



# 1. ‘Basketball-sized’: Concerns rise as tar balls wash ashore Mumbai coastline

- What are these sticky black “tar-balls”, and why have they appeared on Mumbai’s beaches?
- How do tar balls form?
- Why are they seen normally in the west coast of India rather than east coast?
- Do tar-balls indicate an oil spill?



**In this video, you can find detailed answers for all the above questions.**



**Date: 3 August, 2019**



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## What is the context about?



On Thursday, Girgaum chowpatty, a famous tourist spot in South Mumbai, saw big, black oil-emanating balls lying on its sandy beach.



On July 5 and 6, Juhu beach in suburban Mumbai too had these strewn on its shore. A week later at the Marine Drive promenade, visitors complained about the smell of diesel.



Tarballs are difficult to break down, and can therefore travel for hundreds of miles in the sea.



# What are these sticky black “tar-balls”, and why have they appeared on Mumbai’s beaches?

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Tarballs are dark-coloured, sticky balls of oil that form when crude oil floats on the ocean surface.



Tarballs are formed by weathering of crude oil in marine environments. They are transported from the open sea to the shores by sea currents and waves, according to the research paper.



Tarballs are usually coin-sized and are found strewn on the beaches. However, over the years, they have become as big as basketballs and can weigh as high as 6-7 kgs.



## How do tar balls form?



Weathering process disperses half of the spilled oil within 24 hours and after that water-in-oil emulsion is formed depending upon the Sea state, which increases water salinity.



The winds, waves and turbulence at sea surface cause the emulsion to break into smaller pieces, which eventually become tar balls.



As per the report, oceanic convergence also plays a major role in the formation of tar balls since the convergence zones trap the floating organic and inorganic objects, which act as nuclei around oil slicks that form tar balls.





## Why are they seen normally in the west coast of India rather than east coast?



During the monsoon and prior to its arrival, the sea is very rough and winds blow towards the coast bringing tar balls onto the coast.



The western coast is more conducive to tar ball deposition than the east coast and this might be due to the international tanker traffic in the Arabian Sea.



All the oil spilled in the Arabian Sea eventually gets deposited on the western coast in the form of tar balls in the monsoon season.

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## Do tar-balls indicate an oil spill?



Most of the times, the presence of several tarballs indicate an oil spill. However, its annual occurrence on the west coast during the monsoon. Experts have urged authorities to take stricter vigil and check if ships are dumping burnt oil waste off the western coast of India.



A study published by NIO in 2013 stated that “oil-well blowouts, accidental and deliberate release of bilge and ballast water from ships, river runoff, discharges through municipal sewage and industrial effluents” also leads to the formation of tarballs.