Affordable Housing at Risk from Coastal Flooding

Program on Sea Level Rise | (sealevel@climatecentral.org)



Why? A triple threat

- Physical vulnerability of buildings
- Socioeconomic vulnerability of residents
- Increasing floods from rising seas



Affordable housing definition used

- federally subsidized
- "naturally occurring" = unsubsidized
 - Rents below local market rates
 - or < 30% of local median household income



Research factors

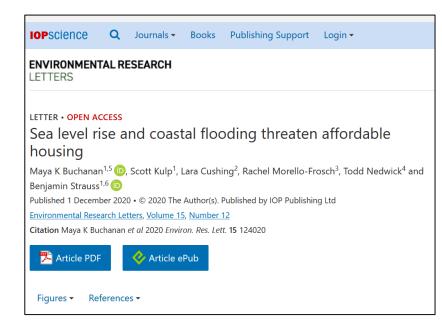
- Climate pollution level
- Sea level rise
- Flood heights and likelihoods
- Different years (2050 focus)
- Individual building footprints



https://www.microsoft.com/en-us/maps/building-footprints



Key findings



- Exposure triples by 2050
- NJ, NY, and MA
- Threat concentration



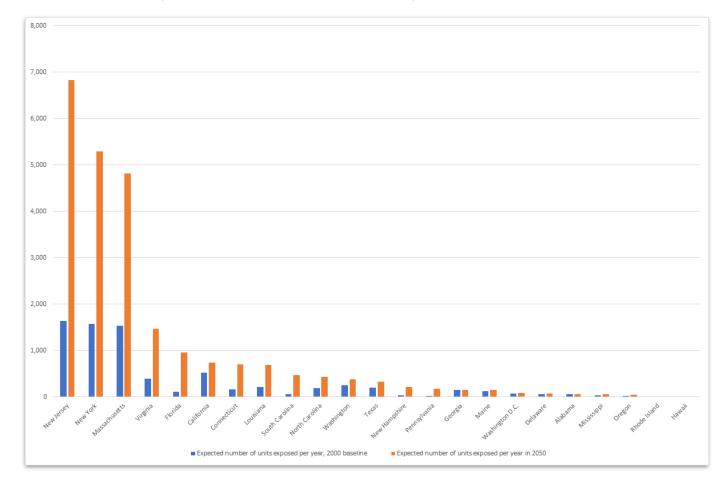
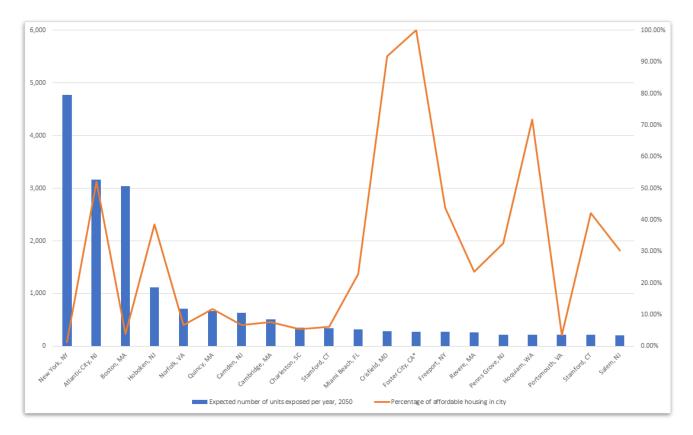


TABLE 1 - Affordable housing units at risk now and in 2050, under high carbon emissions scenario (RCP 8.5)

CLIMATE CENTRAL TABLE 2 - Future threat of coastal flooding to the top 20 cities exposed (in absolute terms) for 2050, under high carbon emissions scenario (RCP 8.5)



CLIMATE CENTRAL

Resources via coastal.climatecentral.org

- Scientific paper
- Report
- Recorded webinar
- Map tool
- Dynamic fact sheets



VIEW WORKSHOP RECORDING

Climate Central and the National Housing Trust held an online workshop on December exposure of the nation's affordable housing stock to coastal flooding and sea level rise, housing, and resilience. Main points covered:

- By 2050, virtually every coastal state is expected to have at least some affordable than one "coastal flood risk event" per year, on average—up from about half of co
- New Jersey, New York, and Massachusetts have the largest share of affordable ho units at risk; projections for New York City. Atlantic City, and Boston show that eac of units exposed to chronic coastal flooding by 2050.
- There is already a scarcity of affordable homes. Housing that's at risk of flooding c can often be protected, but such protections come with costs..
- Physical protective infrastructure is half the battle; persistent stressors of structu and inequitable access are also drivers of climate risk.
- Scientists can quantify risks at high levels but local community members and lead local insights needed to reduce those risks.
- Recapitalization of affordable housing buildings, such as refinancing and redevelo to better prepare existing housing from floods and other climate risks, often at lo times.

