

Sea Level Rise and Effects on House Prices

By [Toan Phan](#) and [Nick Weitzel](#)

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Key Takeaways

- High-resolution data allows detailed mapping of where sea level rise will affect U.S. coastlines.
- Linking inundation maps with housing data provides estimates of when specific properties may be inundated.
- Housing markets already appear to reflect long-term sea level rise exposure in property prices.

Sea level rise has the potential to reshape the landscape of coastal properties. In this article, we delve into recent research that highlights how high-resolution data and inundation maps can be used to gauge the possible impact of sea level rise on specific properties. Linking these projections with housing data can provide estimates of when and where properties could be affected, providing valuable insights for policymakers and property owners alike.

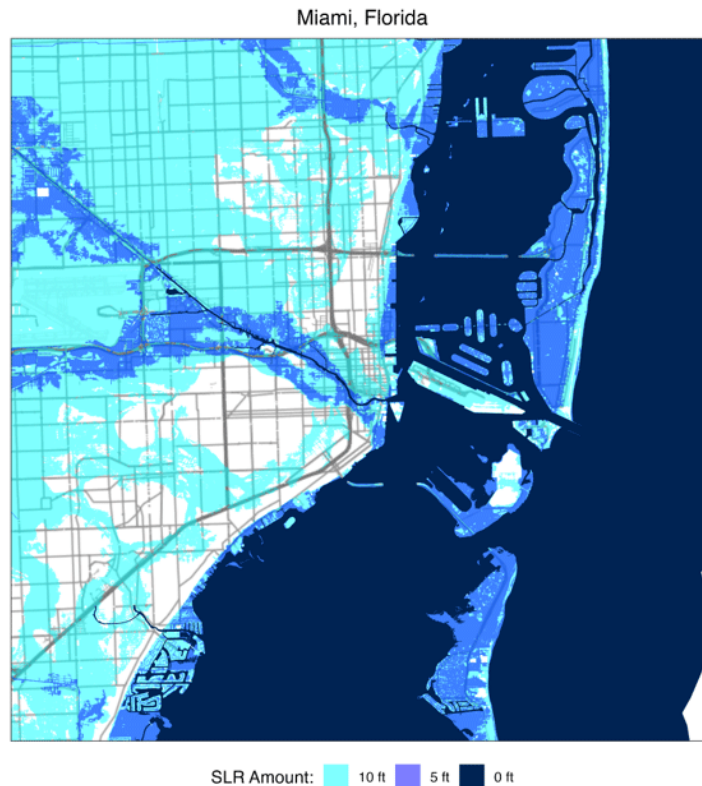
Mapping Sea Level Rise

Sea level rise is gradual but measurable, and its effects vary across coastal regions. Newly released data from the National Oceanic and Atmospheric Administration offer [high-resolution spatial projections in half-foot increments](#), allowing for precise visualization of permanent inundation patterns.

When overlaid on urban maps, these projections reveal how sea level rise exposure varies across coastal geographies. Figure 1 shows the effects in three example cities:

- In Miami, the gradual rise in water levels expands inland from Biscayne Bay, affecting extensive low-lying residential areas.
- In New York, vulnerable zones appear along the edges of Brooklyn, Queens and the Bronx, where modest changes in elevation lead to substantial differences in exposure.
- In Charleston, S.C., the maps show how tidal creeks and marshlands amplify risk around the city's historic peninsula and nearby barrier islands.

Figure 1a: Projected Permanent Inundation at Varying Sea Level Rise Amounts



Source: Authors' analysis based on National Oceanic and Atmospheric Administration.

[Enlarge](#)

