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Supplementary Material for

2 Wave Energy Level and Geographic Setting Correlate with Florida Beach Water Quality

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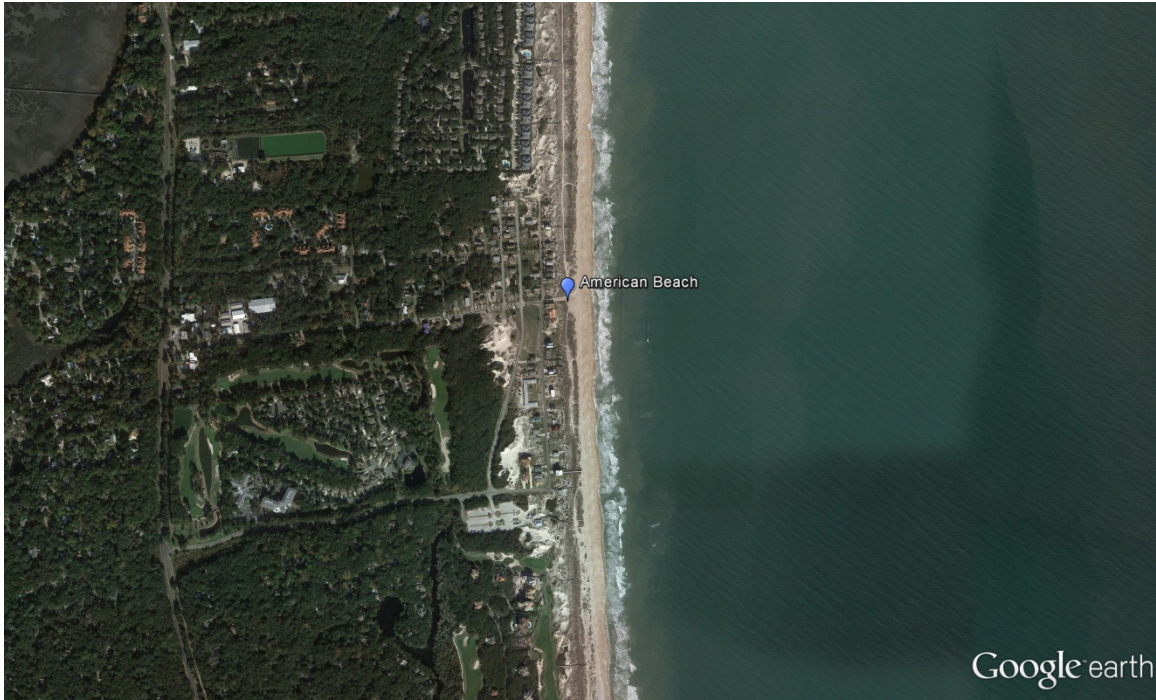
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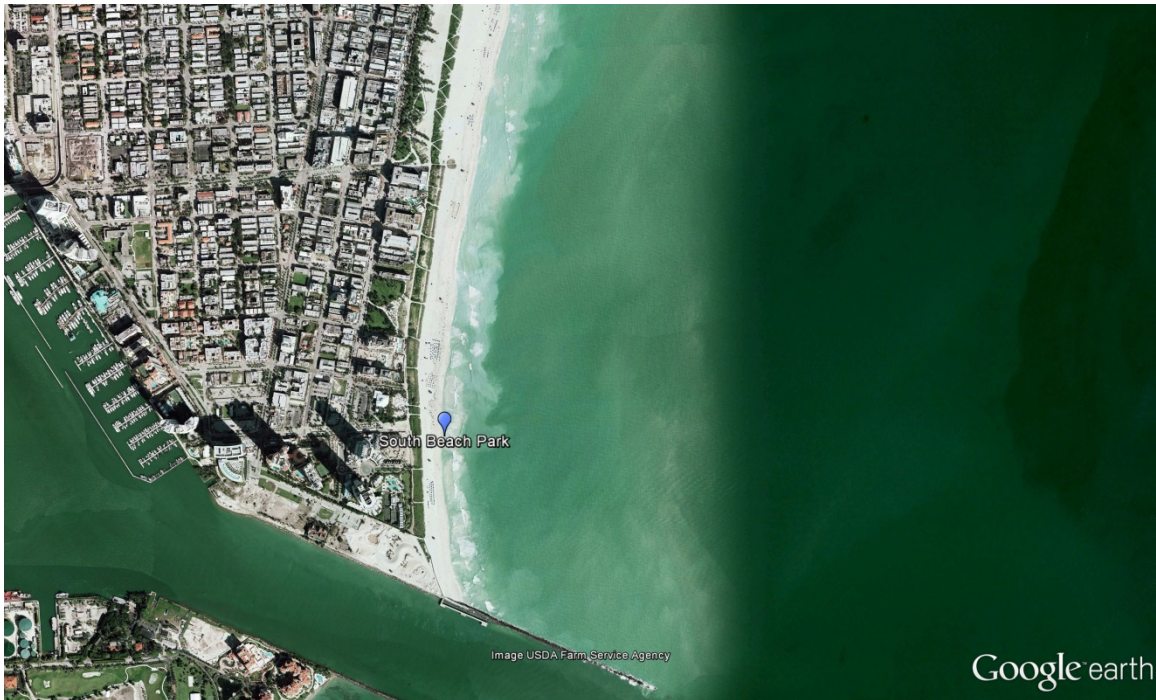
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27 Figure S1 Google earth images of two representative high-wave-energy beaches. The
28 upper one is American Beach in Nassau County and the lower one is South Beach in
29 Miami-Dade County. Surfzone wave breaking near the beach shoreline, shown as long
30 and straight white bands, can be easily identified from the images.

