

Slick Caught on Satellite Image Around Sunken Ship Not Fuel Oil, Sri Lanka Says

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Satellite images have captured a silvery slick spreading on the surface of the sea from the burnt-out wreck of a cargo ship that sank off Colombo earlier this month, but authorities deny there's been a much-feared fuel oil spill.

The images first appeared on June 4, two days after the Singapore-flagged X-Press Pearl sank following an onboard fire. They showed a <u>long, silvery trail</u> originating from the ship and spreading several kilometers. Analyzing a series of such images taken over subsequent days, the <u>Marine Pollution Surveillance Program</u> at the U.S. National Oceanic and Atmospheric Administration (NOAA) indicated it was possibly an oil slick generating from the sunken ship.

The slick was 2.74 nautical miles (5.07 kilometers) north of the ship, and images from June 12 indicated the slick was getting thicker, covering an area of 0.67 square kilometers (0.25 square miles).

The X-Press Pearl was <u>carrying</u> 297 metric tons of heavy fuel oil and 51 metric tons of marine fuel oil. Environmental activists and experts have warned that a spill of this oil from the stricken ship would spark an unprecedented marine disaster for Sri Lanka. But authorities say the slick in the images isn't the ship's fuel.

No oil spill

"We sent our vessels to the area and no large scale spill of bunker oil [has] been reported from the X-Press Pearl," said navy spokesman <u>Indika de Silva</u>. He said the slick was the result of light-colored oily substances getting released in the aftermath of the ship's burning and sinking.

De Silva said the navy was working with officials from the <u>National Aquatic Resources</u> <u>Research and Development Agency (NARA)</u> to collect samples for further analysis. NARA officials say they need about two weeks to analyze the water samples to offer a conclusive

statement.



Cleanup operations carried out in the immediate area of the accident covering an extent of 230 kilometers (145 miles) resulted in the collection of up to 1000 metric tons of debris and nurdles as of June 12. Image courtesy of the Marine Environment Protection Authority (MEPA).

Initial inspections confirmed the <u>oil tanks were not damaged by the fire</u>. Experts also note that <u>heavy ship fuel oil</u> is a thick, blackish, tar-like substance, whereas what was captured in the satellite images was grayish or silvery.

"While satellites imagery are useful tools in detecting spills, monitoring and assessing ongoing events, and planning countermeasures, it can sometimes bring false positives of spills such as those caused by algal blooms, so it is important to have closer inspection and water sample analysis," Christopher Reddy, a senior scientist at the Woods Hole Oceanographic Institute, told Mongabay.

Reddy has studied extensively images of oil spills in different parts of the world. He says close analysis and inspection is necessary to conclude "whether there actually is oil, type of oil, or the amount being released and whether a leak was in the ship's cargo hold or fuel tanks, indicating potential for a much larger release."

Despite its tarry appearance, heavy fuel oil in the ocean is often easier to clean than spills of other hydrocarbons. Marine fuel oil, or marine diesel, which can spread rapidly, forming a characteristic rainbow-hued slick, would be less viscous, but harder to contain and recover than a heavy fuel oil spill, Reddy added.

"Every spill is different, and the amount of oil that enters the water is only the first of many variables that can cause a long-term environmental disaster from a near-miss," Reddy said.

Being prepared

Even though they can't yet confirm a spill, Sri Lankan authorities are still preparing for the worst. The Marine Environmental Protection Authority (MEPA) has activated the National Oil Spill Contingency Plan (NOSCOP) to ensure coordinated efforts among public and private agencies to integrate resources and respond effectively.

"We have set up booms covering several environmentally sensitive areas and the ship to prevent oil reaching the beaches. We are also trying to put a boom around the ship," said MEPA chair <u>Darshani</u> Lahandapura.



The debris from the cargo ship and nurdles collected are stored at a hazardous waste yard managed by the Marine Environment Protection Authority (MEPA).

