

## Introduction

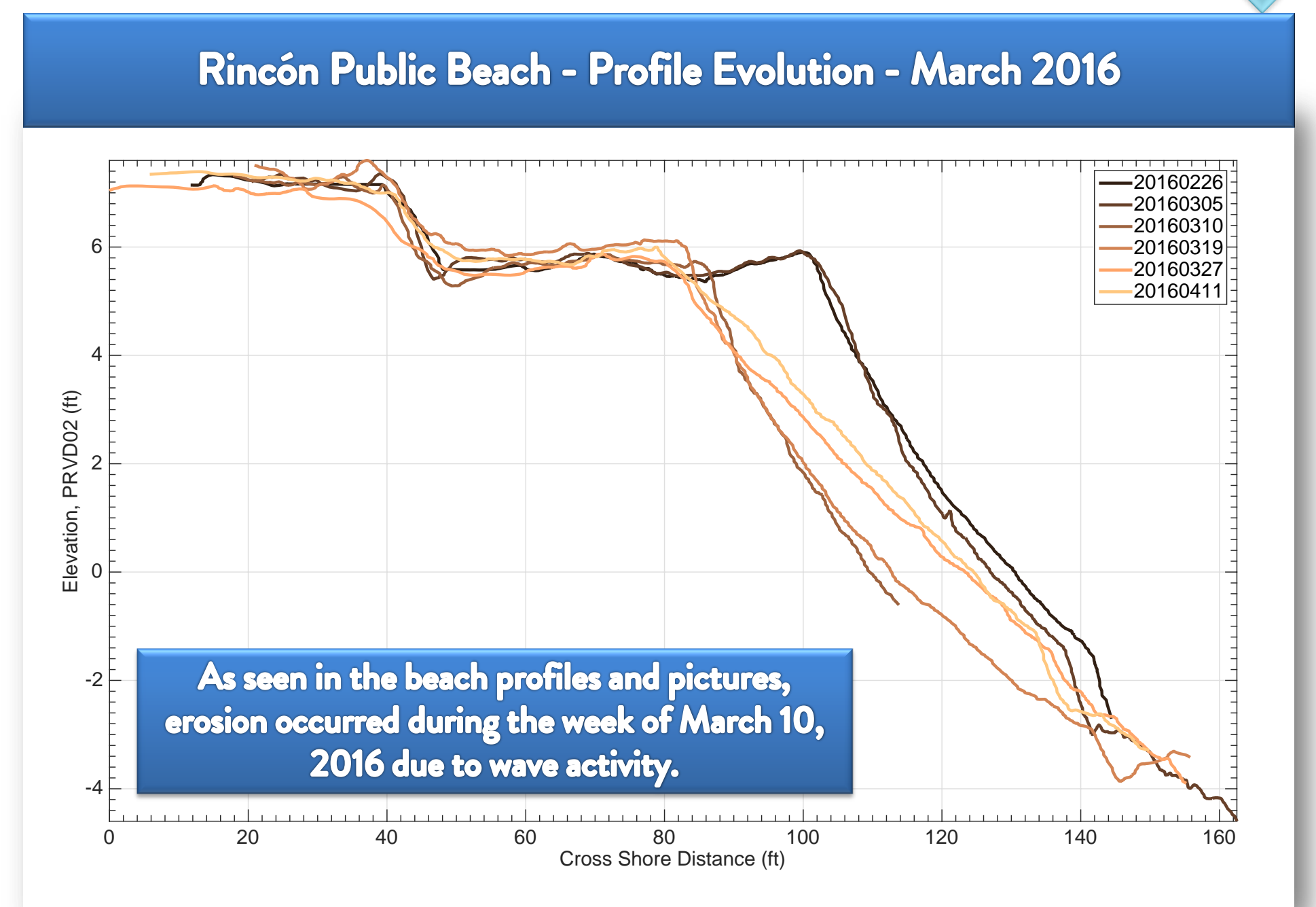
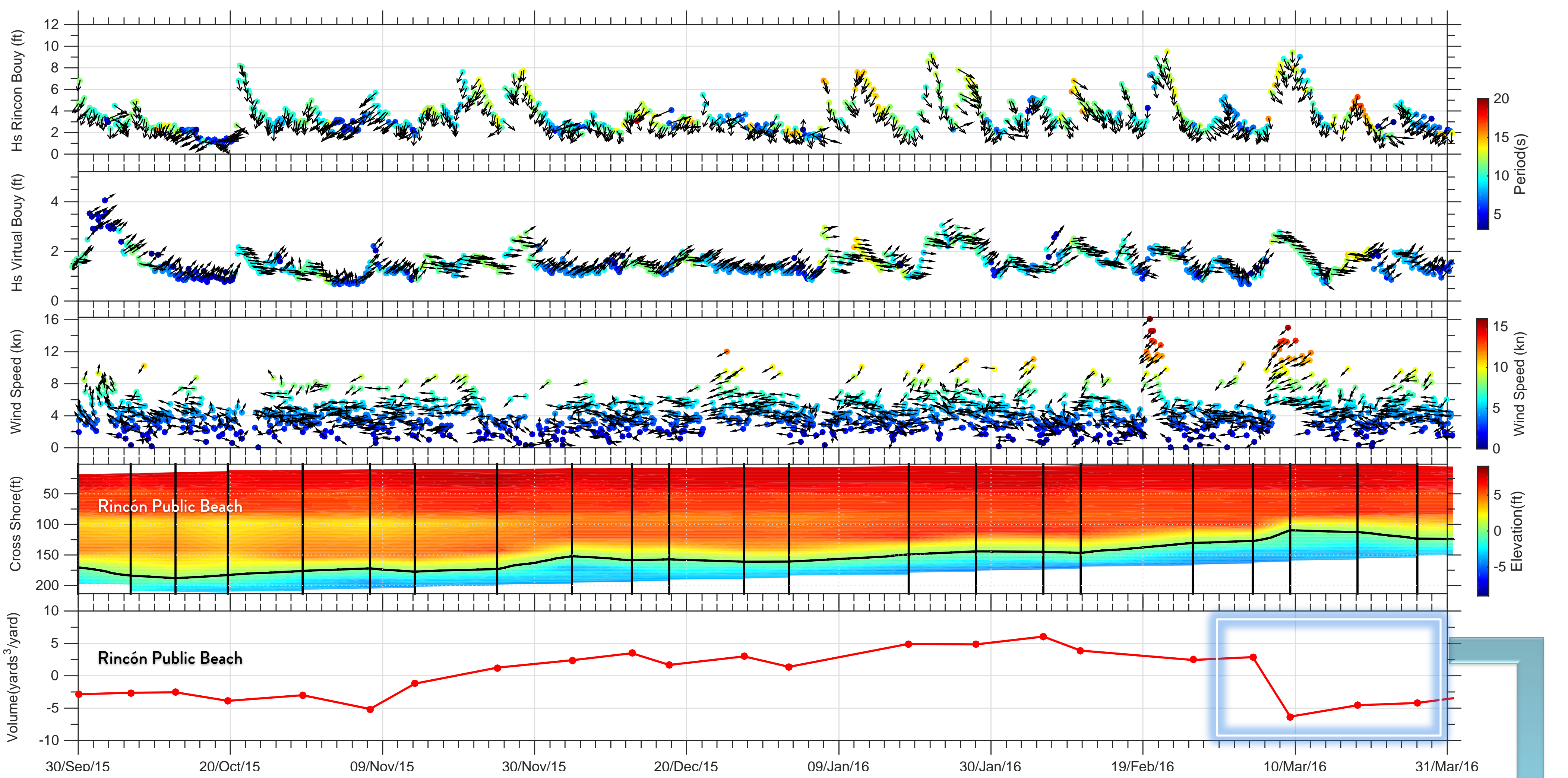


Seasonal variations in the wave climate near Rincón, Puerto Rico include high winter swells associated with meteorological disturbances in the north and mid-Atlantic, short period waves resulting from local storms, and the occasional south wind swell. The resulting beach morphology is therefore a complex function of the wave climate, wave-induced currents, and local meteorology, among others. Over the past 75 years, this particular stretch of beach has suffered severe erosion problems, losing as much as 100 meters of beach width at particular locations. The purpose of this study is to develop a high-resolution time series of beach morphology to examine in more detail the seasonal variations at the site.



## Hydrodynamic Forcing & Morphology Change

Beach profiles are being collected on a weekly basis using a VRS GPS system at four permanent stations spanning 2 km of coast. Sediment samples are collected along the profiles to identify sediment properties associated with distinct morphological features, while digital photographs provide a qualitative sense of beach width. Observed morphology changes are then interpreted using environmental observations and predictions obtained by CARICOOS, including the CARICOOS Rincón Buoy, the CARICOOS Wave Model, and nearby met stations.



## Conclusions and Future work

Further assessment is necessary to quantify sediment transport and develop a regional sediment budget; however, as seen in the climatological plots, evidence suggests that beach erosion is highly correlated to wave forcing and in some cases precipitation. This project was funded by UPR Sea Grant.