



The U.S. Climate Resilience Toolkit: Going Beyond Data to Data-based Answers to Users' Questions

Federal Environmental Symposium

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Meet the Challenges of a Changing Climate

Find information and tools to help you understand and address your climate risks.

LEARN HOW TO BUILD
RESILIENCE >

SEE WHAT OTHERS ARE
DOING >

USE THE CLIMATE
EXPLORER >

TOUR THE TOOLKIT ▾

Online at <https://toolkit.climate.gov>

CRT's Goals & Objectives

- **Ultimate outcome:** people use the CRT to help them build climate resilience
- **Goals:**
 - Help people find and use timely and relevant science-based tools, information, and expertise they need to plan and prepare for hazards
 - Improve people's understanding of, and ability to manage, their climate-related risks and opportunities.
- **Objectives:**
 - Sustain partnerships with topical and regional subject matter experts to identify and co-produce content and metadata
 - Co-develop & evolve an online framework for discovery of relevant, actionable information and tools
 - Engage with decision makers to promote awareness & use of the site, and to solicit feedback to guide and inform its evolution

CRT Target Audiences



CRT's Target Audiences



1. **Adaptation Decision Service Specialists**
(i.e., “go-the-last-mile service providers”)
2. Municipal planners and other city officials
3. Energy and Water Utilities
4. Natural resources managers
5. Facilities and infrastructure managers
6. Business operations and supply chain managers
7. Policy makers at all levels of government

Motivated information seekers

- Application-oriented professionals seek locally & temporally relevant info that can help them better manage their assets (both risks & opportunities).
- Key Questions:
 - How do I develop and implement a climate resilience plan?
 - What are others (like me) doing? How are they doing it? With what outcomes?
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 - Who can build my / my staff's understanding, skill & capacity?
 - How can I make a no-regrets decision in the face of so much uncertainty?

