

Cleaning up oil spills can kill more fish than spills themselves

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Kingston, ON - A new Queen's University study shows that detergents used to clean up spills of diesel oil actually increase its toxicity to fish, making it more harmful.

"The detergents may be the best way to treat [spills](#) in the long term because the dispersed [oil](#) is diluted and degraded," says Biology professor Peter Hodson. "But in the short term, they increase the bioavailability and toxicity of the fuel to rainbow trout by 100-fold."

The detergents are oil dispersants that decrease the surface tension between oil and [water](#), allowing floating oil to mix with water as tiny droplets. Dr. Hodson and his team found that dispersion reduces the potential impacts of oil on surface-dwelling animals. While this should enhance biodegradation, it also creates a larger reservoir of oil in the water column.

This increases the transfer of hydrocarbons from oil to water, Dr. Hodson explains. The hydrocarbons pass easily from water into tissues and are deadly to [fish](#) in the early stages of life. "This could seriously impair the health of fish populations, resulting in long-term reductions in economic returns to fisheries," he says.

The study is published in the journal, *Environmental Toxicology and Chemistry*.

The researchers also determined that even though chemical dispersants

are not typically used in freshwater, turbulent rivers can disperse spilled diesel and create similar negative effects.

"It doesn't matter if the oil is being dispersed by chemicals or by the current," says Dr. Hodson. "Now that we know how deadly dispersed oil is, it is important to assess the risks of diesel spills to fish and fisheries in terms of the spill location, and the timing relative to fish spawning and development."

Source: Queen's University

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