

Investigation into the impact of a leaking oil exploration well on the scallop fishery in Port au Port Bay, Newfoundland, Canada

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In 2013 the scallop fishery in Port au Port Bay, Newfoundland began to drastically decline. The cause of this decline is still unknown; however, several abandoned oil exploration wells that were leaking an oily substance have been identified around the bay. This project investigated whether the decline of the scallop fishery could be related to contamination from a leaking oil well. Three types of sites were chosen, mapped, and sampled: a source site near an abandoned oil exploration well on Shoal Point, a fishing ground in Port au Port Bay where scallops were once abundant, and a background site in St. George's Bay where no change in the scallop fishery has been reported.

Sediments were collected from each site and extracted for their hydrocarbon and metal content. A sample of the oil that was leaking from the abandoned oil exploration well was also analyzed for its hydrocarbon and metal content for comparison with the sediments. Water samples were chemically characterized for signs of inorganic and organic contamination. Since there were no scallops present at the study sites, mussels were used as a proxy organism. Mussels were analyzed for metal contamination, $\Delta^{14}\text{C}$, and their health indices. No evidence of hydrocarbon or metal contamination in the sediments, water, or mussels was detected. These results suggest the decline of the scallop fishery in Port au Port Bay cannot be explained by petroleum hydrocarbons from the leaking oil exploration wells.