CRT's “Steps to Resilience” Framework

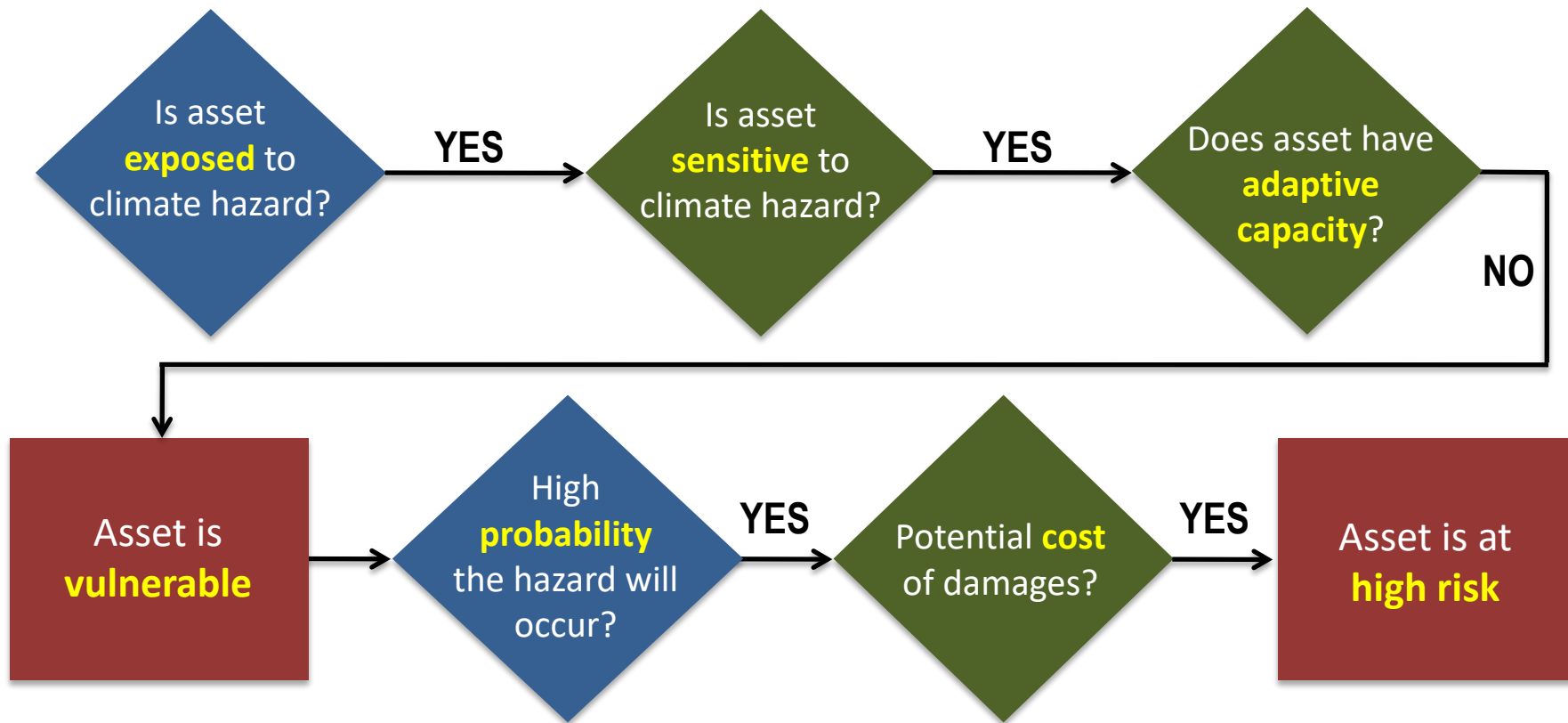


➡ Did you know?

➡ Why should we care?

What can we do about it?

Science agencies' inputs to StR Steps 1 and 2



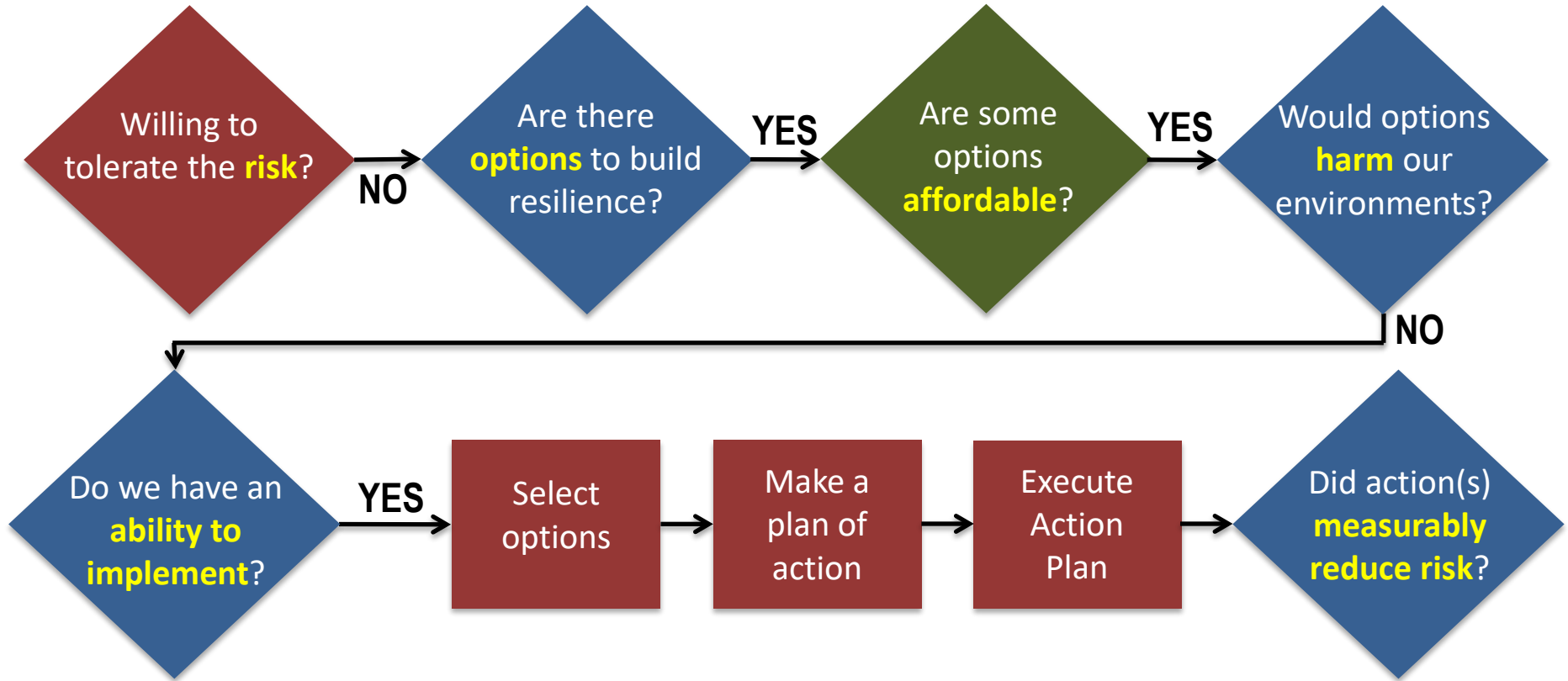
LEGEND:

Gov't resources useful

Local knowledge needed

Output needed for next step

Science agencies' inputs to StR Steps 3-5



LEGEND:

Gov't resources useful

Local knowledge needed

Output needed for next step



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CRT's case studies and tools in StR context

