

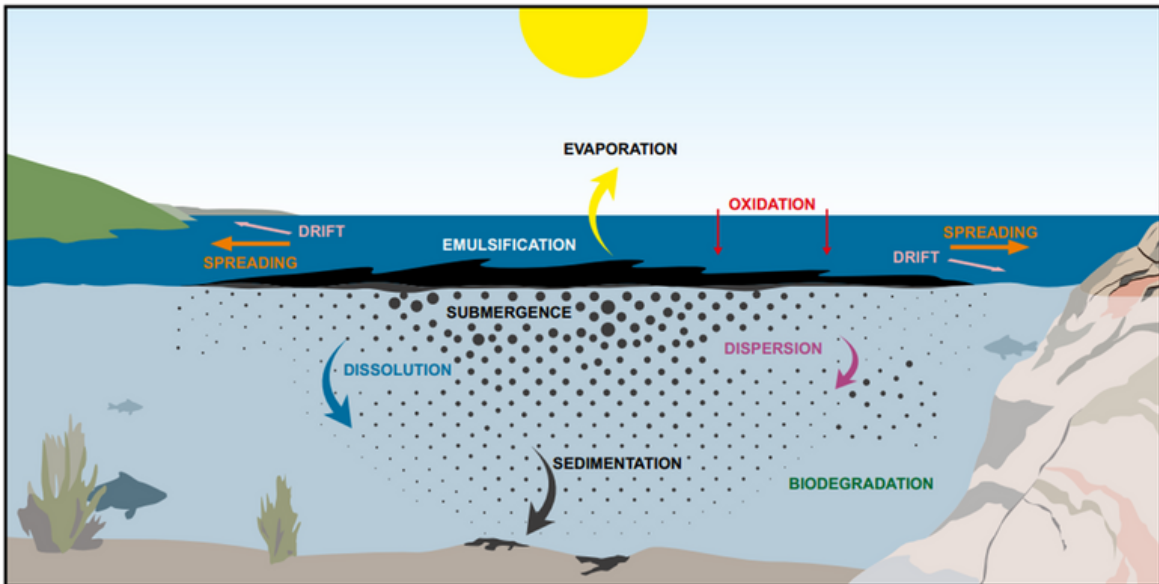
What is a diesel spill?

What is diesel?

Diesel fuel is a light, refined petroleum product made from crude oil. It is a mixture of hydrocarbons used to power combustion engines. It is a light weight and low viscosity petroleum product.

How does a diesel spill move and react in the environment?

Diesel can spread in the environment in multiple ways. As a light oil, it is primarily moved in the environment by evaporation, spreading and drifting.



Environment and Climate Change Canada (ECCC), A Field Guide to Oil Spill Response on Freshwater Shorelines, 2021.

Spreading	Diesel spreads rapidly on the surface of the water and is influenced by wind and waves.
Drift	Diesel is carried downstream by the river.
Evaporation	Diesel is likely to lose up to 50% of its mass to evaporation in the first 5 days.
Dispersion	Wind and waves can break down diesel into oil droplets which remain in the water. The small size of the Suzanne River limits dispersion.
Emulsification	Wind and waves can mix diesel and water into an oil-water emulsion remaining in the water and creating a new mixture. The small size of the Suzanne River limits emulsion.
Sedimentation	Diesel can stick to particles in the water and sink. Diesel is low viscosity and low density reducing the effect of sedimentation.
Dissolution	Soluble components of diesel including toxic compounds can dissolve into the water, and can negatively effect water quality and harm in aquatic life.
Biodegradation	Microbes can digest diesel breaking it down. Diesel can be completely degraded by naturally occurring microbes, under time frames of 1-2 months when there is sufficient oxygen.
Photo-oxidation	Diesel can react with the sun and oxygen, breaking down the oil.

Impacts on the environment

- Diesel has **moderate acute toxicity**. Fish and invertebrates that come in direct contact with a diesel spill may be killed. Mammals and birds can be impacted by direct contact or ingesting diesel.
- Diesel that has penetrated into shoreline sediments where conditions are not favorable for natural removal or degradation may persist for months to years.
- Where larger amounts of diesel soak into wetland soils, high mortality of animals and plants is possible. **It is unclear how the wetlands of the Suzanne River will be impacted.**