Besides the silvery trail, images of the sea surface around the X-Press Pearl wreck also show a circular blue-green patch, experts say.

<u>Gothamie Weerakoon</u>, senior curator of lichens and slime molds at the <u>Natural History</u> <u>Museum of London</u>, said this was likely an algal boom.

"The ship carried nitric acid and some fertilizers like urea, so this would enrich the water with nitrogen that supports the growth of plants," she told Mongabay. "Sri Lanka is a tropical country where its sea surface gets plenty of sunlight, so the nitrogen-rich water could easily trigger such an algal boom."

As there appeared to have been other chemicals on board the X-Press Pearl, and as algae is capable of absorbing such chemicals, the resulting algal bloom could be a toxic one, Weerakoon said. She added it's important to carry out thorough tests to analyze the situation transparently and share this information to find solutions.

Meanwhile, Sri Lankan media have reported that as many as 20 dead turtles have washed ashore in the week since the ship hitting the seabed. <u>Thushan Kapurusinghe</u>, project leader

of the <u>Turtle Conservation Project</u> of Sri Lanka, said it's not unusual during the monsoon season for turtles to wash up dead, killed by rough seas and brought ashore by strong currents.

"But some carcasses seem to be showing anomalies, hence it is important to do thorough necropsy to conclude their cause of death and whether there is a link to the pollution by the ship," Kapurusinghe told Mongabay.

Two experts from the nonprofit International Tanker Owners Pollution Federation Limited (ITOPF) have arrived in Sri Lanka to advise on the response to potential spills of oil, chemicals and other hazardous substances. The Sri Lankan government has also called for help from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) to assess the environmental damage caused by the X-Press Pearl.

The ship was also carrying 78 metric tons of plastic <u>nurdles</u>, the peppercorn-sized beads used to make all types of plastic items. Most of the nurdles fell overboard during the fire, and now pose a massive cleanup challenge for Sri Lanka. It's the second-largest nurdle spill after a 2012 incident in Hong Kong, in which containers holding 168 metric tons of nurdles were blown off a ship during a typhoon.

Lahandapura said the MEPA had cleaned up nurdles and debris from about 200 km (125 mi) along the west coast, collecting about 1000 ton of plastic nurdles and other debris.



The X-Press Pearl has caused the world's second-largest nurdle spill due to a marine accident, with the plastic pellets continuing to wash up along Sri Lanka's western, northwestern and southern coasts. Scientific modeling indicates the nurdles may reach Indonesia, the Maldives, India and may even extend up to Somalia. Image courtesy of the Marine Environment Protection Agency (MEPA).

Plastic pollution

Oceanographers <u>Charitha Pattiaratchi</u> and <u>Sarath Wijeratne</u> from the <u>University of Western</u> <u>Australia</u> have predicted that the plastic pollution could impact a larger area, given

prevailing wind and wave patterns. According to their modeling, the nurdles could make landfall on the Indonesia island of Sumatra in about 60 days. Later in the year, with the reversal of the monsoon, the researchers say they expect the nurdles to circle back, making landfall in India and again in Sri Lanka — this time on the east coast — as well as the Maldives and even Somalia.

Meanwhile, the Center for Environmental Justice (<u>CEJ</u>), a Sri Lankan NGO, has petitioned the Supreme Court to seek full damages for the disaster. "We want to protect the rights of all sectors of our motherland, including the environment," said CEJ chair and lawyer <u>Ravindranath Dabare</u>. "We are not satisfied with the compensation Sri Lanka received from the previous incident of MV New Diamond oil tanker that caught fire last year. So we want to use this as an instrument to set things straight."

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Featured image: Circular greenish patch around the sunken freighter the X-Press Pearl. The patch is thought to be an algal boom triggered by nitrogen enrichment after nitric acid and urea fertilizer spilled into the water. Image courtesy of Sri Lanka Air Force Media.

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