1	Explore Hazards	⇒ 8 Case Studies, 294 Tools
2	Assess Vulnerability & Risks	⇒ 31 Case Studies, 171 Tools
3	Investigate Options	⇒ 27 Case Studies, 129 Tools
4	Prioritize & Plan	⇒ 19 Case Studies, 52 Tools
5	Take Action	⇒ 64 Case Studies, 63 Tools

CRT's Climate Explorer helps people understand how exposure to climate hazards is changing

The screenshot shows the homepage of the CRT's Climate Explorer. The background is a satellite map of a coastal area. In the top left, there is a logo for the 'U.S. Climate Resilience Toolkit' and a 'Menu' button. In the top right, there are links for 'Tour This Page', 'About', 'Definitions', 'FAQ', and 'Credits'. A large dark blue banner across the top contains the URL 'https://crt-climate-explorer.nemac.org'. Below this, the title 'THE CLIMATE EXPLORER' is displayed in large, bold, blue letters. Underneath the title, a white box contains the text: 'Explore graphs and maps of historical and projected climate variables for any county in the contiguous United States.' On the right side, there is a blue sidebar with four menu items: 'Select a location' (with a magnifying glass icon), 'View by variable' (with a list icon), 'Weather & Tidal Stations' (with a location pin icon), and 'New here? Take the tour' (with a right arrow icon). A red 'SHARE' button is located in the top right corner of the map area. At the bottom left, it says 'Designed by Habitat Seven'. At the bottom right, there is a row of logos for 'GlobalChange.gov', 'U.S. Global Change Research Program', 'NEMAC', 'U.S. Environmental Protection Agency', 'USGS', 'NASA', and 'NOAA'.

U.S. Climate Resilience Toolkit

Menu

Tour This Page About Definitions FAQ Credits

<https://crt-climate-explorer.nemac.org>

THE CLIMATE EXPLORER

Explore graphs and maps of historical and projected climate variables for any county in the contiguous United States.

- Select a location
- View by variable
- Weather & Tidal Stations
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SHARE

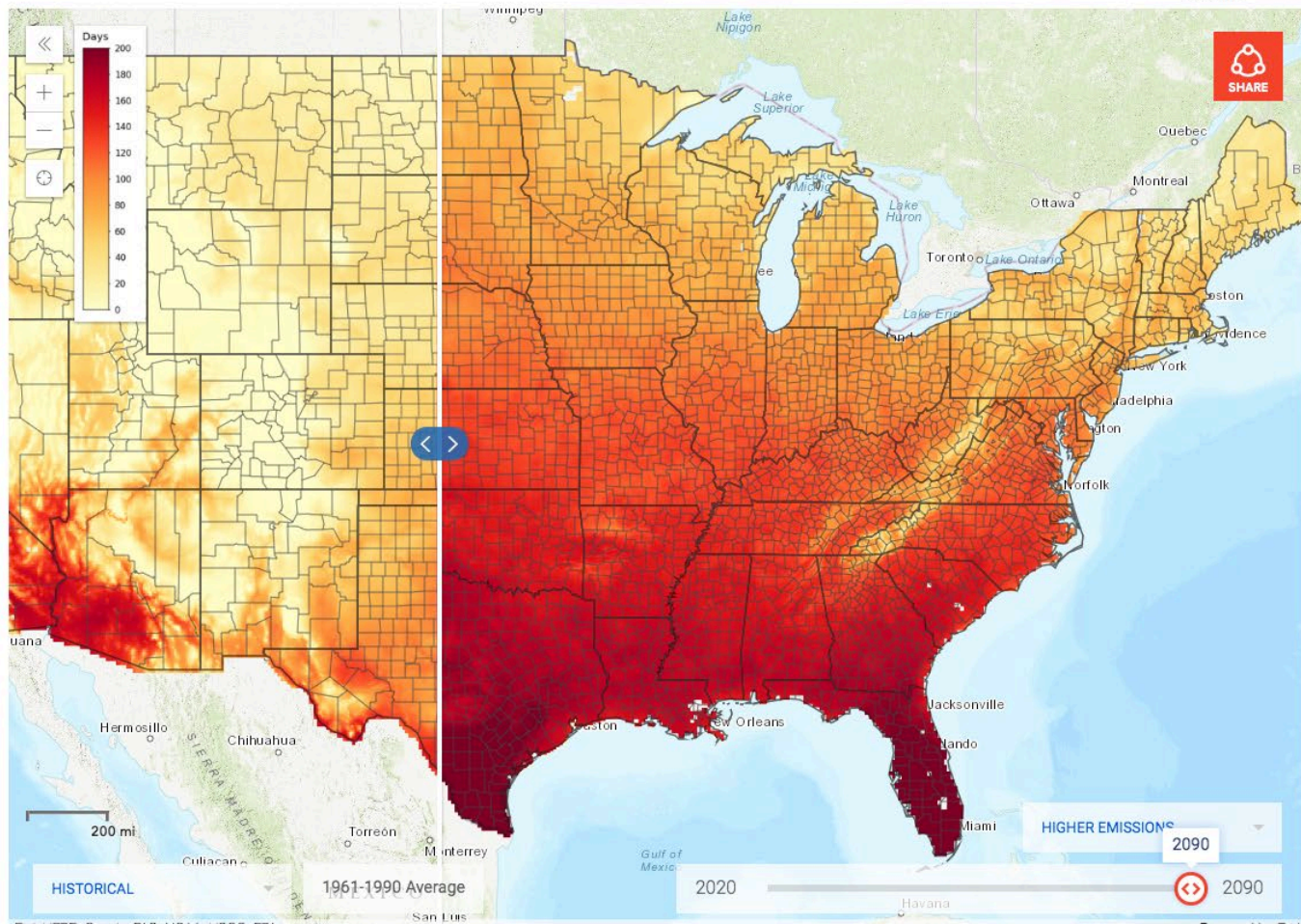
GlobalChange.gov U.S. Global Change Research Program NEMAC U.S. Environmental Protection Agency USGS NASA NOAA

