

OIL SPILL IN THE LACCADIVES SEA FROM THE OIL TANKER 'TRANSHURON'

ABSTRACT

An American oil tanker 'TRANSHURON' ran aground in the Laccadives Sea on Kiltan Atoll, about 300 km from the mainland. The tanker got badly damaged and its oil began to spill. It was carrying about 18,500 tonnes of furnace oil from Bahrain to the Philippines. Nearly 3,000 tonnes of oil leaked from the tanker into the sea creating oil pollution in a wide area. The fauna and flora of Kiltan Atoll were adversely affected, and soon after the accident, mortality of animal life in the polluted zone was widespread. Further studies are required to determine how quickly the atoll recovers from the effects of oil pollution.

On the evening of 26 September 1974, an American oil tanker TRANSHURON, owned by Hudson Waterways Corporation and chartered the U. S. Navy, ran aground on Kiltan, one of the islands of the Laccadive Archipelago. The island lies along the international shipping route. It is said that the disaster took place as a result of some fire hazard in the boiler room because of which the ship lost control, began to drift and finally hit the island. The impact of the ship with the ground ruptured several storage tanks and the oil began to leak in the surrounding sea. The ship was carrying furnace oil. It had sailed from Bahrain and was bound for the Philippines. Soon after the mishap was reported in the press, a team of scientists reached Kiltan and made observations from 5 to 7 October, 1974. The oil tanker, abandoned by its crew, was left at about 400 m away from the island (location Lat. $11^{\circ}30'N$ and Long $73^{\circ}E$;

see Fig. 1).

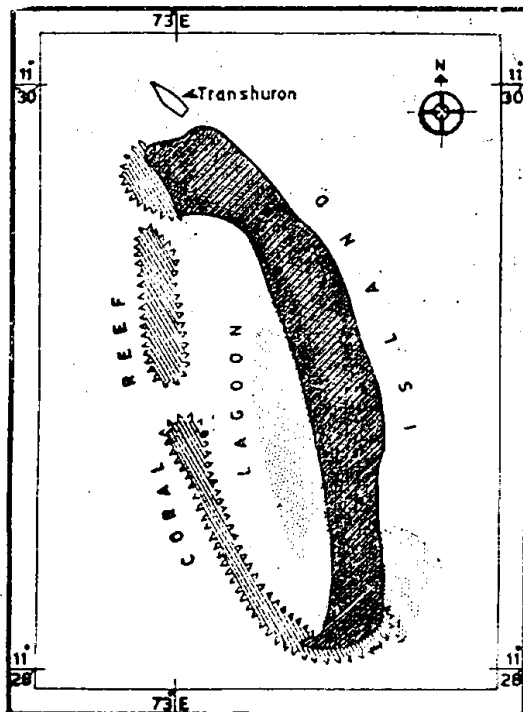


Fig. 1 Kiltan Atoll showing the relative position of the island, coral reef and lagoon. The site where TRANSHURON ran aground has been indicated. Areas of intense oil pollution as observed from 5 to 7 October, 1974, have been marked by stippling.

