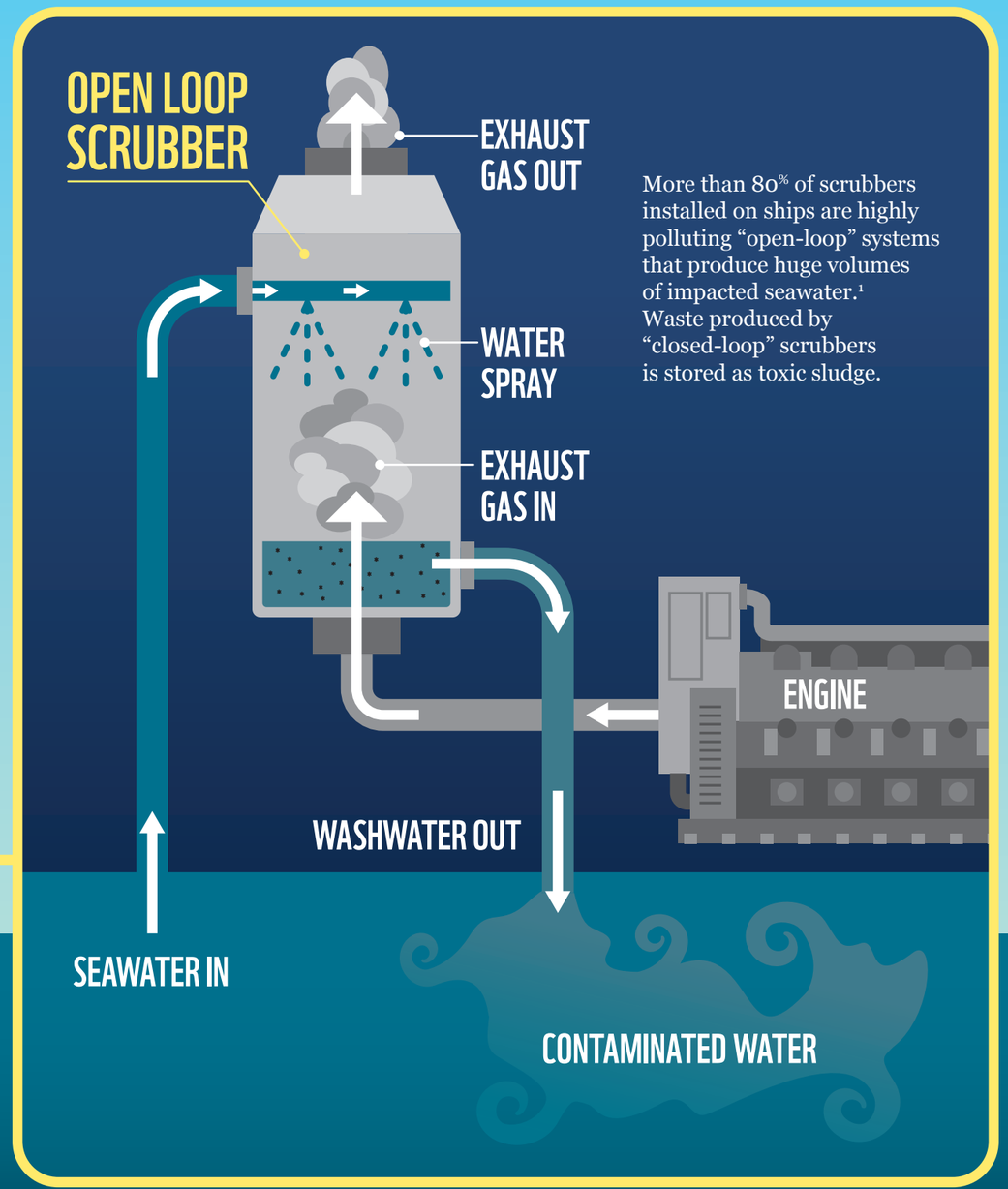
Why We Need to Ban Scrubbers

WHAT ARE SCRUBBERS?

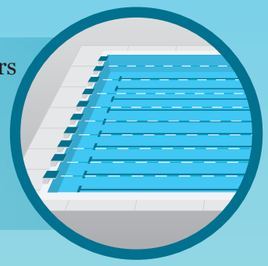
- Devices installed onboard ships to reduce sulfur oxide emissions, allowing ships to burn dirty, less-expensive fuels, like heavy fuel oil. Pollutants scrubbed from the engine exhaust gas are redirected into the ocean where they can potentially harm wildlife and people.



More than 80% of scrubbers installed on ships are highly polluting "open-loop" systems that produce huge volumes of impacted seawater.[1] Waste produced by "closed-loop" scrubbers is stored as toxic sludge.

A scrubber-equipped ship burning heavy fuel oil emits **66% more particulate matter**[2] and **3% more greenhouse gas**[3] than an equivalent ship burning low sulfur alternatives without a scrubber.

Scrubber washwater can be up to **125,000x** more acidic than the surface of the ocean.†



Just 30 ships fitted with scrubbers dumped the equivalent of **14,000 Olympic swimming pools** (35 billion litres) of washwater off the BC Coast in 2017.[4]

Toxic and carcinogenic substances in scrubber washwater can accumulate in the marine food web — and can even end up on your plate.[5]

Allowing scrubbers means burning more **heavy fuel oil**, which is extremely hazardous when spilled.

RECOMMENDATION

WWF-Canada is calling for a ban on all scrubbers in Canadian waters.

Please contact for errors, omissions, comments, additions:
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[1] DNV GL. (2020). Alternative Fuels Insight. Retrieved September 9, 2020 from https://www.dnvgl.com/services/alternative-fuels-insight-128171

[2] Winnes, H., Fridell, E., & Moldanová, J. (2020). Effects of Marine Exhaust Gas Scrubbers on Gas and Particle Emissions. Journal of Marine Science and Engineering, 8(4), 299.

[3] CE Delft. Scrubbers – An Economic and Ecological Assessment. (2015). Retrieved September 9, 2020 https://www.cedelft.eu/en/publications/1618/scrubbers-an-economic-and-ecological-assessment

[4] International Council on Clean Transportation. (2019). A whale of a problem? Heavy fuel oil, exhaust gas cleaning systems, and British Columbia's resident killer whales. Retrieved September 9, 2020 from https://theicct.org/publications/hfo-killer-whale-habitat

[5] Endres et al. (2018). A new perspective at the ship-air-sea-interface: the environmental impacts of exhaust gas scrubber discharge. Frontiers in Marine Science, 5, 139.

† Based on seawater pH 8.1 and washwater pH 3 (e.g., U.S. Environmental Protection Agency. (2011). Exhaust Gas Scrubber Washwater Effluent. Retrieved September 9, 2020 from https://www3.epa.gov/npdes/pubs/vgp_exhaust_gas_scrubber.pdf)