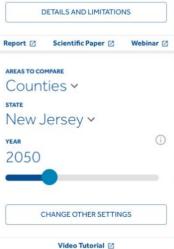
VIEW WORKSHOP RECORDING

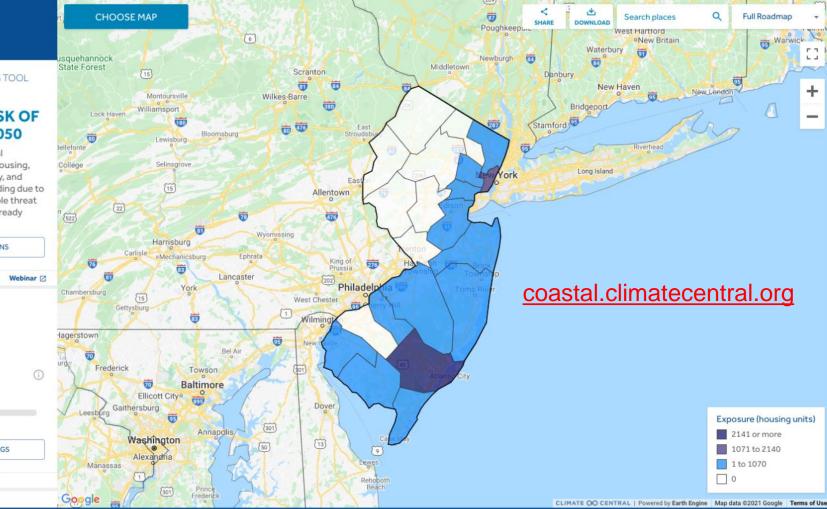
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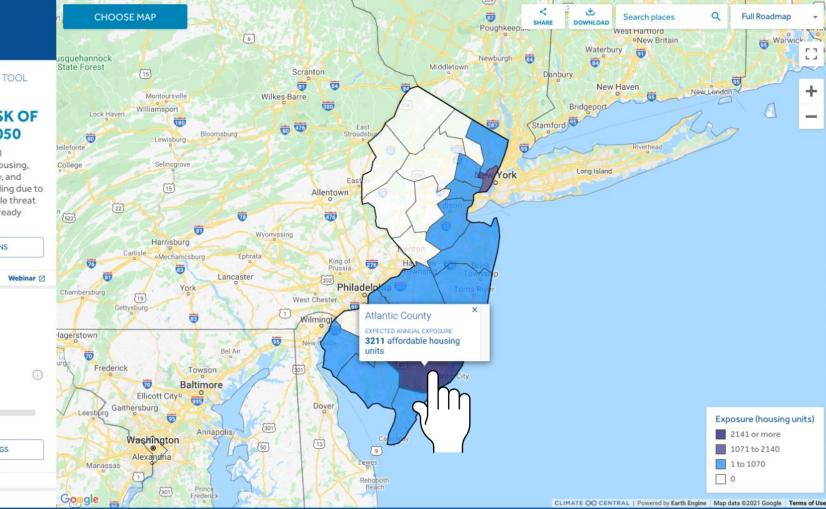






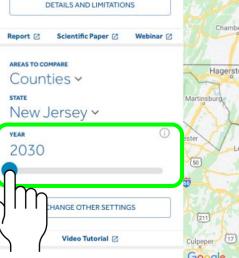
AFFORDABLE HOUSING AT RISK OF FLOODING IN 2050

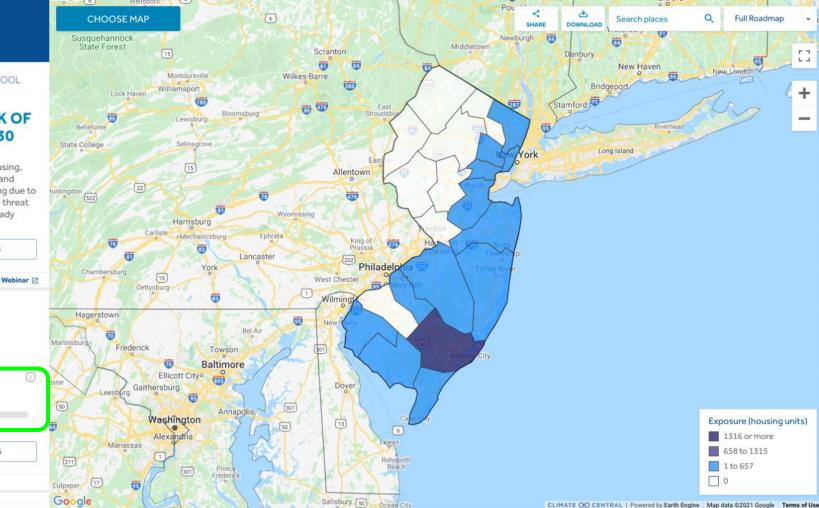






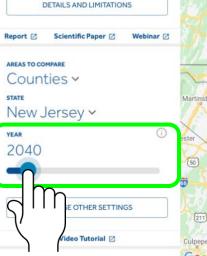
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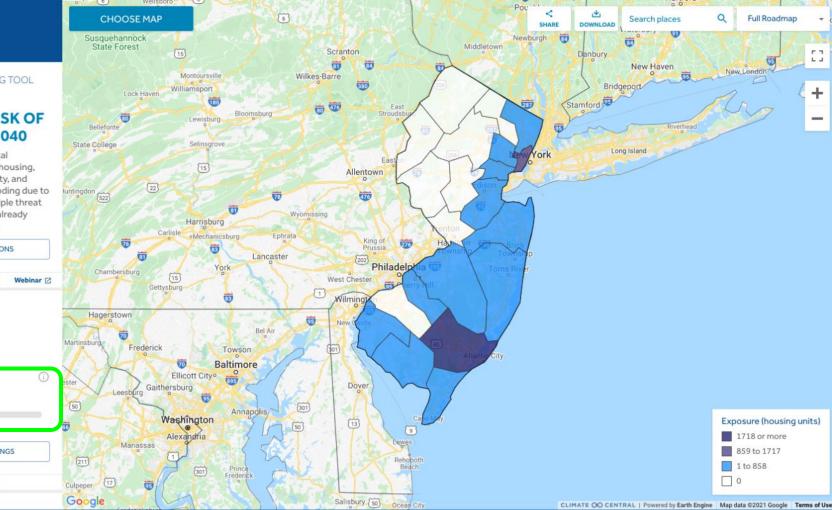