Designed by Habitat Seven

Zoom to location

Days w/ max > 90°F

About Days w/ max > 90°F



Downscaled projections for every U.S. county



Menu

Home

Location

Baltimore, MD

Tour This Page
About
Definitions
FAQ
Credits

Temperature

Avg Daily Max Temp (°F)

Avg Daily Min Temp (°F)

Days w/ max > 90°F

Annual

Days w/ max > 95°F

Days w/ max > 100°F

Days w/ max > 105°F

Days w/ max < 32°F

Days w/ min < 32°F

Days w/ min > 80°F

Days w/ min > 90°F

Display: Actual



Chart: Baltimore City

Annual Days w/ max > 90°F



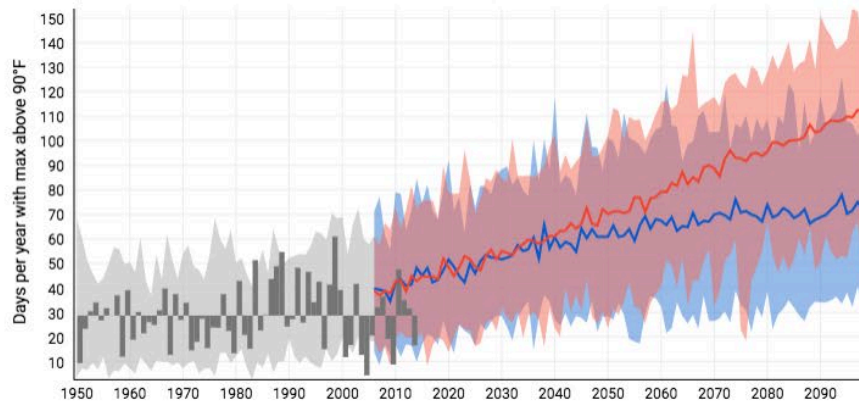
How to read this



Image



Data



Observations

Historical (Modeled)

Lower Emissions

Higher Emissions

Averages

1950

2100



Map:

Downscaled projections for every U.S. county



Menu

Home

Location

Baltimore, MD

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About
Definitions
FAQ
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Other Variables

Heating Degree Days (*F-days)

Cooling Degree Days (*F-days)

Annual

Growing Degree Days (*F-days)

Modified Growing Degree Days (*F-days)

Display: Actual



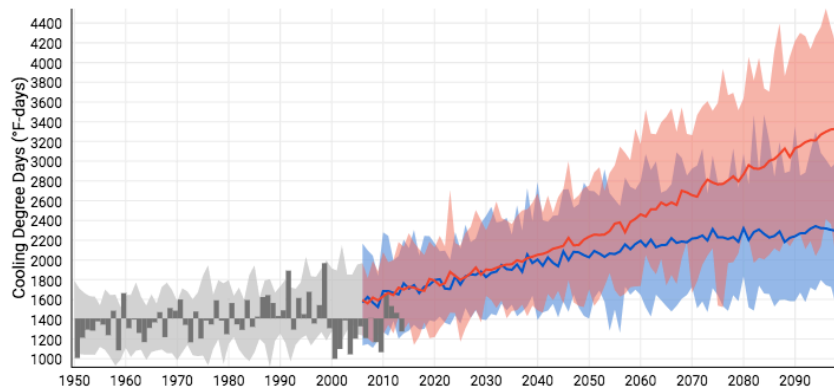
Chart: Baltimore City

Annual Cooling Degree Days (*F-days)