Figure 1b: Projected Permanent Inundation at Varying Sea Level Rise Amounts

New York City, New York



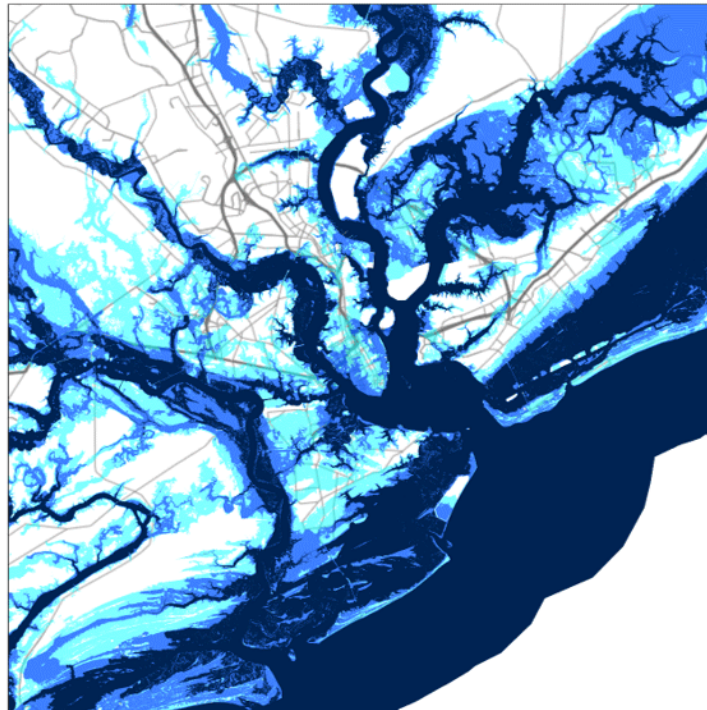
SLR Amount: 10 ft 5 ft 0 ft

Source: Authors' analysis based on National Oceanic and Atmospheric Administration.

[Enlarge](#)

Figure 1c: Projected Permanent Inundation at Varying Sea Level Rise Amounts

Charleston, South Carolina



SLR Amount: 10 ft 5 ft 0 ft

Source: Authors' analysis based on National Oceanic and Atmospheric Administration.

[Enlarge](#)

These maps clarify where inundation risk is concentrated and can help policymakers and property owners better understand local exposure.

Sea Level Rise Over Time

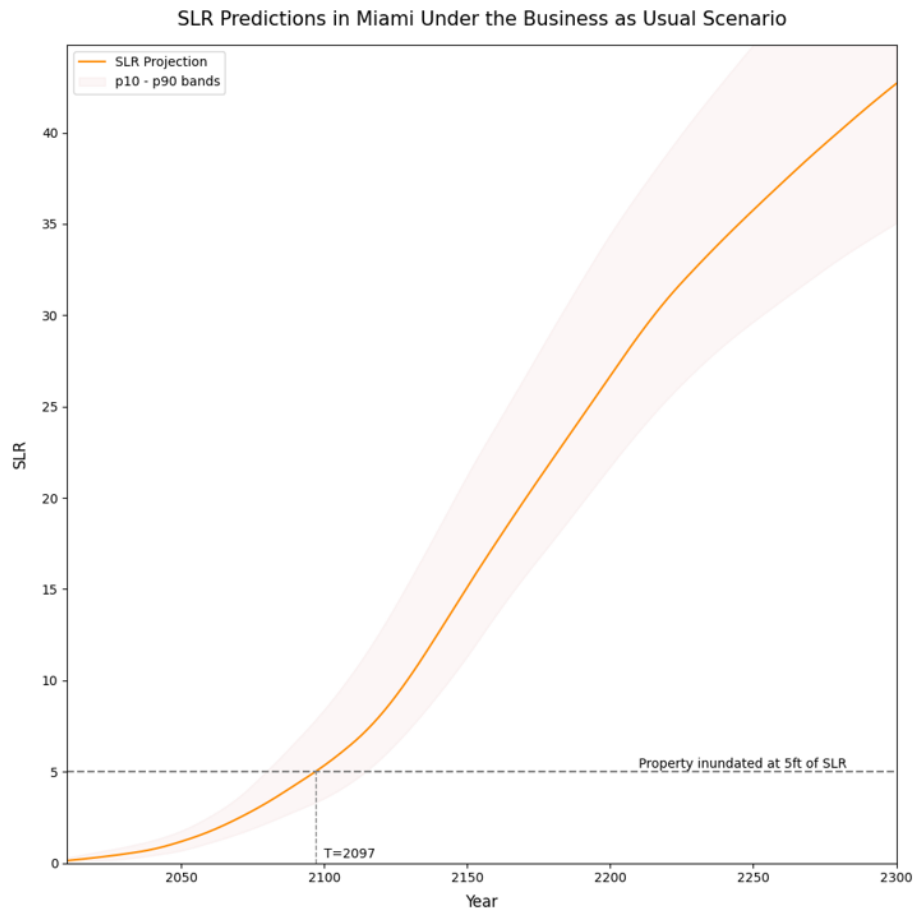
Knowing where the sea will rise is one thing, but knowing *when* is another. For markets and communities, timing determines how quickly risk becomes real.

For each property, we estimate the smallest increase in sea level that would result in permanent flooding. We then match this threshold with local tidal gauge projections under a "*business-as-usual*" scenario (IPCC RCP 4.5) to identify the first year of permanent inundation, or the point when rising seas are expected to exceed that property's flood threshold. This approach translates spatial exposure into a timeline, showing not only where flooding is likely to occur, but also when.¹

In practical terms, this means that if a property would be inundated at 5 feet of sea level rise, we look to the local projection to determine when 5 feet of rise is expected to occur. This process converts spatial exposure into a timeline of expected inundation, as seen in Figure 2.