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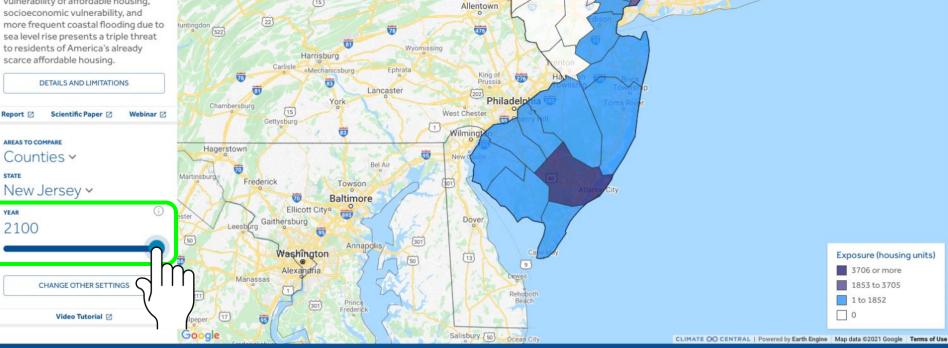






AFFORDABLE HOUSING AT RISK OF **FLOODING IN 2100**

The combination of physical vulnerability of affordable housing, socioeconomic vulnerability, and



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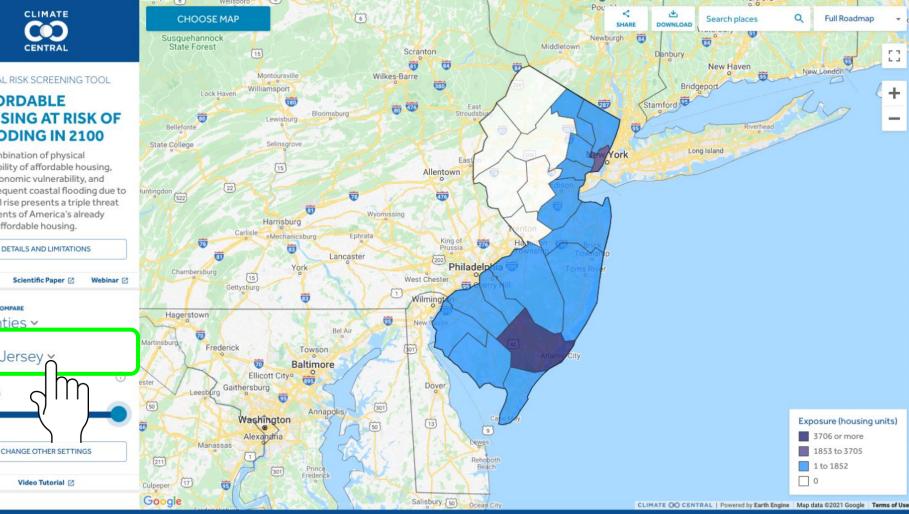
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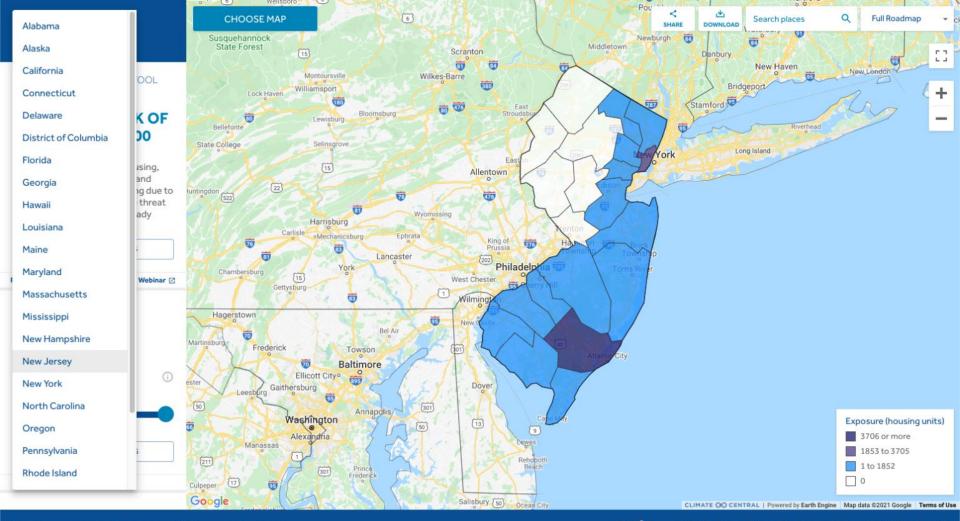
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AFFORDABLE HOUSING AT RISK OF **FLOODING IN 2100**