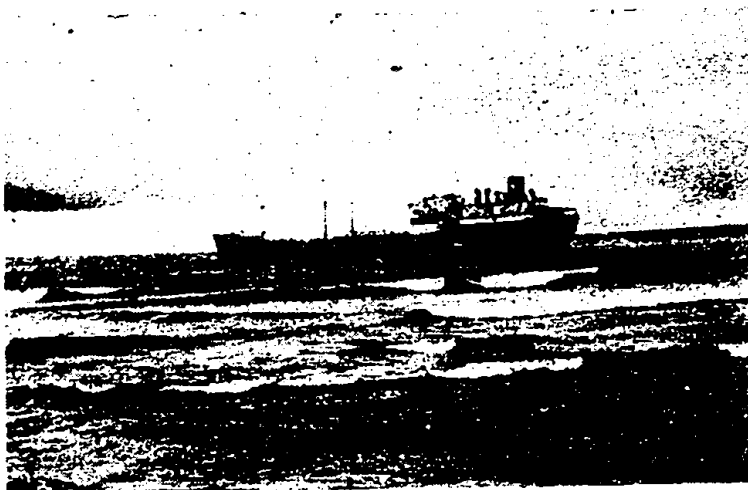


Fig. 2 Damaged oil tanker **TRANSHURON** lying abandoned on the northern tip of Kiltan Atoll. The shallowness of the area where it ran aground is clearly indicated by the breaking waves.

Kiltan is one of the 20 islands of the Laccadive Archipelago. It is an atoll having an island entirely of coral origin on the east, a coral reef on the west and a shallow lagoon in between (Fig. 1).

Kiltan atoll is located in the Arabian Sea about 300 km away from the mainland of India. The island is about 3.6 km long and 0.4 km wide at its broadest point. The total area of the island is about 1.5 sq. km and the western reef is about 200-250 m wide. Like all other atolls of the Laccadives, Kiltan also is oriented in a north-south direction and has submerged reefs a few kilometres all round. The ill-fated ship ran aground over the submerged reef near the northern tip of the island (Fig. 2).

It is reported that the oil tanker was carrying about 18,500 tonnes of furnace oil. Of this, about 3,325 tonnes was

spilled around the atoll. The oil that had entered the lagoon was washed ashore and thick patches of this were seen on the beaches (Fig. 3). The beach along the eastern side of the atoll remained free from oil pollution (Fig. 4). The beautiful beach along the lagoon, on the other hand, had thick deposits of tar-like substance all over (Fig. 5), and while the volatile material of the oil was evaporating, the tar had seeped into the coarse white sand up to a depth of about 3 - 10 cm (Fig. 6) forming slicks or balls. The rocky intertidal area of the south-western side of the atoll was also heavily contaminated with oil (Fig. 7). The rock pools of this region had thick layers of floating oil (Fig. 8).

According to local information; soon after the oil spill, mortality of animal life was fairly large and widespread.



Fig. 3 Kiltan Lagoon badly polluted by the spilled oil. All dark patches on the white sand and in the water indicate oil.

Dead fishes, lobsters, crabs and many other animals were seen floating in the lagoon and in the vicinity of the atoll. A few dead fishes and holothurians were noticed on the beaches several days after the spill (Figs. 9 and 10). In the lagoon, dead planktonic organisms and seaweeds were floating at the surface in thick layers.

About a week after the spill, mortality of animals declined. However, the damage caused by the oil spill on Kiltan was extensive. The widespread deposit of tar-like paste on the sandy beaches and in the intertidal zone affected the fauna and flora adversely. The lack of oxygen and intense turbidity of the water



Fig. 4 Beach on the eastern side of the island remained clean and free from oil pollution.



Fig. 5 A portion of the lagoon beach showing intense deposition of tar-like substance. Note the dark tar-like material heavily deposited on the beach,

due to the formation of thick oil films killed both pelagic and benthic fauna of the atoll. The worst affected fauna and flora were from the coral reef and lagoon. The hermatypic corals which are the builders and protectors of the atoll were intensely hit by the oil pollution.

The total damage caused by the oil spill and its ecological implications are difficult to assess. Perhaps the spread of oil in the sea over a large area did not cause a grave threat to the fisheries of the Laccadive Sea. Fishing, however, around Kiltan remained suspended for



Fig. 6 Tar-like material penetrated deep into the sand and was found 3-10 cm inside the sand.

