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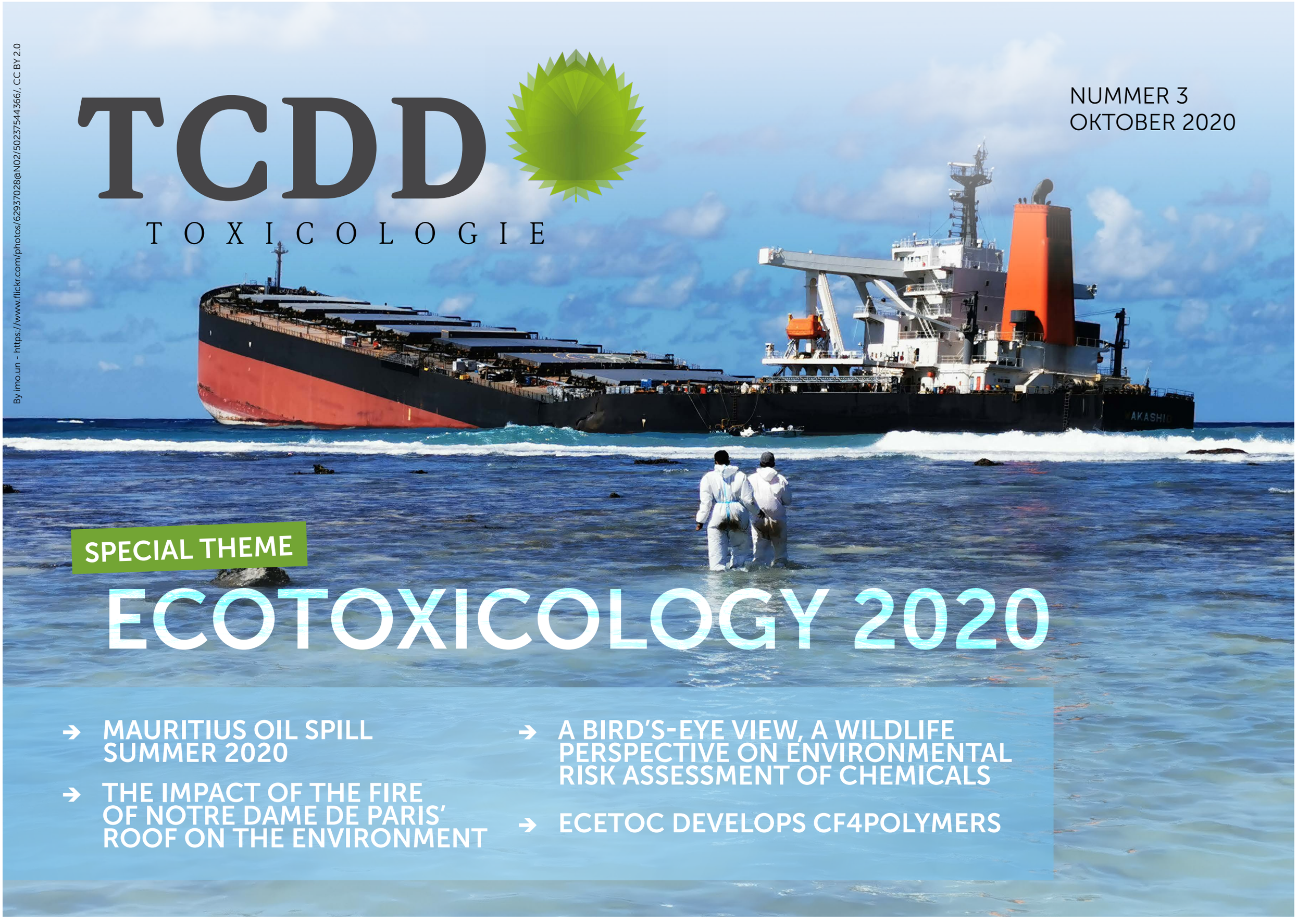

