

## ***Discussion of Data Limitations and Recommendations***

This first edition of the State of Maine's Beaches report is meant to provide a general qualitative description of the changes observed at each profile location for beaches involved in the SMBPP monitoring program. The data collected by volunteers enable the formation of a contiguous temporal dataset that is vital to tracking longer-term changes along Maine beaches.

The Emery Method is considered to be a fast, relatively accurate, simple method for collecting topographic data. The primary advantage of the method is that it can be used to compare changes in a particular location over time through repeated surveys. Its limitations include vertical and horizontal inaccuracies from the simple equipment, variable sharpness of the horizon, and human error in positioning the equipment or even in recording values. Vertically, the method is an approximation of true slopes because the horizon is used as a level even though there is curvature to the Earth's surface. This latter error is not especially important for reproducing survey lines for comparison over time. Some of these errors are apparent in the datasets. For example, many profiles saw a substantial increase in the standard deviation values as one proceeds farther from the starting point. This is not likely from more natural variability in the offshore, but likely is due to profiling error; that is, as a profiling team moves farther from a starting point, it is much more difficult to stay on the exact same line of the previous month's profile. This increases the error associated with the Emery method of profiling as one surveys farther seaward.

We recommend that a substantial effort be placed upon updating the online database with missing beach profile data, since some beaches (Willard Beach for example) was missing considerable amounts of data, even though data have been collected through 2007, which precluded analysis.

We also recommend that **all profiles** begin at a back stake, located farther in the back dune, behind the frontal dune crest, or behind a seawall (not on the wall) whenever possible. Profile locations that had multiple starting points were very difficult to work with in terms of determining which starting point was used, if it was a new front stake or back stake, etc.

We recommend that all starting locations be accurately surveyed with the MGS RTK-GPS so that exact location (with accurate x, y, z earth coordinates) can be determined. This should be completed in summer 2007. New back stake locations may be set during this field effort.

### ***Future of the program and future reports***

The Maine Geological Survey will be complementing the SMBPP data with alongshore surveys of the seaward edge of dune vegetation. We will also be adding nearshore surveys that extend profile lines into the offshore in order to create a contiguous beach profile that extends well into the surf zone.

Future reports will be issued in conjunction with the Maine Beaches Conference, and will include analysis of changes observed since the last report.

We would like to thank all of the volunteers that make this program possible; without your interest and dedication, this data collection effort would be impossible and much less would be known about the behavior and trends on Maine's most popular recreational beaches.

Please check the Maine Geological Survey website for additional electronic copies or newer editions of this report.

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