How to read this

Image

Data



Observations

Historical (Modeled)

Lower Emissions

Higher Emissions

Averages

1950

2100

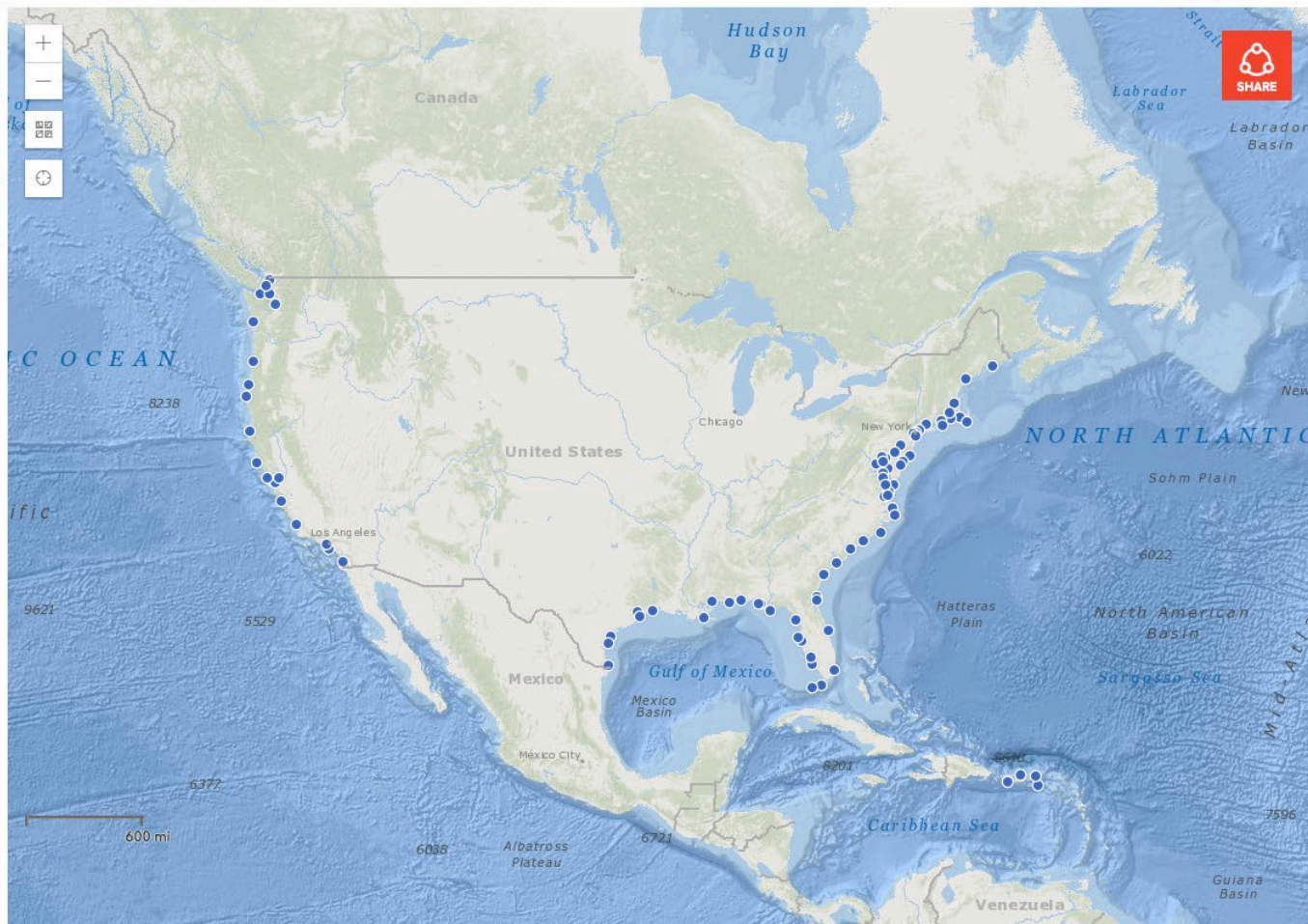


Map:

