insurity COASTAL RISK USE CASE

INSURITY GEOSPATIAL ANALYTICS POWERED BY SPATIALKEY

How to Use Distance to Coast Data to Inform Your Coastal Risk

Being close to the coast is awesome from a "getting to the beach" perspective, and perhaps that's why coastal counties in the U.S. are home to over 126 million people.[1] But from a risk perspective, insuring properties on the coast can cause your premiums to spike and your blood pressure to rise at the mention of "storm surge."

Despite evidence of rising sea levels and more frequent and severe events—such as stalling hurricanes like Harvey, Florence, and Dorian—more people are living on coasts. In the U.S. alone, the estimated insured value of coastal exposure was $36.4 trillion in 2018 across 18 states, representing a 28.5 percent increase from 2012.[2]

If you're writing or managing coastal risk, chances are you're familiar with coastline approximations and how they play into your underwriting and portfolio management practices. Coupling coastline data with coastal related risks—such as land erosion, levees, and characteristics that go beyond surge-related risk—has been a game-changer for many of Insurity's clients. These value-added insights, along with the ability to contextualize risk within a data enrichment and geospatial analytics solution, has enabled insurers to take on new risks in a smart way. And, evaluate their portfolios to understand if they have adverse concentrations in areas near the coast that also have high susceptibility to related hazards.

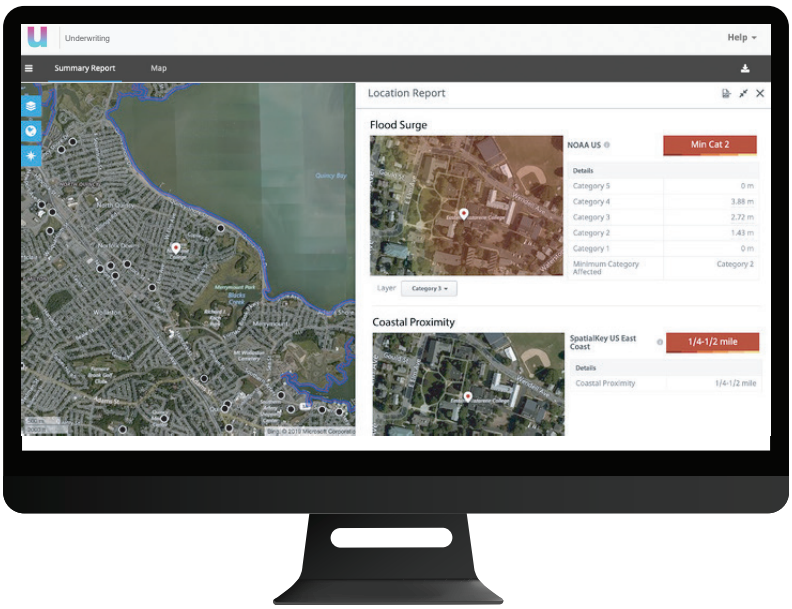
1. NOAA Office for Coastal Management, Economics and Demographics Fast Facts, 2016

2. Business Insurance, Insured Value of Coastal Exposures on the Rise: AIR, July 2019

Underwriting Coastal Risk

The below location is a half-mile or less from the coast. Using Insurity Geospatial Analytics Underwriting, you can visualize the risk in relation to the coastline and contextualize it in relation to open areas with minimal surface roughness and areas prone to surge risk. This helps inform your understanding of risk and determine the premium and deductibles that can be offered.

Layering in the storm surge hazard data, we can see that this risk, which is approximately 1/4 to 1/2 of a mile from the coast, is expected to be impacted by surge for Category 2+ hurricanes—with 1.43 meters of surge depth for a Cat 2 event.



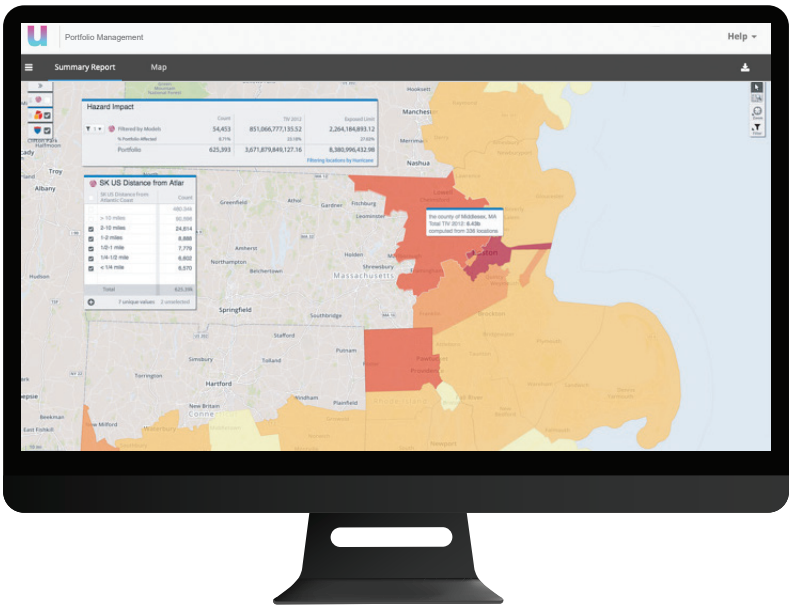
As an underwriter, having an accurate coastline to derive distance to coast for prospective risks is imperative to deciding:

- Whether a risk is eligible or needs to be referred (e.g. don't write business within one mile of the coast).
- What type and value of deductibles to offer (e.g. percentage deductible for anything that is within five miles of the coast).
- Whether catastrophe modeling is required or needed.
- How to adequately price premium and whether any discounts can be provided (e.g. discount premiums available if hurricane shutters exist for properties within 1,000 feet of the coast).

Managing Coastal Risk

In the below image, 54,453 locations fall within 10 miles of the coast. These locations make up 23 percent of this portfolio's TIV and 27 percent of its exposed limit. From this, you can see that locations within 10 miles of the coast have higher exposed limits in comparison with other risks in this portfolio. These risks will also have a higher risk associated with them from a coastal hazard risk perspective, meaning you have more exposed limits at higher risk. To reduce exposure, you could identify the highest accumulation counties, such as Middlesex, Massachusetts, in the below example, to apply underwriting moratoriums.

Analyze your coastal accumulations by using the distance to coast hazard layer in the Insurity Geospatial Analytics Portfolio Management solution along with geographic boundaries, such as counties.



As a portfolio analyst, profiling your exposures by their distance to coast will help you:

- Understand your portfolio accumulations and potential risk to catastrophic events.
- Anticipate how catastrophe models will respond to your portfolio (e.g. higher losses for coastal exposures).
- Inform underwriting guidelines (e.g. in the case above, possibly close down Middlesex, Massachusetts, county to new policies within five miles of the coast).

It's clear, distance to coast is a key element in understanding your risk while underwriting or managing your accumulations of exposure, however, it's just one piece of the puzzle. Layering in additional data elements, such as land erosion, proximity of levees, surge, and flooding is critical to contextualizing your risk—and making smart, informed decisions. To learn more about distance to coast data, or for more information about Insurity's geospatial analytics solutions, contact us.