

Sea turtles and marine ecology is threatened by litters in the Lakshadweep Islands: Study

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The remote islands often keep the ancient forests safe free from anthropogenic contamination preserving the biodiversity and the ecology. But unfortunately human habitation and different anthropogenic activities are becoming inevitable in these areas. Lakshadweep islands are no exception to this with various anthropogenic activities taking a toll on the environment. Lakshadweep islands are now virtually drowning in piles of plastic bottle caps, plastic ropes, footwear, rubbers and disintegrated pieces of different plastic debris.



In a recently published study in the Marine Pollution Bulletin, it is revealed by the researchers that Lakshadweep Islands are severely impacted by anthropogenic activities. The finding reveals that nearly half of the plastic contamination littering the beaches is due to the fishing activity. Litters in the beaches are a threat to marine life. Also the dirty beaches results in a loss of tourism revenue.

During the study led by National Centre for Coastal Research (NCCR), scientists collected litter data from three remote beaches in three beaches of the Lakshadweep Islands, namely Kadmat, Suheli Par and Minicoy in August 2019. From the survey done in three beaches, it was found that the extent of littering at present is in the clean to moderate category stage. The study says that this cannot be taken as a solace due to the fact that the coral reef ecosystem and turtle nesting habitat ecosystem is vulnerable to even moderate category of hazardous plastic contamination.

Researchers from NCCR estimated that the density of litter in Lakshadweep Islands is 2.5 to 102 times higher compared to other remote islands such as Gough Island in South Atlantic, Inaccessible Island, Central South Atlantic, Pitcairn Group in South Pacific, Bird Island in Atlantic Ocean and Scotia Arc islands in the Southern Ocean.

The study reveals that only about 9% of plastics are recycled in Lakshadweep islands with an estimated 87% of the plastics ending up as hard plastic including 5% rubber, 3% glass, 2% foamed plastic with metal and 1% other contaminants. The researchers found significant variation of the total density of litters (plastic, glass and rubber) in these three beaches of the study area. In addition to this, scientists also found beach litters of medical and sanitary origin. They blamed the lack of proper solid waste management protocols in the island by local government as the reason for these beach pollution.

The plastic littering in the beaches and throughout the coastal vegetation is creating a hazard to the loggerhead sea turtles (*Caretta caretta*). As turtles play a crucial role in maintenance of the tropical ecosystem, the overlapping of debris is creating a barrier to their daily activities and thus affecting the marine and land ecosystem. According to the report, about 15 million tons of plastic trash including 0.64 tone of fishing gears are left or lost in the ocean every year posing a serious hazard to marine organisms with adverse commercial implications. Researchers predicted that at this rate, the deluge would triple by 2040 and oceans would be literally drowned with more plastic than fishes by 2050.

The NCCR study further assessed a public impact amounting to 37.3 % in Suheli Par which is highest compared to Kadmat Island (33.79%) and Minicoy Island (24.6%) which is probably due to frequent assemblies of fishermen at Suheli Par Island for tuna fishing, the study says.

Main author of the present study, Dr. Mishra suggested that periodic beach cleaning must be implemented to stop disintegration of plastics into microplastics. He added that these new study data should help policy makers to formulate a litter management strategy for the islands without which the ecology of the Lakshadweep islands is going to be further deteriorated.

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