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

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)
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)

*Exposure may be overstated in Foster City, CA where new levees may not have been included in a national levee inventory used in the analysis. See paper for details.
Resources via coastal.climatecentral.org

- Scientific paper
- Report
- Recorded webinar
- Map tool
- Dynamic fact sheets
Affordable Housing at Risk of Flooding in 2050

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.

coastal.climatecentral.org
AFFORDABLE HOUSING AT RISK OF FLOODING IN 2050

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.
AFFORDABLE HOUSING AT RISK OF FLOODING IN 2030

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.
AFFORDABLE HOUSING AT RISK OF FLOODING IN 2040

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.
COASTAL RISK SCREENING TOOL
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.

DETAILS AND LIMITATIONS

Report Scientific Paper Webinar

AREAS TO COMPARE
Counties
STATE
New Jersey

YEAR
2100

Exposure (housing units)
- 3706 or more
- 1853 to 3705
- 1 to 1852
- 0

CHANGE OTHER SETTINGS

Video Tutorial

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AFFORDABLE HOUSING AT RISK OF FLOODING IN 2100

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DETAILS AND LIMITATIONS

AREAS TO COMPARE
Counties

STATE
New Jersey

YEAR
2100

Exposure (housing units)
- 3706 or more
- 1853 to 3705
- 1185 to 1852
- 0

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Housing Type
- All affordable housing
- Subsidized housing only

Pollution Scenario
- unchecked pollution

Estimate Type
- Best estimate
- Good luck scenario
- Medium luck scenario
- Bad luck scenario

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DETAILS AND LIMITATIONS

Report Scientific Paper Webinar

AREAS TO COMPARE
Congressional Di...

STATE
Massachusetts

YEAR
2050

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DETAILS AND LIMITATIONS

AREAS TO COMPARE

Counties

STATE
Florida

YEAR
2050

Exposure (housing units)

- 266 or more
- 134 to 265
- 1 to 133
- 0

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COASTAL RISK SCREENING TOOL

AFFORDABLE HOUSING AT RISK OF FLOODING IN 2050

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.

Choose Your Download

- Fact Sheet
- Map Image
- CSV Data
- Flood Layers
- Land Elevation Data

PDF of this map, summary data, and related resources

PNG of this map

Spreadsheet of the data associated with this map

Global GIS map layers illustrating the extent of sea level rise and coastal flooding

CoastalDEM®: Climate Central’s proprietary, more accurate Digital Elevation Model for coastal areas

Also freely available: data, reports, and figures on coastal flood threats to population and infrastructure for thousands of jurisdictions in the US and Caribbean.

Contact us about assessing threats to your own assets or communities.

CANCEL

Areas to Compare

Counties

State: Florida

Year: 2050

Change other settings

Video Tutorial

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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.

962 UNITS EXPOSED

Exposure (hunting units)
- 266 or more
- 134 to 265
- 1 to 133
- 0

Frequently Asked Questions

What causes sea level to rise?
- Warmer temperatures due to climate change are causing ice to melt and water to expand.

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

What causes sea level rise to be slowed?
- Less sea level rise would be expected if more carbon dioxide was not added to 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 flooding 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, flood-resistance, or backwater valves.

Reducing Your Risk

- Actions to curb heat-trapping pollution will reduce sea level rise, but some rise is unavoidable.
- Learn more about the actions you can take to protect yourself at www.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 Resilience tool identifies properties at risk from climate disasters.
- Enterprise Community Partners’ Keep Safe tool provides information on how to make homes more resistant to natural disasters.
- New Ecologic’s Multifamily Housing Resilience Audit provides information on how to make homes more resistant to severe weather and climate change.

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

**Exposure**

- 266 or more
- 134 to 265
- 1 to 133
- 0

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

1. Miami-Dade = 399 Units
2. Monroe = 216 Units
3. Broward = 200 Units

For more resources, state briefs, methods, full citations, limitations, and more see coastal.climatecentral.org (choose map affordable housing).
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.

