

After oil is spilled and emulsification process has taken place, we sometime have the visual illusion that the oil has disappeared and the threat to the environment has ended. In this article, a theoretical approach is used to investigate the quantitative and qualitative effects of petroleum oil droplets breaking up, and spreading in aquatic environments. The natural actions of droplets fission and transport processes are very effective in diffusing oil contamination from one area to another. Our mathematical results indicate that fission and transport dynamics alone do play a significant role in the overall evolution of the number density of hydrocarbon compounds, but do not remove the contamination. However, scission and transport dynamics lead one step closer to decontamination by helping to release water trapped inside viscous oil during, for instance, the formation of chocolate mousse emulsions. Furthermore, these dynamics need to be combined with more actions like evaporation, weathering, oxidation or biodegradation to get rid of oil emulsion from water surfaces and environments.