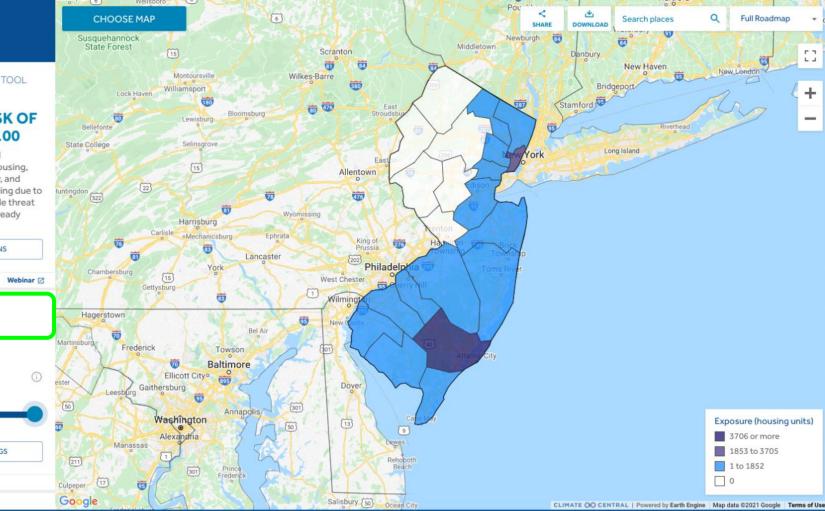






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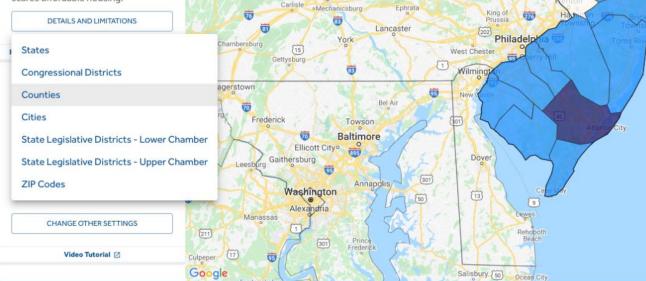






AFFORDABLE HOUSING AT RISK OF FLOODING IN 2100

The combination of physical vulnerability of affordable housing, socioeconomic vulnerability, and more frequent coastal flooding due to sea level rise presents a triple threat to residents of America's already scarce affordable housing.



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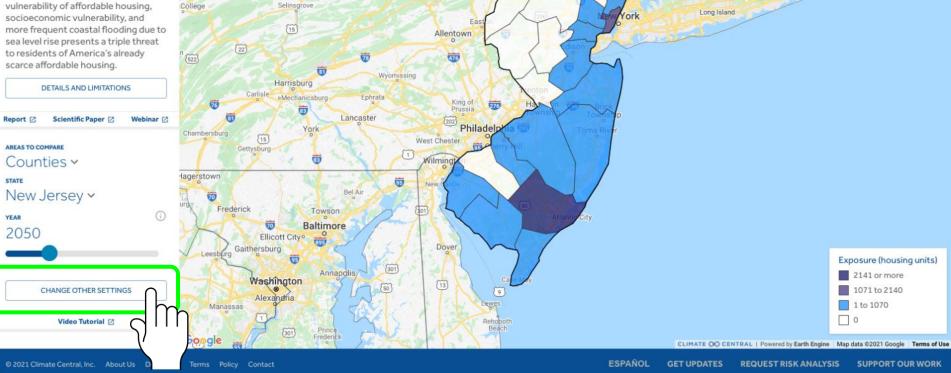
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COASTAL RISK SCREENING TOOL

AFFORDABLE HOUSING AT RISK OF FLOODING IN 2050

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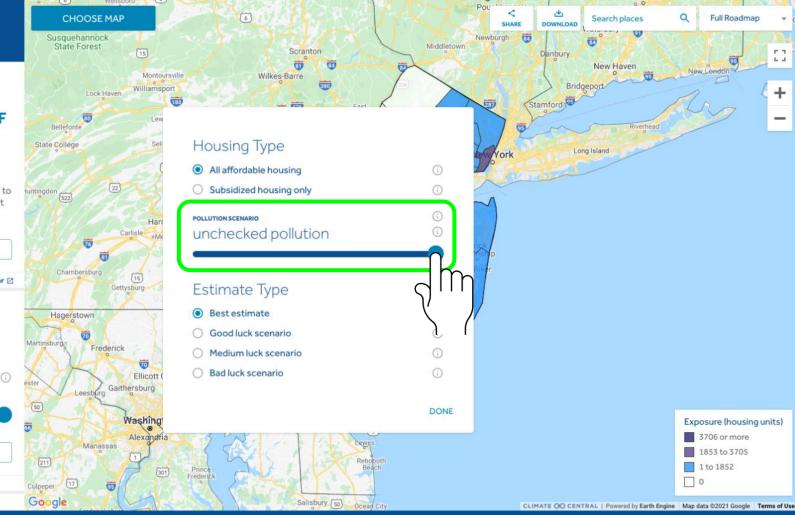