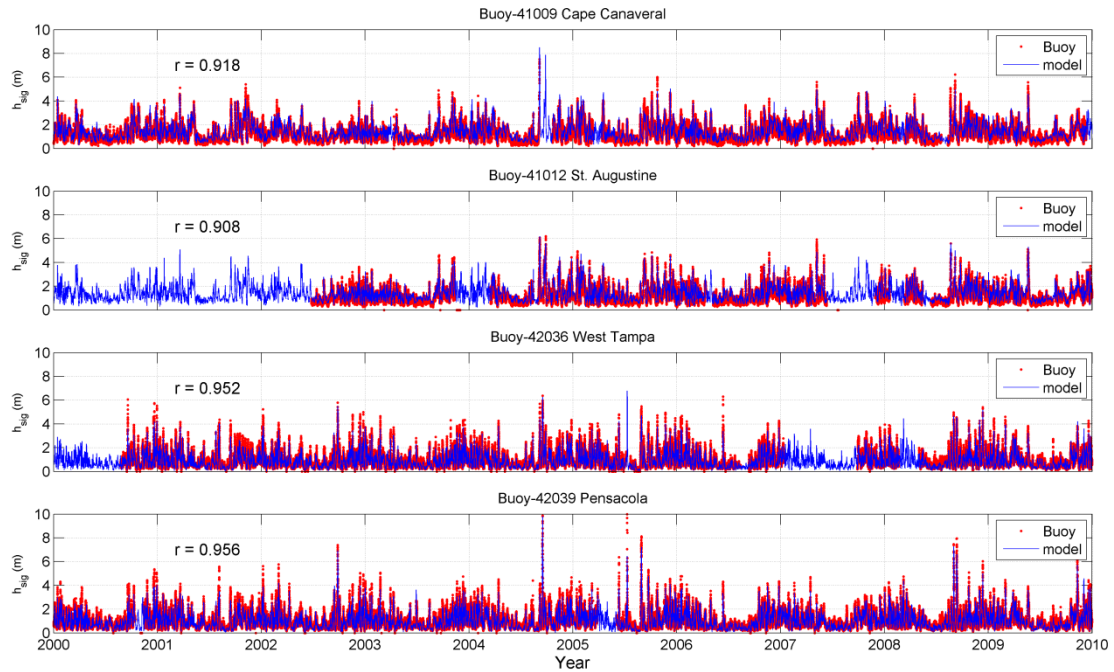


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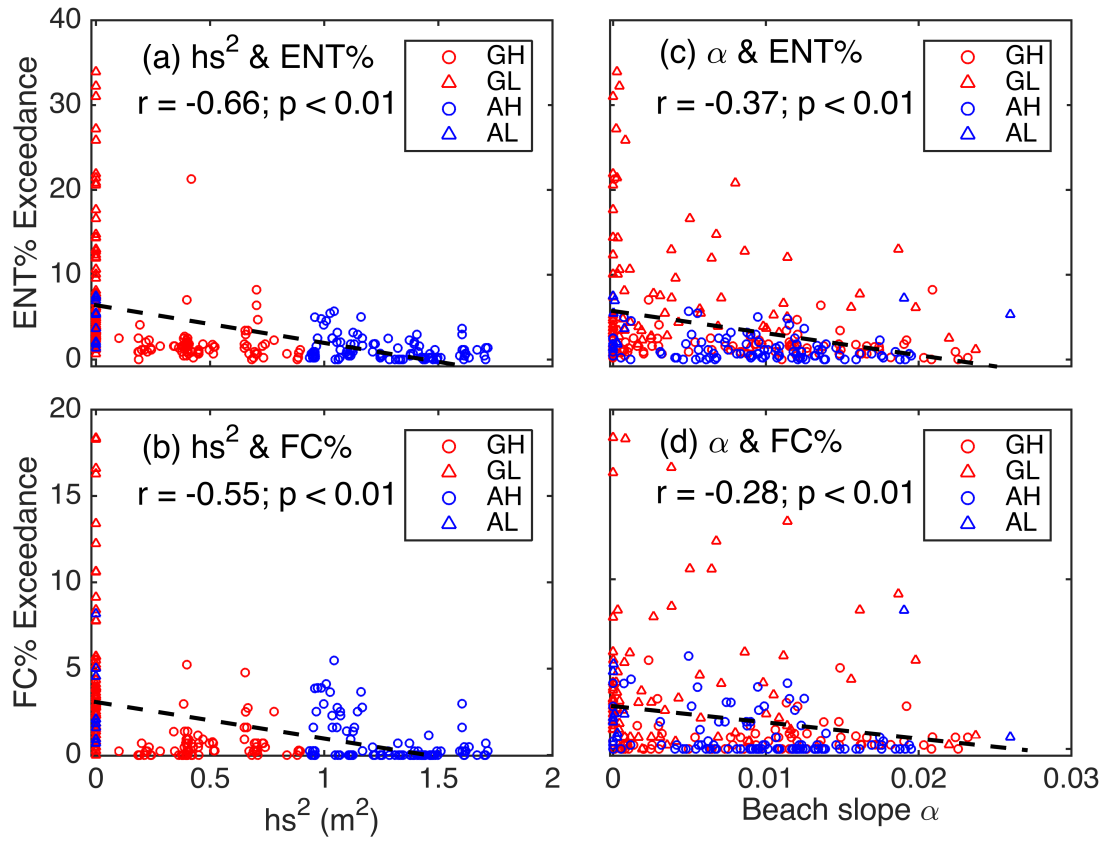
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33 Figure S2 Google Earth images of two representative low-wave-energy beaches. The
34 upper one is Hagen's Cove Beach in Taylor County, which is located in the Big Bend
35 area surrounded by salt marshes. The lower one is Harry Harris County Park in Monroe
36 County, which is fully protected by a coral rock barrier.



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38 Figure S3 Comparisons of significant wave height between WAVEWATCH-III hindcasts
39 and buoy observations at four NDBC stations from 2000 to 2009. (a) Buoy-41009 Cape
40 Canaveral; (b) Buoy-41012 St. Augustine; (c) Buoy-42036 West Tampa; and (d) Buoy-
41 42039 Pensacola. Data gaps exist in the observations (red dots). Model outcomes and
42 observations agree well with correlation coefficients all above 0.9.
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45 Figure S4. Scatterplots of enterococci (upper panels) and fecal coliform (lower panels)
 46 percent exceedances against mean squared significant wave height h_s^2 (left panels) and
 47 beach slope α (right panels). The dash line in each panel is a curve least-squared fitted to
 48 data of all 262 beaches. GH: GoM high-wave-energy, GL: GoM low-wave-energy, AH:
 49 Atlantic high-wave-energy, and AL: Atlantic low-wave-energy.