter
ISSN: 2582-7049
Volume: 02 Issue: 07 July 2021 Article No: 27

Sea Snot – A Marine Mucilage Phenomenon

Abinaya P. and Jane Jacob
Ph.D. Scholar, Central Institute of Fisheries Education, Mumbai, (M.S.)

SUMMARY

Ocean is the habitat to diverse group of living organisms and it it is a reservoir for several natural resources from oxygen to breathe to nutraceuticals. Nowadays,climate change is a major issue which has exhibitied an alteration between ocean and climate interactions. But, the effect of climate change along with pollution arising from various sources threaten marine ecosystem when synergised with increasing water temperature.Among all the issues, sea snot is a rising threat to marine ecosystem and it was first spotted in Turkey.Sea snot is a congregation of marine mucilage produced by prokaryotes exposed to increased temperature.So, control measures are required to tackle the crisis of sea snot in order to protect marine ecosystem. The present article focusses on origin,impacts and control measures of sea snot.

INTRODUCTION

The ocean is vast and boundless covering seven-tenths of the planet. But, the ocean is filling up with sewage, garbage, spilled oil and industrial waste which we produce and being let into the ocean every day. Due to ocean pollution, marine life as well as humankind is affected directly and indirectly. Of all the facts, there is one constant: most pollution in our oceans begins on land and is caused by humans. One such issue is sea snot which is otherwise called as sea saliva or marine mucilage. Reports of such a phenomenon has appeared as early as 1700 when it was called "dirty sea" but has widely appeared during 2007, 2008 in and around Turkey. Lately, in June, 2021, there has been a large scale appearance of the same in Turkey's Sea of Marmara s, that connects the Black Sea to the Aegean Sea, and it is deemed as the largest outbreak of 'sea snot'. The sludge has also been spotted in the adjoining Black and Aegean seas. Turkey's biggest maritime clean-up operation was launched and it called on local residents, artists and NGOs to join hands to extend assistance in the process.

What is sea snot?

Sea snot is a grey sludge or marine mucilage or thick slimy layer of organic matter, a viscous, brown and foamy substance produced as a result of water pollution combined with the effects of climate change mainly global warming. The rising temperature and uncontrolled nutrient source such as that from oil spill, dumping of wastes from household, industries, etc. stimulates an overabundance of phytoplankton. It can be regarded as an accumulated form of marine snow which is the particles of marine organisms and aggregates.

Sea Mucilage
(Picture courtesy: https://www.atlasobscura.com/articles/what-is-sea-snot)

The phytoplankton produces exoplolymeric substances via photosynthesis which are released into the water along with cell debris on the death of the plankton. Such polysaccharides are produced by the plankton when they are under duress, the rising temperature in this case. Researchers predict that the warmig of the mediterranenan sea can lead to further aggravation for the problem of sea snot and also increase its occurrence in and along the Mediterranean coast. Marine mucilage floats on the surface of water like a brown phlegm, which affects the marine ecosystem. This phlegm creates anoxic/hypoxic conditions preventing any type of life beneath it. Coral reefs are affected by reduced visibility and increased turbidity. It also affects the quality of water with foul odour and the sticky texture affecting the aesthetic quality of the water. This reduces the interest of tourists or residents in bathing in the water, thereby reducing economic input during the seasons. The mucilage can continue to float around in the water for a long time of 2-3 months. The persistent mucilage also enriches and harbours pathogens such as viruses and other prokaryotes exhibiting a concern of public health risk.

Impacts of sea snot:

- It causes mass mortality of fish population
- It affects other aquatic organisms like corals and sponges
- Mucilage spreads to 80-100 feet below the surface which collapse the bottom water and damages the marine ecosystem
- Poisonous to all aquatic life as time passes
- The mucilage coats the strings making fishing nets visible to fish and keep them away affecting fishermen livelihood
- The sludge accumulates in the fishing nets, making them so heavy that they break or get lost.
- Mucilage blankets harbours and shorelines creating difficulty in transportation and navigation
- It can cause outbreak of water-borne diseases such as cholera by harbouring pathogens

Management and preventions:

- Waste water treatment should be improved from coastal cities and ships
- Immediate and effective clean-up operations should be launched with help of local residents and assistance of NGOs.
- Nutrient like nitrogen and phosphorous level should be reduced in order to tackle the crisis.
- Controlling runoff from both point and non-point sources
- Entire affected area should be converted into protected areas to reduce spreas via ships/boats
- Removal of superficial sediment.

(Picture courtesy: https://www.dailysabah.com/turkey/turkey-launches-massive-sea-snot-cleanup-campaign/news)

Steps being taken by turkey Government to tackle sea snot:

The Turkish government mobilised the biggest maritime clean-up operation with the help of local residents, artists and NGOs to join hands to extend assistance. They approved the Paris Agreement on climate change which helps to cut down on carbon emissions and reduce global temperatures. Further, every government should impose the strong penalties on waste disposal facilities that fail to follow the rules.

CONCLUSION

Climate change leads to warmer oceans and resulting in cyclones, sea level rise but it has been proven that it can also lead to rare occurences such as that of sea snot phenomenon. Eventhough it is aggravated by eutrophication and pollution, the primary reason for its increased occurrence is the warming of the sea. Thus far, it has been an isolated incident along the Mediterranean coast but there is no reason that it shouldn't occur in our seas. Hence, attention must be diverted to the management of coastal runoff, pollution and sewage outfalls into the open ocean to prevent the occurrence of any such untoward incidents. As a country with a vast coastline, we are largely dependent on the sea for our livelihood and export earnings. Such occurences can give a heavy blow to that and drastically lower the earnings of the people.

REFERENCES

Danovaro, R., Umani, S.F. and Pusceddu, A., 2009. Climate change and the potential spreading of marine mucilage and microbial pathogens in the Mediterranean Sea. *PLoS One*, *4*(9), p.e7006.

Michoacan, P.M., 2008. Mucilage event associated with diatoms and dinoflagellates in Sea of Marmara, Turkey. *Harmful Algae News*.

What is the 'sea snot' outbreak in Turkey? (indianexpress.com), June 20, 2021

What in the World Is Sea Snot? - Atlas Obscura

https://www.un.org/depts/los/global_reporting/WOA_RPROC/Chapter_01.pdf

https://www.texasdisposal.com/blog/ocean-pollution-causes-effects-and-prevention/

https://www.dailysabah.com/turkey/turkey-launches-massive-sea-snot-cleanup-campaign/news

https://www.drishtiias.com/daily-updates/daily-news-analysis/sea-snot-outbreak-in-turkey

https://www.nationalgeographic.com/science/article/100916-sea-snot-gulf-bp-oil-spill-marine-snow-science-environment