Nationally, about 2.8 million single-family homes fall within the 0-to-10 foot sea level rise range, with most at risk between 5 feet and 10 feet of rise. These calculations and projections make it possible to translate hydrological data into meaningful temporal risk estimates.

Figure 2: Projected Local Sea Rise Level for Miami



Notes: The solid line shows the median projection, and the shading shows the 90% confidence intervals.

Source: Authors' calculations using sea level rise projections from the 2016 paper "Contribution of Antarctica to Past and Future Seal-Level Rise."

[Enlarge](#)

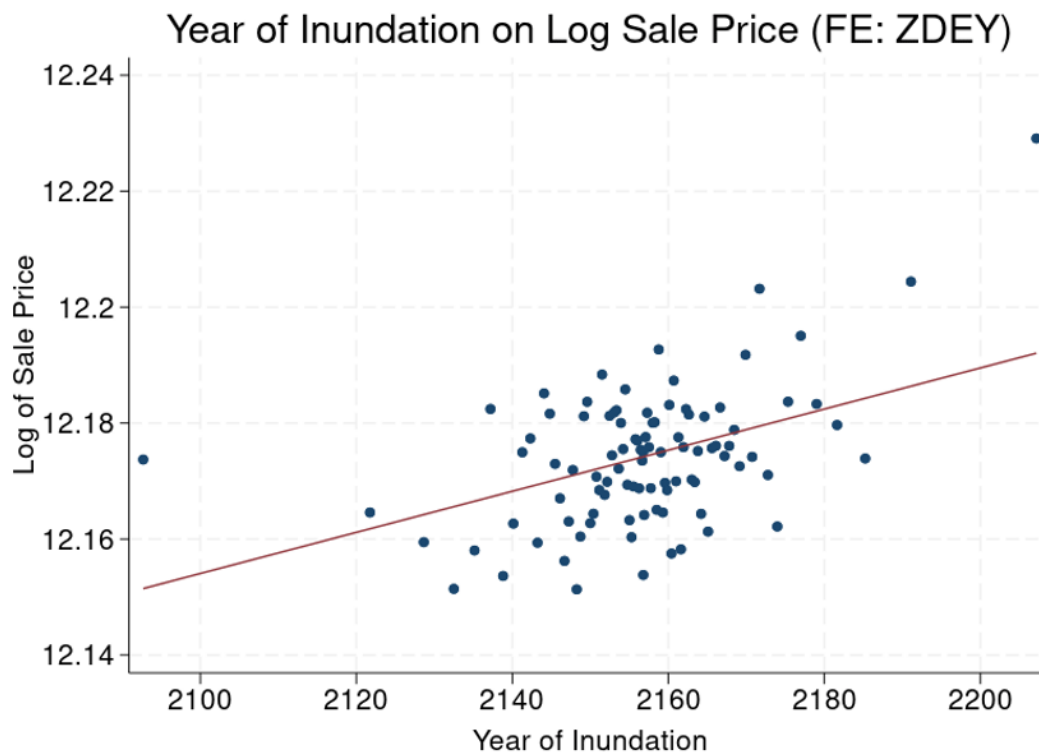
Sea Level Rise and House Prices

Although most projected inundations occur far in the future, housing markets appear to account for this risk today.

By matching property sales with projected inundation thresholds, we find that homes with higher exposure tend to sell for less, even after controlling for structural features and location. The relationship is consistent across markets: Properties expected to face earlier or greater inundation trade at a discount relative to less-exposed homes.

This pattern suggests that market participants are forward-looking, incorporating long-run coastal risk into property values well before those risks materialize.

Figure 3: Relationship Between Sea Level Rise Exposure and Property Sale Price



Notes: This figure shows a binned residual plot comparing the projected first year of inundation with log sale prices. The analysis controls for the property characteristics such as size, age, owner occupancy, and number of bedrooms and bathrooms. Values are adjusted to reduce the influence of extreme outliers. Location and year effects are controlled by grouping properties within the same ZIP code, elevation and proximity to shore.

Source: Authors' analysis based on CoreLogic and National Oceanic and Atmospheric Administration data.

[Enlarge](#)

Conclusion

Real estate offers a grounded view of how gradual physical risks translate into economic outcomes. Homes are fixed assets with long investment horizons, making their values sensitive to location-specific, long-term changes in coastal conditions.

By combining fine-scale spatial maps, local timing projections and market data, this research provides a clear, evidence-based view of how sea level rise is beginning to shape property values across U.S. coastlines.

Toan Phan is a senior economist, and Nicholas Weitzel is a research associate, both in the Research Department at the Federal Reserve Bank of Richmond.

¹ Calculation details behind this article's figures and numbers will be made available in the future in my working paper "A Market-Based Measure of Ambiguity Aversion: Housing Prices Under Rising Seas," co-authored with Michael Barnett, Jacob Dice, David Rodziewicz and

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