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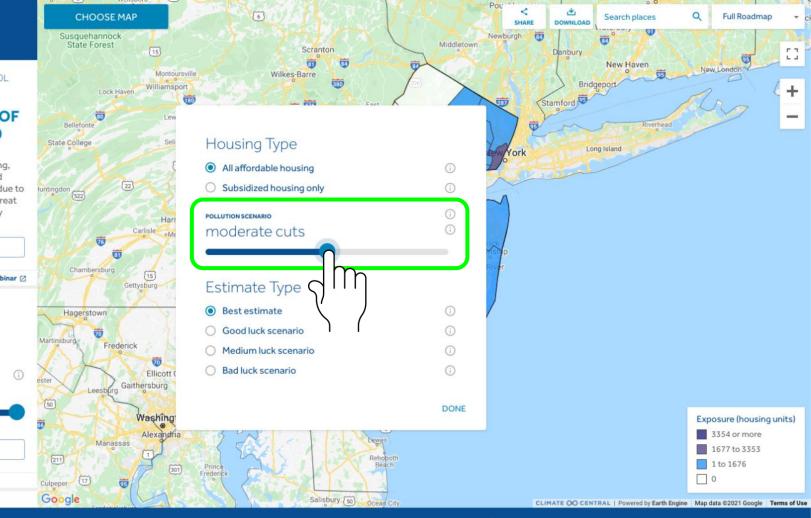
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Video Tutorial [2]

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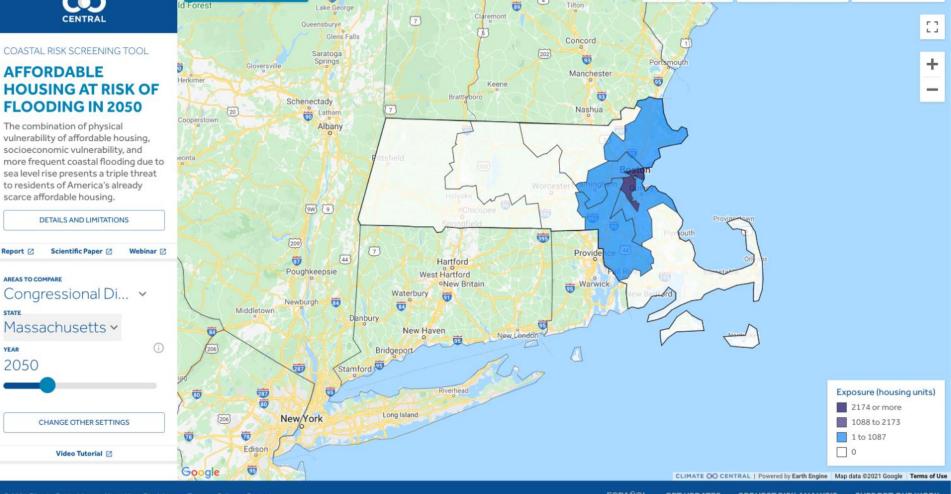
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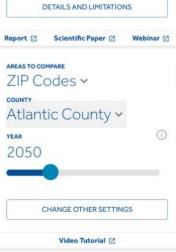
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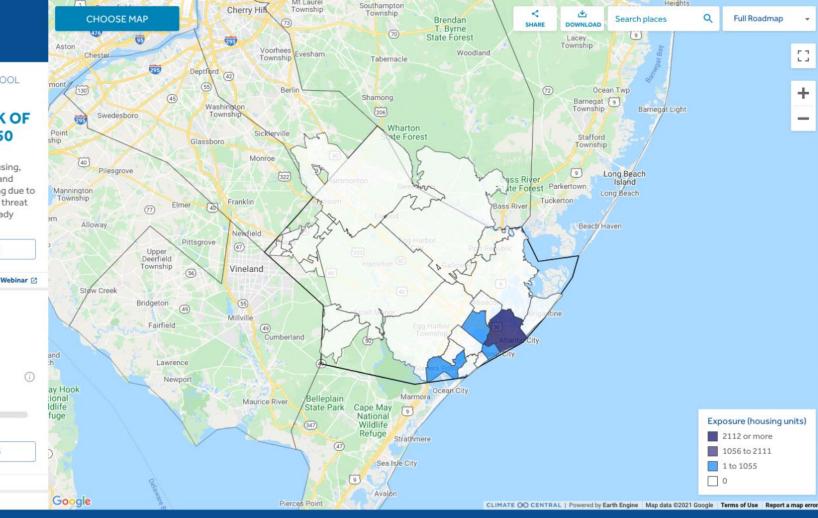
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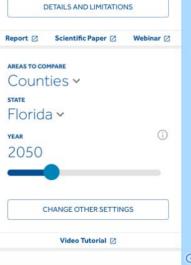
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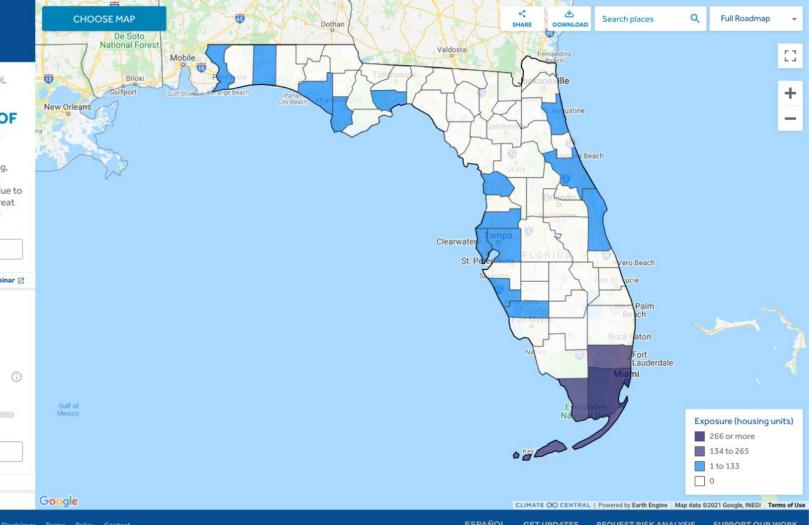