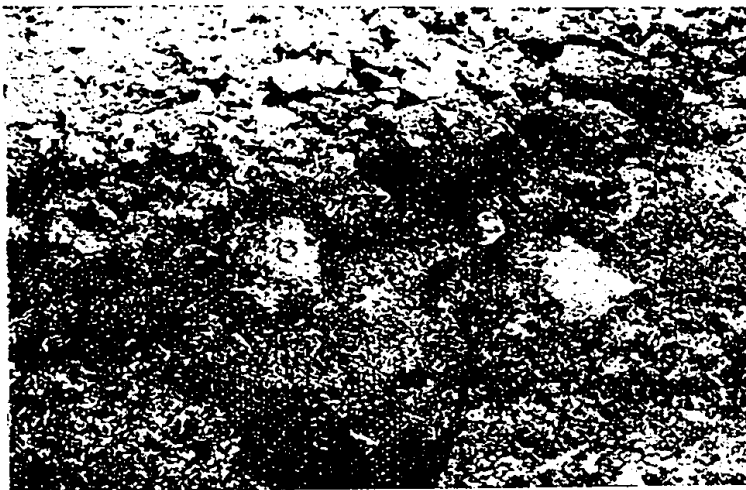


Fig. 7 Intertidal stony corals and coral debris in the intertidal zone had a thick covering of oil over them. Note the difference in colouration. Polluted area is seen darker in the picture.

quite some time. The administration of the Union Territory of Laccadives had prohibited fishing because of heavy contamination of the area with oil.

Several research institutions located at Cochin, with the active support of the Indian Navy, took all possible

measures to ensure that the remaining oil in the damaged tanker was kept intact and was finally removed safely. The naval authorities made several aerial surveys to track the shoreward movement of the spilled oil. The I.N.S. GAJ rescued the crew of TRANSHURON on 29 September, 1974.



Fig. 8 An intertidal rock pool containing a thick layer of oil at the surface.

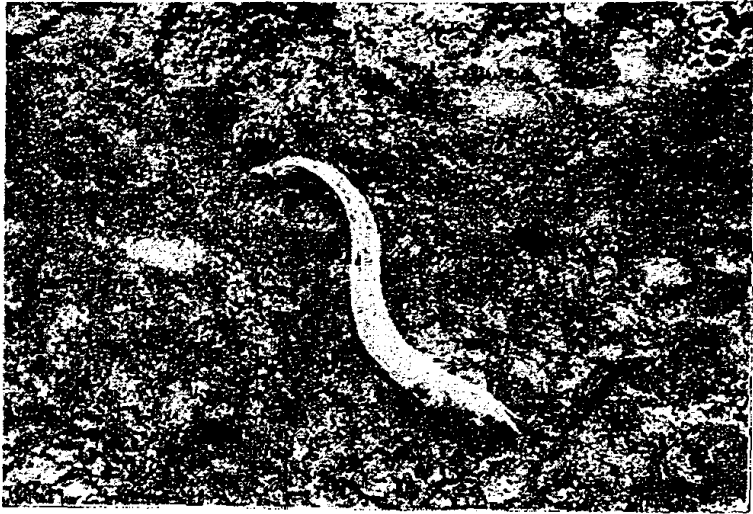


Fig: 9 Dead eel washed ashore as a result of oil pollution.

The ecology of some of the atolls of the Laccadives has already been studied by the scientists of the National Institute of Oceanography. Most of the islands have so far remained free from pollution and almost all of them are well known for the clarity of their waters and the lush communities of plants and animals which they possess.

The coral reef (Qasim and Sankaranarayanan, 1970), the seagrass bed (Qasim and Bhattathiri, 1971) and the lagoon (Qasim, Bhattathiri and Reddy, 1972) form highly productive communities. Practically every year, blooms of the blue-green alga *Trichodesmium* occur in the Laccadive Sea (Qasim 1970 and 1972).



Fig. 10 Dead holothurians washed on the beach.

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Kiltan, which is one of the very picturesque atolls of the Archipelago, has unfortunately been seriously polluted with oil. Therefore, long-term ecological studies are required to deter-

mine how far the island recovers by itself from the effects of pollution, particularly when no efforts have been made to clean up the island by any agency.

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