SPECIAL THEME

ECOTOXICOLOGY 2020

- MAURITIUS OIL SPILL SUMMER 2020
- THE IMPACT OF THE FIRE OF NOTRE DAME DE PARIS' ROOF ON THE ENVIRONMENT
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NEDERLANDSE VERENIGING VOOR TOXICOLOGIE

Mauritius oil spill summer 2020

By Tinka Murk, Marine Animal Ecology group Wageningen

On July 25, 2020, the Japanese but Panama-flagged cargo ship MV Wakashio ran aground near Blue Bay Marine Park of the Indian Ocean paradise island of Mauritius. The Wakashio belongs in the top 1% of largest ships in the world and is too large to fit through the Suez Canal, and hence traveled around the coast of Mauritius from China to Brazil. The single-hull bulk carrier transported 4,000 tons of oil and diesel of which at least 1,000 tons leaked from a gaping crack over pristine coral reefs, internationally protected turtle habitats and core habitats of endangered marine mammals. Three weeks later, on the 15th of August, the vessel split in two and on the 24th of August half the vessel was deliberately sunk at a still undisclosed location. Local media in Mauritius reported, on 18 August, 2020, that the broken front half of the vessel would be towed 8 miles to the East of the island to sink it, a famous nursing ground area for whales and their calves.

Floating spilled oil is especially threatening to air-breathing marine animals, such as sea turtles, marine mammals, as well as sea birds that land in the oil and get smothered. Floating oil can also pollute mangrove forests, swamps and beaches for decades to come. Therefore, oil spill responders try to bring the oil down from the surface. Relatively soon after the spill started, 49 dead whales and dolphins washed ashore, which was more 'acute' than usual. In previous oil spills, such as the Deep Water Horizon in the Gulf of Mexico, oil-exposed marine mammals developed a respiratory illness that killed many of them. In the case of the Mauritius spill, it seems that the oil spill response contributed to the mortality. When dispersants are being applied to break the oil up into small droplets, especially the more hydrophilic toxic compounds are all released at once. This should only be done in deeper water (ideally more than 60m deep) to ensure fast dilution to concentrations below those inducing acute effects. Therefore, before any spill occurs responsible governments should decide when and where dispersants can be safely applied, or what else to do. In addition, the effects should be tested under realistic local environmental conditions. During the Deep Water Horizon blowout, application of dispersants during an algal bloom unexpectedly triggered marine snow formation that subsequently collected dispersed oil and particulate matter, resulting in a so-called 'dirty blizzard' that concentrated the oil at the deep sea floor instead of diluting it and made it more persistent instead of enhancing biodegradation. So dispersant application could smother shallow coral reefs as well as real deep sea benthic ecosystems, and the impact can last for decades.

I tried to find more information about the fate and effects of the spilled oil, and what struck me is the lack of good information. The entire South Eastern coast has been closed and international scientists seem not welcome to take oil samples for fingerprinting the type of oil, no animal samples are being taken for biomarker research and also the local people are not involved in the decision making.

The Government and the oil spill response team seem to be quite disorganized, although they recovered quite some oil from the stranded Wakashio. Photo impressions of the Mauritius oil spill show that the oil reached the network of highly protected nature reserves including the pristine ➜

