

Q. What is meant by a Blue tide? How does it affect the marine ecosystem of the Country?
Examine.

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Answer:— Blue Tide:- The tide that produces a fluorescent blue hue - bioluminescence. The phenomenon is called Blue Tide, and appears when luminescent marine life make the sea appear a deep shade of Blue. The spectacle occurs when phytoplankton (microscopic marine plants), commonly known as dinoflagellates, produce light through chemical reactions, involving light-emitting molecule and an enzyme, called "Luciferin and luciferase".

① The bloom of Noctiluca scintillans, commonly known as 'Sea Sparkle' that the Karnataka Coast has been witnessing since last month, has displaced microscopic algae called diatoms, which form the basis of the marine food chain.

② This deprived food for the planktivorous fish, according to Central Marine Fisheries Research Institute (CMFRI), Mangaluru.

③ While smaller blooms may be harmless, show-moving larger blooms

may have an impact on "deep-sea fishing".

④ The phenomenon is an indicator of climate change factors such as the Pattern of the wind and the temperature of the ocean also determine the occurrence of bioluminescent waves.

⑤ It is a spectacle but in a reality, it is "an ecological indicator of degraded water quality". The Phytoplankton shows up where seawater has low dissolved oxygen and high presence of Nitrogen.

⑥ The toxic blooms were linked to massive fish and marine invertebrate kills. Though the species does not produce a toxin, it was found to accumulate toxic levels of ammonia, which is then excreted into the surrounding waters, possibly acting as the killing agent in blooms.

In recent time the Blue tide phenomena occurs at Juhu and at Durgad and Velas beaches in Ratnagiri, Maharashtra, along Datshing Kannada-Udupi Coast, Karnataka, in India. This indicates how climate change occurs in the marine ecosystem & it disturb the marine food chain.