Over the past decade, increasing amounts of microplastic debris have started to accumulate in the marine environment, becoming an emerging critical environmental issue. It is known that many organisms who live near or in bodies of water inadvertently consume microplastics with its impact on biological systems not well understood. To quantify the scope and magnitude of this issue and to track the proliferation of microplastics and macroplastics, preliminary measurements were made in an attempt to quantify plastic concentration at a number of New Jersey beaches. Two sampling protocols were used in the study – one taken from the National Oceanic and Atmospheric Association (NOAA) Marine Debris Program and the other from the Save Coastal Wildlife Foundation for deep and surface level sand sampling respectively. As a result, both sampling methods yielded the highest concentrations of macroplastics at the Long Branch Beach site. The greatest microplastic concentration was detected at the Asbury Park Beach site using the surface sampling method, however, there was no detectable amount using the deep sampling protocol.  Although no definitive conclusions can be made, this preliminary work provides a basis for future studies and to raise awareness for this serious environmental issue. In addition to disseminating information about the problem at hand, it is equally as important to work towards finding solutions. Some promising new forms of technology such as artificial intelligence and membrane bioreactors are possible methodologies to study this issue, underlying the importance of a multidisciplinary collaborative approach to a complex problem.