



## **Intensified coastal development behind nourished beaches**

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Population density, housing development, and property values in coastal counties along the U.S. Atlantic and Gulf Coasts continue to rise despite increasing hazard from storm impacts. Since the 1970s, beach nourishment, which involves importing sand to deliberately widen an eroding beach, has been the main strategy in the U.S. for protecting coastal properties from erosion and flooding hazards. Paradoxically, investment in hazard protection may intensify development. Here, we examine the housing stock of all existing shorefront single-family homes in Florida — a microcosm of U.S. coastal hazards and development— to quantitatively compare development in nourishing and non-nourishing towns. We find that nourishing towns now account for more than half of Florida's coastline, and that houses in nourishing towns are larger and more numerous. Even as the mean size of single-family homes nationwide has grown steadily since 1970, Florida's shorefront stock has exceeded the national average by 34%, and in nourishing towns by 45%. This emergent disparity between nourishing and non-nourishing towns in Florida demonstrates a pattern of intensifying coastal risk, and is likely representative of a dominant trend in coastal development more generally. These data lend empirical support to the hypothesis that US coastal development and hazard mitigation through beach nourishment have become dynamically coupled.