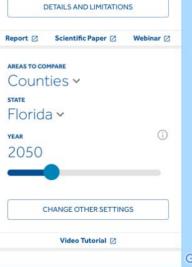
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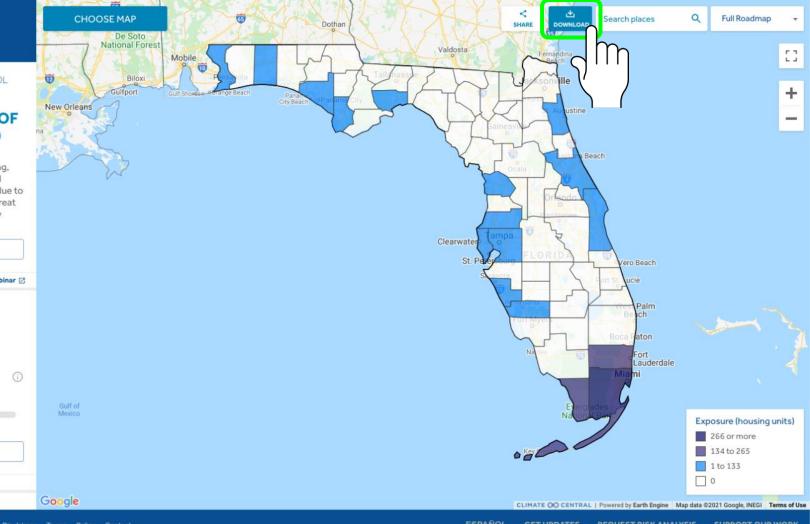






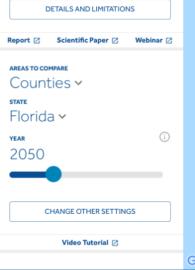
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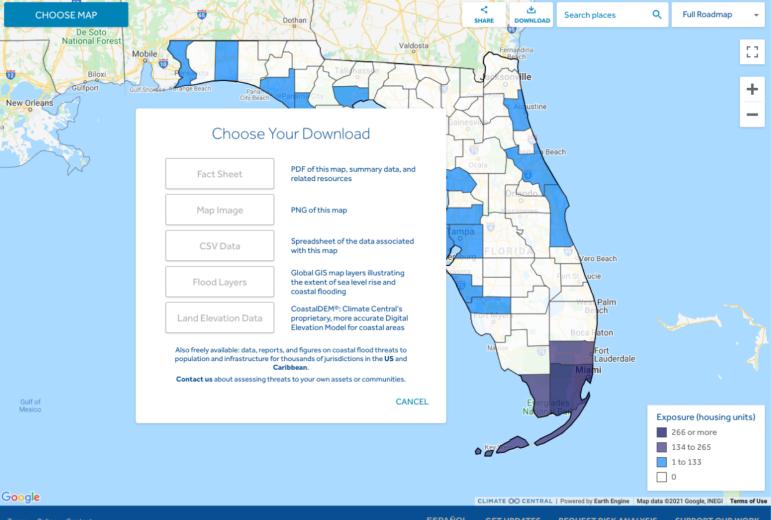






AFFORDABLE HOUSING AT RISK OF FLOODING IN 2050

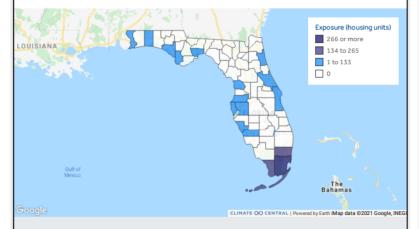




Affordable Housing at Risk of Coastal Flooding in Florida in 2050

The combination of the physical vulnerability of affordable housing, the socioeconomic vulnerability of residents, and more frequent coastal flooding due to sea level rise presents a triple threat to residents of America's already scarce affordable housing.





Counties with the most affordable housing at risk of coastal flooding in 2050

1. Miami-Dade	A	Ħ	A	A	A	Ħ	A	Ħ	A	A	399 Units
2. Monroe	A	A	A	Ħ	A	1					216 Units
3. Broward	Â	A	A	A	A						200 Units
			4	= 40	Unit	c					

🗬 = 40 Units

About This Analysis

This analysis provides a best estimate of affordable housing units at risk if annual global climate pollution continues to climb through most of the century, eventually resulting in 3 or 4°C of warming by 2100 (a pathway known as RCP 8.5).

Frequently Asked Questions

What causes sea level to rise?

Warming temperatures due to climate change are causing ice to melt and water to expand, increasing the volume of ocean waters and causing the sealevel to rise. Additionally, in some places land is sinking due to natural processes or extraction of water or fossil fuels from the ground.

What causes climate change?

The main activity causing climate change is the burning of fossil fuels, which emits heat-trapping pollution.

Can sea level rise be slowed?

Major cuts in heat-trapping pollution would reduce future sea level rise, but some sea level rise is inevitable due to pollution already in the atmosphere.

How does sea level rise affect flooding?

Sea level rise raises the platform atop which waves, tides, and storm surge arrive, making coastal floods more severe and more frequent.

Why is affordable housing particularly vulnerable to sea level rise?

