

ABSTRACT

Sediment contamination has long been neglected as a significant source of nonpoint pollution to the Blackstone River and Narragansett Bay. Metals and organic pollutants held suspended in the water column bond to sediment particles and accumulate in depositional environments. When resuspended during wet weather and sudden discharge events, these sediments contribute significantly to water quality degradation.

As one of the largest sources of pollution to Narragansett Bay, the problems of sediment contamination in the Blackstone River are explored in this thesis. As home to textile manufacturers in the past and numerous industries at present, the sediments of the Blackstone have been severely contaminated with heavy metals and organic pollutants.

This thesis explores the available technologies for the remediation of contaminated sediments in the Blackstone River. The remediation of these contaminated sediments could significantly improve the water quality of both the Blackstone River and Narragansett Bay. A demonstration project is recommended at one of the most severely degraded sites to test new technologies and build support for future remediation projects.