Zoom to location

High-tide Flooding

About High-tide Flooding



Zoom to location

High-tide Flooding

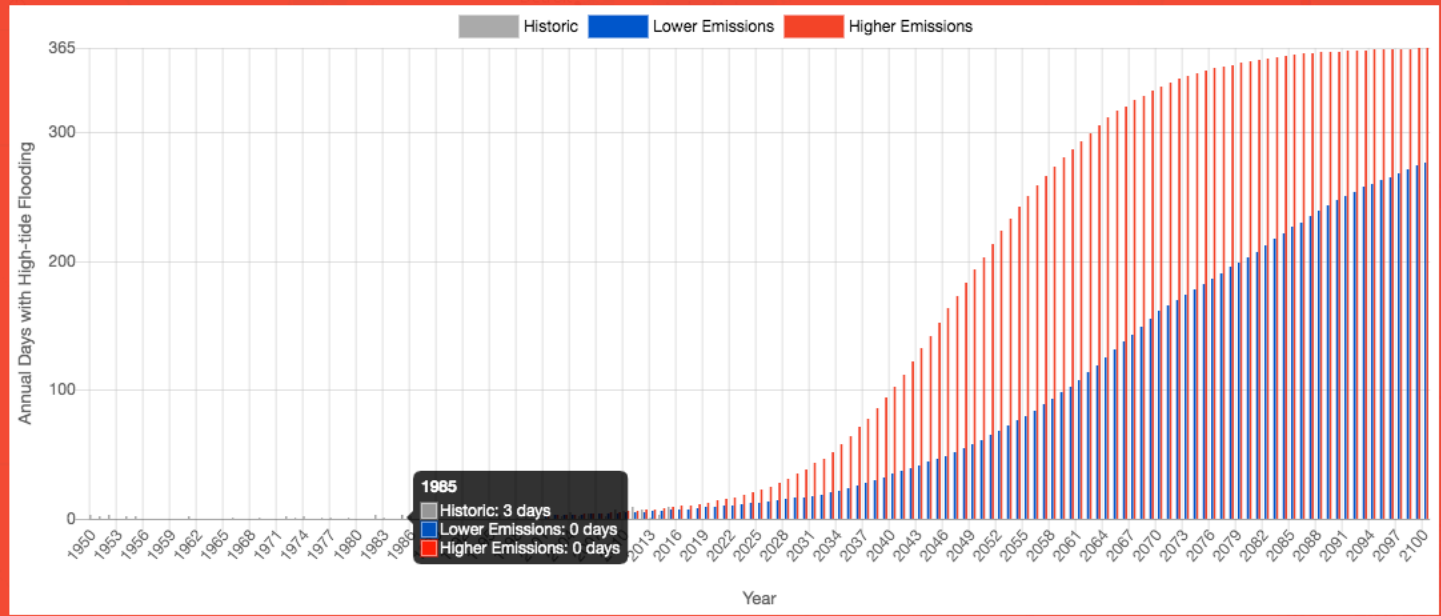
About High-tide Flooding

Tidal Station

Name: Baltimore, MD

Station ID: 8574680

Local threshold: 0.52m over MHHW

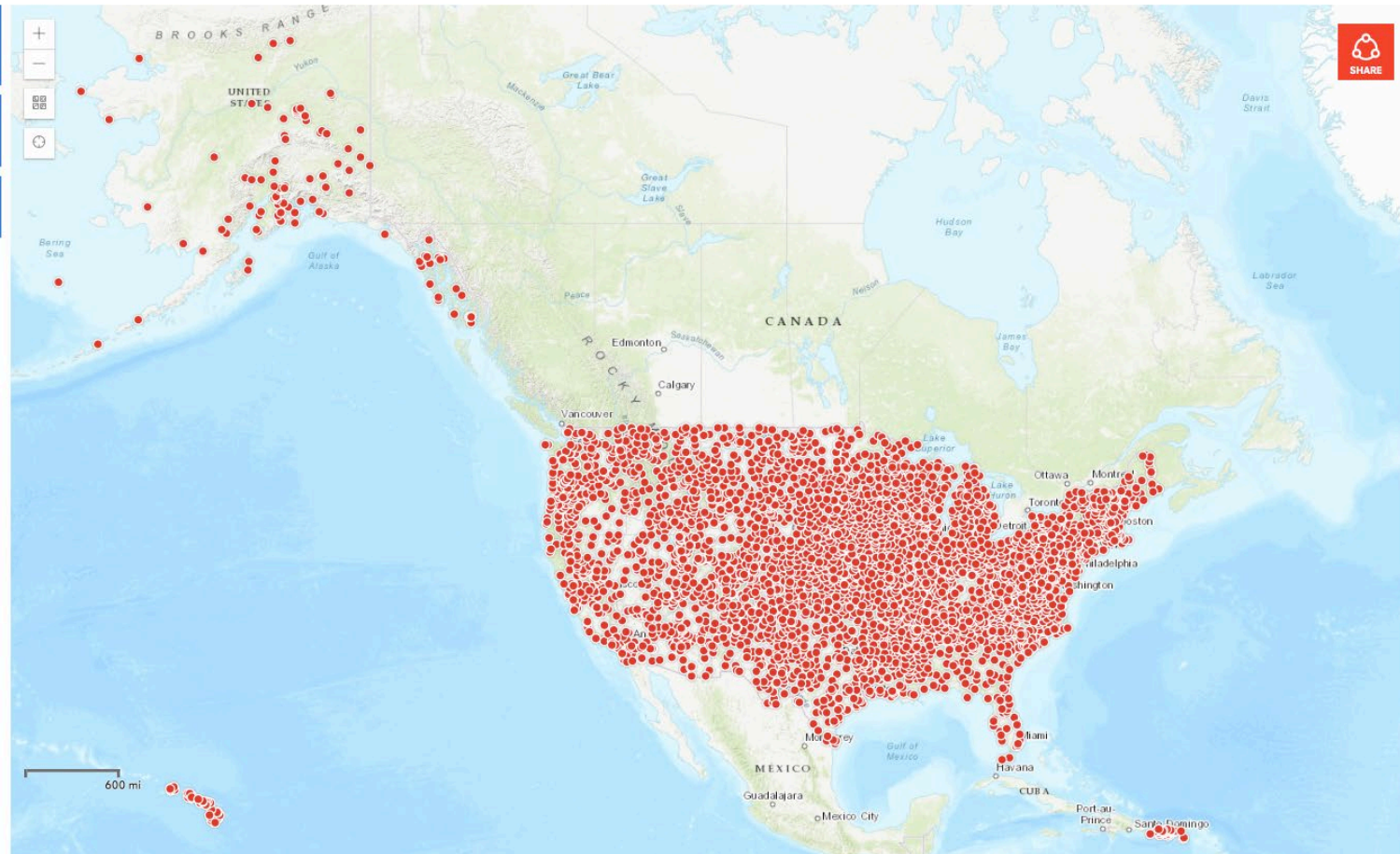


Place your cursor over the annual bars on this graph for details. Gray bars from 1950 to 2016 show observed annual counts of high-tide flooding. Red and blue bars show the average number of high-tide flooding events projected for future years under two scenarios. Data from NOAA Technical Report NOS CO-OPS 086 - Patterns and Projections of High-tide Flooding.

Zoom to location

Thresholds

About Thresholds



✕ Baltimore, MD



MARYLAND SCIENCE CENTER - (USW00093784)