Affordable housing tends to be older and is rarely equipped with resilience-enhancing features (such as flood proofing, off-grid energy, or backwater valves), due to the cost of such measures. Additionally, residents of affordable housing often lack the financial resources to repair, rebuild, or retreat from their housing after it is damaged by flood water s.

Terminology

Affordable housing includes both subsidized housing and naturally occurring affordable housing.

Subsidized housing is supported by federal or state programs.

Naturally occurring affordable housing is rented below local market rates or for less than 30% of local median income levels without rental assistance.

Exposure or Units Exposed denotes the number of affordable housing units in a given area expected to be exposed to at least one coastal flood risk event in a year.

A unit experiences a coastal flood risk event when the local coastal water level reaches higher than the lowest ground elevation of the building containing the unit.

"At risk of flooding" is a synonym for exposure to flooding, as defined above.

Reducing Your Risk

de.

- Actions to curb heat-trapping pollution will reduce sea level rise, but some rise is unavoidable.
- Learn more about the actions you can take yourself at sealevel.climatecentral.org/flood-preparation.
- Contact us to learn how we can help your community participate in FEMA's Community Rating System.
- Enterprise Community Partners' Portfolio Protect tool identifies properties' risk from climate disasters.
- Enterprise Community Partners' Keep Safe guide shows how to make homes more resistant to natural disasters.
- New Ecology's Multifamily Housing Resiliency Audit provides actions to improve resiliency to severe weather.

Climate Central is a non-profit science and news organization providing authoritative information to help the public and policymakers make sound decisions about climate and energy.





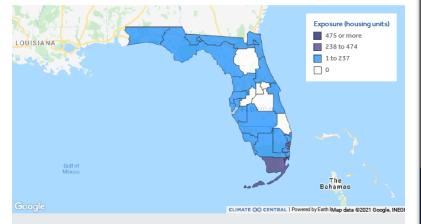
Learn more about what is at risk from sea level rise and coastal flooding at coastal.climatecentral.org" and riskfinder.org



Affordable Housing at Risk of Coastal Flooding in Florida in 2070

The combination of the physical vulnerability of affordable housing, the socioeconomic vulnerability of residents, and more frequent coastal flooding due to sea level rise presents a triple threat to residents of America's already scarce affordable housing.





Congressional Districts with the most affordable housing at risk of coastal flooding in 2070

1.FL-27	會	ŕ	Â	Â	Â	Â	Â	Â	Â	712 Units
2.FL-26	會	A	A	A	1					379 Units
3. FL-22	龠	A	A	1						276 Units
			Â	= 80	Unit	s				

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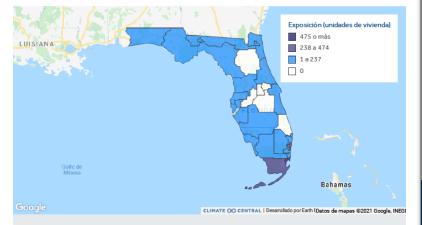




Vivienda Asequible en Riesgo de Inundación Costera en Florida en 2070

La combinación de la vulnerabilidad física de una vivienda asequible, la vulnerabilidad socioeconómica y las inundaciones costeras más frecuentes debido al aumento del nivel del mar presenta una triple amenaza para los residentes de las ya escasas viviendas asequibles de Estados Unidos.





Distritos Congresionales es con la mayoría de vivienda asequible en riesgo de inundaciones costeras en 2070

1.FL-27	Â	ŕ	Â	Â	Â	Â	Â	Â	Â	712 Unidades
2.FL-26	Â	A	A	A	1					379 Unidades
3. FL-22	會	A	A	1						276 Unidades
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Para obtener más recursos, resúmenes estatales, métodos, citas completas, limitaciones y más, consulte coastal.climatecentral.org (elija un mapa: viviendas asequibles)

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Acerca de Este Análisis

Este análisis proporciona una mejor estimación de las unidades de vivienda asequible en riesgo si la contaminación climática global anual continúa aumentando durante la mayor parte del siglo, lo que eventualmente resultará en un calentamiento de 3 a 4 * C para 2100 (una via conocida como RCP 8.5).

Preguntas frecuentes

¿Qué causa el aumento del nivel del mar?

El aumento de las temperaturas debido al cambio climático está provocando que el hielo se derrita y el agua se expanda, lo que aumenta el volumen de las aguas del océano y hace que suba el nivel del mar. Además, en algunos lugares la tierra se está hundiendo debido a procesos naturales o extracción de agua o combustibles fósiles del suelo.

¿Qué causa el cambio climático?

La principal actividad que causa el cambio climático es la quema de combustibles fósiles, que emite contaminación que atrapa el calor.

¿Se puede dilatar el aumento del nivel del mar?

Los recortes importantes en la contaminación que atrapa el calor reducirian el aumento futuro del nivel del mar, pero es inevitable un aumento del nivel del mar debido a la contaminación que ya está en la atmósfera.

¿Cómo afecta el aumento del nivel del mar a las inundaciones?

El aumento del nivel del mar eleva la plataforma sobre la que llegan olas, mareas y marejadas ciclónicas, lo que hace que las inundaciones costeras sean más graves y frecuentes.

¿Cómo se determinó el riesgo de inundaciones costeras para las viviendas asequibles? Las viviendas asequibles tienden a ser más antiguas y rarvez están equipadas con características que mejoren la resiliencia (como protección contra inundaciones, energía fuera de la red o válvulas de remanso), debido al costo de tales medidas. Además, los residentes de viviendas asequibles a menudo caracen de los recursos finadas por las inundaciones.