2092 Units Exposed

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 sea level to rise. Additionally, some land is sinking due to natural processes or the 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 past pollution in the atmosphere.

How does sea level rise affect flooding?

Sea level rise raises the platform atop which waves, tides, and storm surges arrive, making coastal flooding 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 backup water valves), due to the cost of such measures. Additionally, residents of affordable housing often lack the financial resources to repair, rebuild, or relocate from their housing after it is damaged by flood waters.

Reducing Your Risk

- 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 seawater.climatecentral.org/flood-preparation.
- Contact us to learn how we can help your community participate in FEMA’s Community Rating System.
- Enterprise Community Partners’ Risk Tool identifies properties at risk from climate disasters.
- Enterprise Community Partners’ Keep Safe guides shows how to make homes more resistant to natural disasters.
- New Ecological’s Multifamily Housing Resilience Audit provides actions to improve resilience to severe weather.

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Learn more about what is at risk from sea level rise and coastal flooding at coastal.climatecentral.org and riskfinder.org
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 1100 viviendas asequibles de Estados Unidos.

2092 UNIDADES EXPUESTAS

Exposición (unidades de vivienda)
- 475 o más
- 258 a 474
- 126 a 257
- 57 a 125
- 0

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 disuelva 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 de 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 está presente en el aire.

¿Po qué puede afectar el aumento del nivel del mar?
Las consecuencias más importantes de la contaminación que provoca el calentamiento del agua son el aumento del nivel del mar, por lo que es necesario tomar medidas para reducir la contaminación que ya está en el ambiente.

¿Cómo afecta el aumento del nivel del mar a las inundaciones?
El aumento del nivel del mar avanza la plataforma sobre la que están las viviendas y las inundaciones, lo que hace que las inundaciones costeras sean más graves y frecuentes.

¿Cómo se determina el riesgo de inundaciones costeras para las viviendas asequibles?
Las viviendas asequibles tienen una edad más antigua y rara vez están equipadas con características que mejoran la resistencia (como protección contra inundaciones, energía de bajo costo o valores de renuencia), debido al costo de tales medidas. Además, las vidas de las viviendas asequibles a menudo carecen de los recursos financieros para reparar, reconstruir o evitar áreas de sus viviendas después de que hayan sido dañadas por las inundaciones.

Distritos Congresionales con la mayoría de viviendas asequibles en riesgo de inundaciones costeras en 2070
1. FL-27: 712 Unidades
2. FL-26: 379 Unidades
3. FL-22: 276 Unidades
4. FL-88: 80 Unidades

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 guía Keep Safe de Enterprise Community Partners para hacer que los hogares sean más resistentes a los terremotos e inundaciones.

Clima Central es una organización científica y no lucrativa 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 eosat.clima-central.org y rockefeller.org

Terminología
Viviendas asequibles incluyen tanto la vivienda asequible normal o de organización local.

Las viviendas ahorradas son apoyadas por programas federales y estatales.
Las viviendas asequibles son una subclase de la vivienda asequible normal o de organización local.

Exposición y Unidades Exposiciones dan la cantidad de unidades de vivienda asequibles en una determinada área que están expuestas a al menos un evento de inundación costera en un año. Un año experimenta un evento de inundación costera cuando el nivel del agua llega al nivel de las inundaciones costeras de las viviendas asequibles que están expuestas a al menos un evento de inundación costera en un año.
AFFORDABLE HOUSING AT RISK OF FLOODING IN 2050

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DETAILS AND LIMITATIONS

AREAS TO COMPARE

Counties

STATE

Florida

YEAR

2050

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COASTAL RISK SCREENING TOOL

AFordable Housing at Risk of Flooding in 2050

View areas at risk by:

- **YEAR**
- **WATER LEVEL**
- **TEMPERATURE**
- **ICE SHEETS**
- **ELEVATION DATASET**
- **AFFORDABLE HOUSING**
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.

DETAILS AND LIMITATIONS

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

Queries to: Program on Sea Level Rise
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