Downloads



Station id: USW00093784 Station: MARYLAND SCIENCE CENTER



Chart

Map

Minimum Temperature



Threshold °F



78



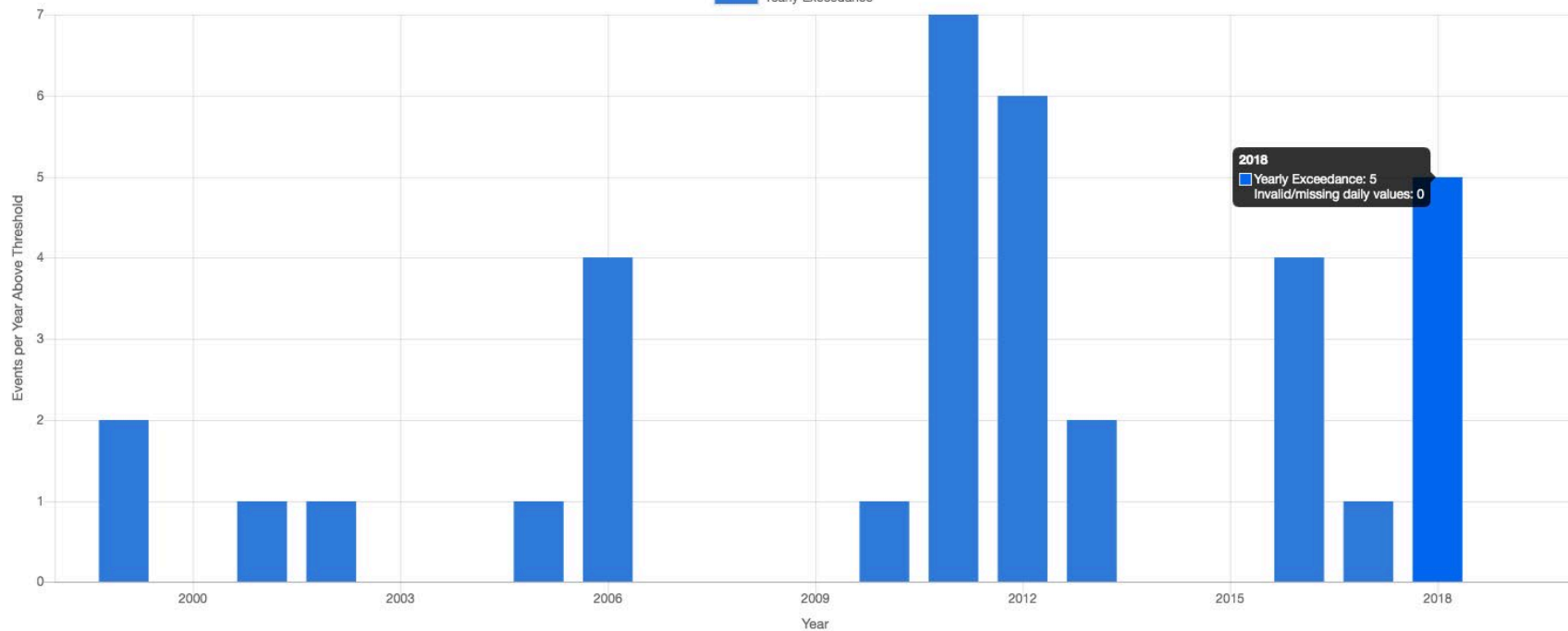
Window in days



3



Yearly Exceedance



More about the graph ?





✕ Baltimore, MD



MARYLAND SCIENCE CENTER - (USW00093784)



Downloads

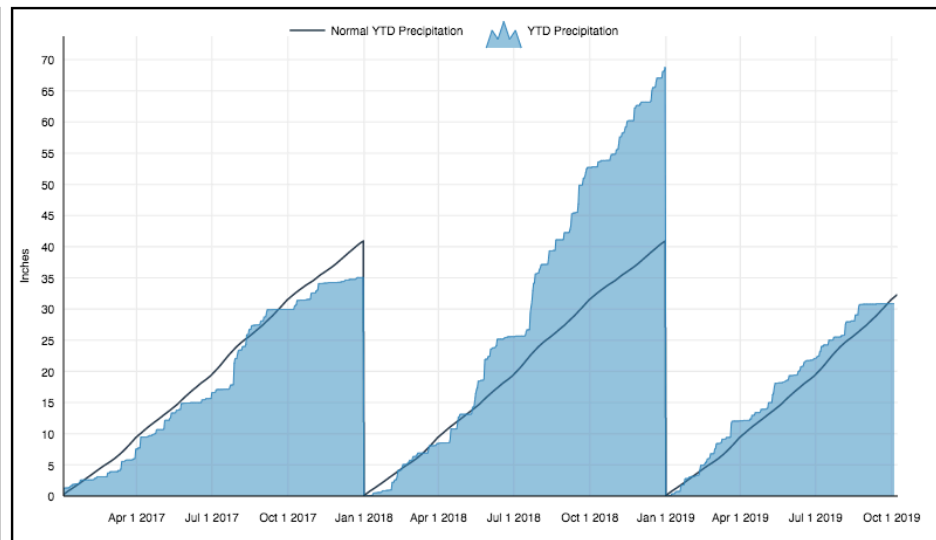
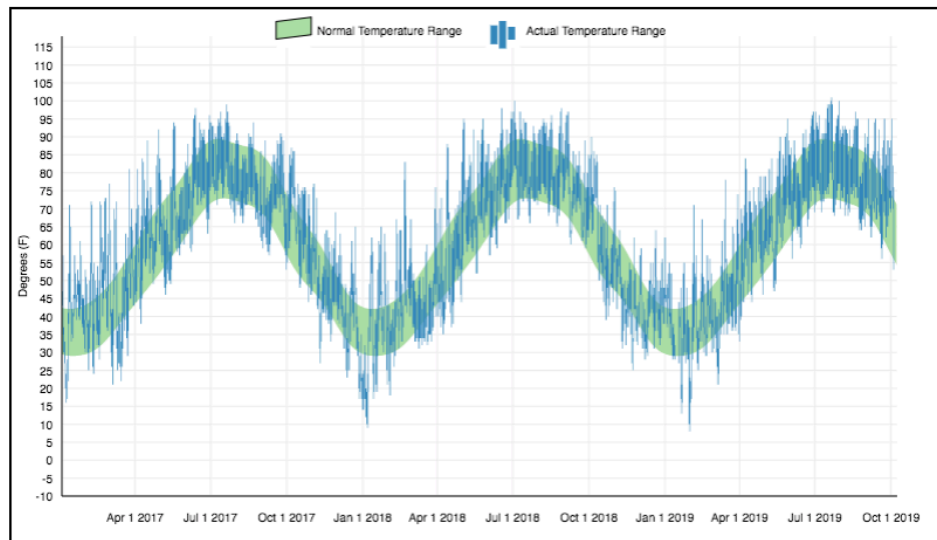


Select a Station



Chart

Map



More about the graphs ?



Home



National Climate Maps



Local Climate Charts



Local Climate Maps



Historical Weather Data



Historical Thresholds



High-tide Flooding

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Questions?