Terminología

Viviendas asequibles incluyen tanto la vivienda subvencionada como la vivienda asequible normal o de origen natural.

Las viviendas subsidiadas son apoyadas por programas federales o estatales.

Las viviendas asequibles normales o no subsidiadas se alquilan por debajo de las tarifas del mercado local o por menos del 30% de los niveles de ingresos medios locales sin asistencia para el alquiler.

Exposición o Unidades Expuestas denota la cantidad de unidades de vivienda asequible en un àrea determinada que se espera que estén expuestas a al menos un evento de riesgo de inundación costera en un año.

Una unidad experimenta un evento de riesgo de inundación costera cuando el nivel del agua costera local alcanza un nivel más alto que la elevación del suelo más baja de la edificación que contiene la unidad.

CLIMATE

Reduzca Su Riesgo

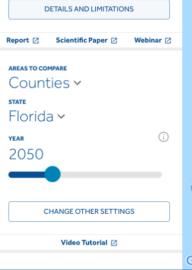
- Las acciones para frenar la contaminación que atrapa el calor reducirán el aumento del nivel del mar, pero algún aumento es inevitable.
- Obtenga más información sobre las acciones que puede realizar usted mismo en ready.gov/floods.
- La guia Keep Safe de Enterprise Community Partners para hacer que los hogares sean más resistentes a tormentas, terremotos e inundaciones.

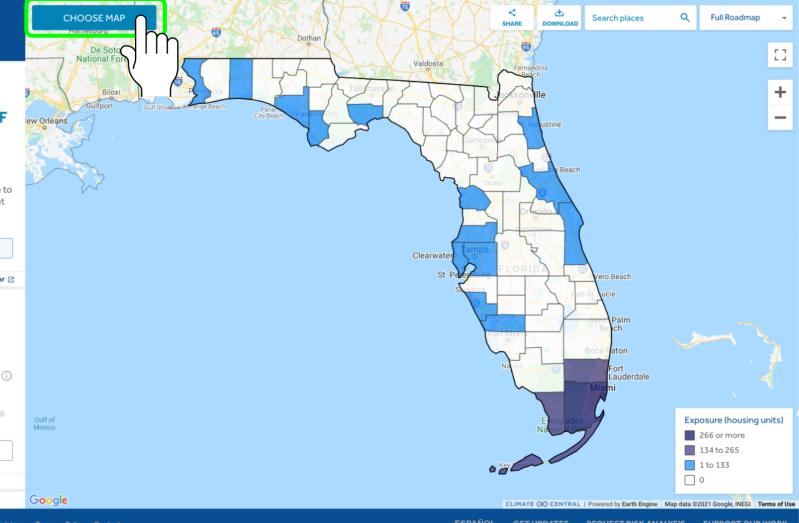
Climate Central es una organización científica y noticiosa sin fines de lucro que proporciona información autorizada para ayudar al público y a los legisladores a tomar decisiones acertadas sobre el clima y la energía.

> Obtenga más información sobre lo que está en riesgo por el aumento del nivel del mar y las inundaciones costeras en coastal.climatecentral.org* y riskfinder.org



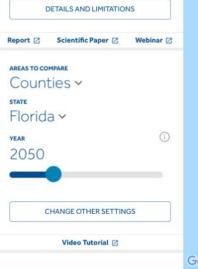
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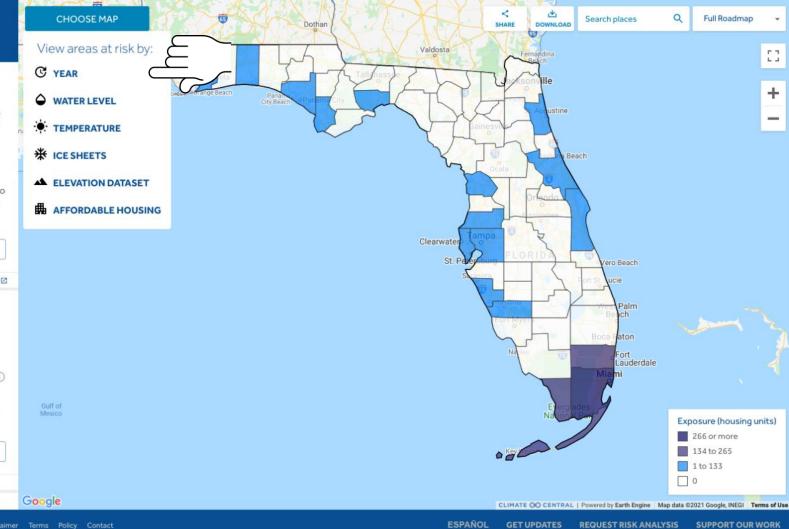






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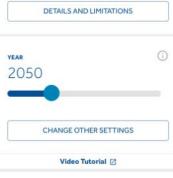
CHOOSE MAP

New Orleans

COASTAL RISK SCREENING TOOL

LAND PROJECTED TO **BE BELOW ANNUAL** FLOOD LEVEL IN 2050

Explore sea level rise and coastal flood threats by adjusting the controls below.



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Gulf Shoreso Orange Beach

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Tallahassee



Coastal.climatecentral.org (Choose map: Affordable housing)

Queries to: Program on Sea Level Rise sealevel@climatecentral.org

