Supplemental Information: *Reconstructing patterns of coastal risk in space and time along the US Atlantic Coast, 1970–2016*

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Supplemental Figures

**Figure S1.** Sensitivity analysis. (a) Spread of mean vulnerability and (b) mean risk, for chosen vulnerability parameters (solid black), and parameters that create the maximum (dashed black) and minimum (dotted black) mean vulnerability. (c) Spread of mean vulnerability and (d) mean risk, using chosen vulnerability parameters without $V_{bn}$ (solid red), with $V_{bn}$ calculated from 1970 (dashed red), and $V_{bn}$ calculated from 1930 (dashed red).
Figure S2 – Total exposure over time for 51 coastal counties in $USD2018 (red, left axis), as a proportion of all US counties (black dashed, right axis).
Supplemental Tables

Table S1. Tide gauges used to calculate sea-level change rates.

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All tide gauge data from Permanent Service for Mean Sea Level (PSMSL, 2018)

Table S2. LiDAR files used to calculate beach slope.

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Lidar data from Doran et al., (2017).
Table S3. Census data files used to calculate exposure.

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* use 2009-2013 5-year community survey in place of 2010 for coverage

Table S4. Sensitivity testing of the effect of changing variables in Eq. (5) on the vulnerability due to beach width ($V_{bw}$). Factors are: maximum beach width ($x_0$), fraction of beach width affected by the nonlinear rate ($\mu$), and the nonlinear rate ($\theta$). Highlighted rows indicate the maximum and minimum mean $V_{bw}$, and the chosen set of variables, all of which are plotted on Figure S1.

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