

Reddy, CM. and Quinn, J.G., *The North Cape oil spill: Hydrocarbons in Rhode Island coastal waters and Point Judith Pond*, Marine Environmental Research, 2001; v52, 445-461

On 19 January 1996, the North Cape oil barge ran aground near Moonstone Beach, RI, and spilled over 2700 metric tons of No. 2 fuel oil during a severe winter storm. High winds and rough seas drove the oil into the water column, and the oil spread throughout Block Island Sound and into several coastal salt ponds. Over 50 water samples were collected from Point Judith Pond (PJP) and the southern coast of Rhode Island for four months after the spill and analyzed for polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPHs). These analyses revealed that at least 60 km² of coastal waters were impacted from the spill. Maximum concentrations of Sigma PAHs and TPHs were 115 and 3940 µg l⁻¹, respectively. The percentage of Sigma PAHs relative to the TPHs for all samples varied from 0.2 to 43%, showing that there was no clear relationship between Sigma PAHs and TPHs for the whole dataset and likely resulting from spatial and temporal partitioning over the course of the spill. However, within the dataset, there were stronger correlations for distinct samples collected at similar locations and times. In PJP, water column concentrations of individual PAHs decreased at rates of 0.08-0.24 day⁻¹ and lower-molecular weight PAHs were removed faster than higher-molecular weight PAHs.