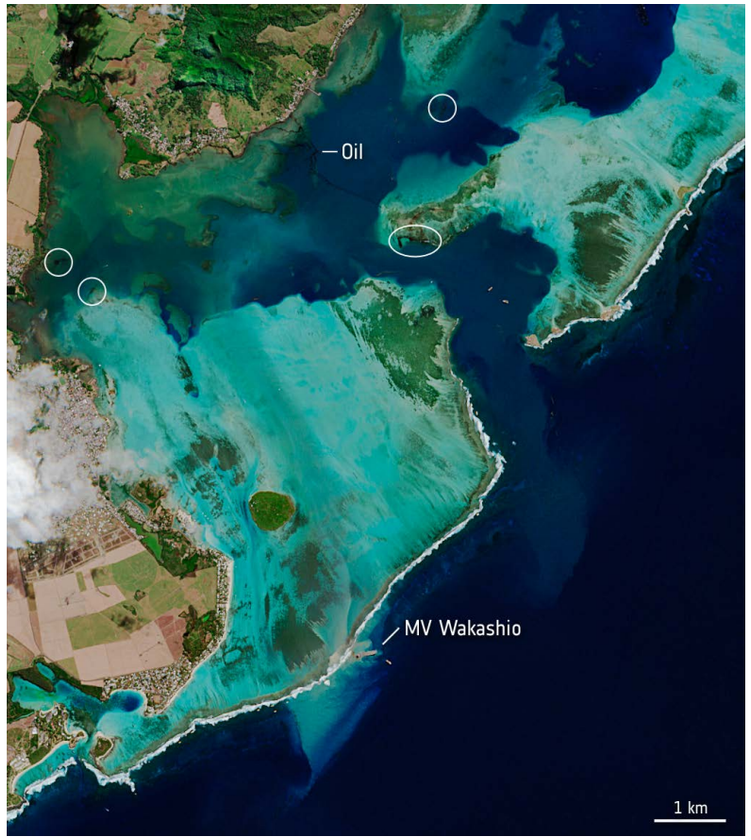
Wreck of the MV Wakashio pictured on August 17, 2020

barrier coral reef, mangrove forests, seagrass fields and stone beaches – in addition to smothering some of the most important sites of historical and cultural importance to Mauritius. Affected historical istes include Dutch landing where Dutch explorers landed on the Island of Mauritius in 1598 and on a sketch you can see Dutch sailors exploring, hunting and taking a turtle-back ride. Mauritian citizens started to make homemade oil protection booms from dried sugar cane leaves, plastic bottles to keep these afloat, items of clothing and human hair in desperate struggle to get rid of the oil.

Oils spills and almost-disasters from oil transport occur on a too regular basis. For example, the Indian Ocean was on full alert again when an oil supertanker caught fire off the coast of Sri Lanka and began spilling oil on the 3rd of September. This tanker, the MT New Diamond, is a Very Large Crude Carrier and carried twice the amount of oil of the Wakashio. In the Red Sea an abandoned massive Yemeni oil tanker is threatening the entire Red Sea region as it can explode any moment and sink. In the meantime Venezuela experiences a large oil spill in its national park since the 2nd of August. It is truly shocking how often aged and/or single-hulled oil tankers can so easily threaten the precious last rich marine ecosystems. There is insufficient local and international regulation and preparedness to deal with massive spills, and local people can, in a few days, lose their livelihood as seafood stocks can be wiped out or made unsafe to eat. Needless to say, tourists stay away for many years after a spill occurs. It is important to have internationally-agreed and organized shipping zones, contingency plans, pre-impact monitoring and also involvement of local stakeholders.

IMO workers in hazmat suits stand in surf near the wreck on August 13, 2020

Still, my biggest worry goes further than these huge tankers containing thousands of tons of oil. Massive risks are in the make from oil drilling and production in the vicinity of key coral and marine wildlife areas along the African coasts. For example two major oil and gas projects, under development on the border with Senegal and Mauritania, are expected to start producing in 2022/23 and an oil and gas project in the Saloum Delta is expected to start production from 2023/24 onwards. These areas are a key habitat for hundreds of by-now rare species including the largest global colony of the Royal tern and the last viable population of Atlantic humpback dolphins in West-Africa. The same developments occur along the East African coast. An oil well blowout can potentially result in even more massive oil contamination than super tankers can spill. Also the oil needs to be transported via pipes and tankers that can leak and break. It is not a question whether, but when the first environmental disaster will take place and also in that case, as with Mauritius, local authorities cannot be expected to handle the situation without international support. And, in addition to the discussed consequences for the marine environment, also then local people will benefit least and suffer the greatest consequences for their economy, food security and health. The sooner we can cure ourselves from our fossil fuel addiction the better! ■



Satellite view of MV Wakashio oil spill and surrounding area (11 August 2020)