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# Climate Change Projections & Impacts INDIAN RIVER COUNTY, FLORIDA



## LIKELY CLIMATE STRESSORS FOR INDIAN RIVER COUNTY



Higher average temperatures and more extreme heat



Shifts in rainfall seasonality and drier summer conditions



Increased intensity of hurricanes and extreme precipitation events



Sea level rise and more frequent high-tide flooding




Increased inland and coastal flooding



# Climate Explorer Projections



 About this site



## The Climate Explorer

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

**New!**

Climate projection charts are now available for boroughs in Alaska.

To get started, enter a county, city, or zip code



or choose from the following suggested cities:

New York City, NY

Los Angeles, CA

Chicago, IL

Phoenix, AZ

Houston, TX

Anchorage, AK



# Climate Explorer Projections



The Climate Explorer

About this site

Indian River County, FL

Select one of the following for Indian River County, FL

**Climate Maps**  
Compare past and projected future conditions in your county.

**Climate Charts**  
Check past and projected values for climate variables.

**High-Tide Flooding**  
View the number of high-tide floods in the past and projected for the future.

**Historical Weather Data**  
Compare daily weather at local observing stations to long-term climate.

**Historical Thresholds**  
Check how often temperature or precipitation has exceeded user-defined values.

**Ready to plan for resilience?**  
Resources from our partners can help you identify what matters to your community and evaluate how climate change could affect it:

- Check your exposure to extreme events such as wildfires and flooding
- Identify social vulnerabilities across urban areas
- Get step-by-step guidance for completing a vulnerability assessment or crafting an action plan.

Explore planning tools →

Region Based

Station Based

Cards Home

Take action

Climate Charts

Climate Maps

Historical Weather Data

Historical Thresholds

High-Tide Flooding



# Climate Explorer Projections



The Climate Explorer

About the data



Indian River County, FL

Stations

- Average Daily Maximum Temp (°F)

Average Daily Maximum Temperature (°F)

Graph

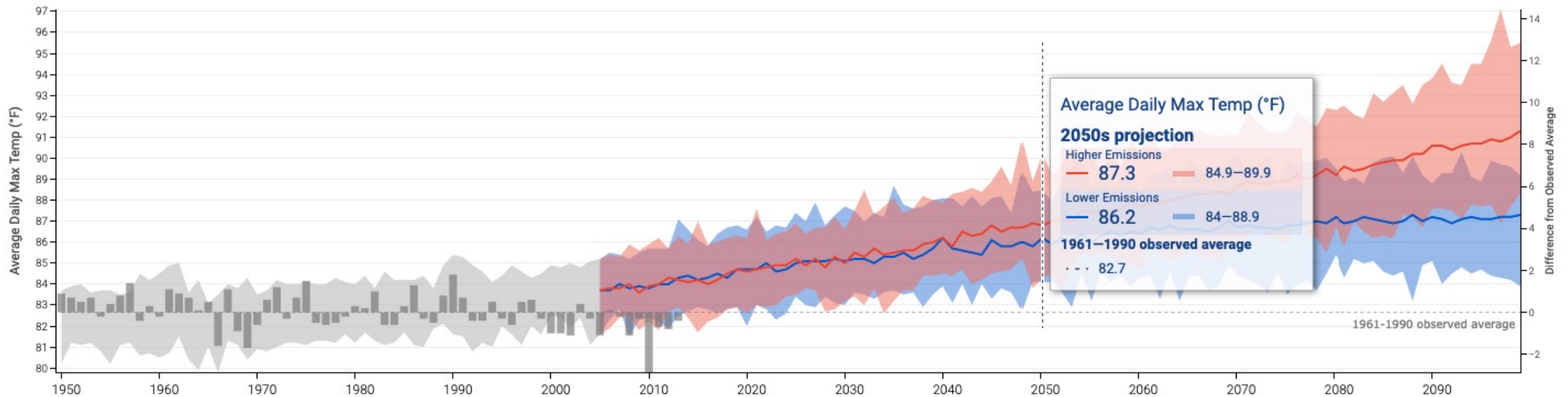
Map

Annual

Monthly

Downloads

About



Observations

Modeled History

Lower Emissions

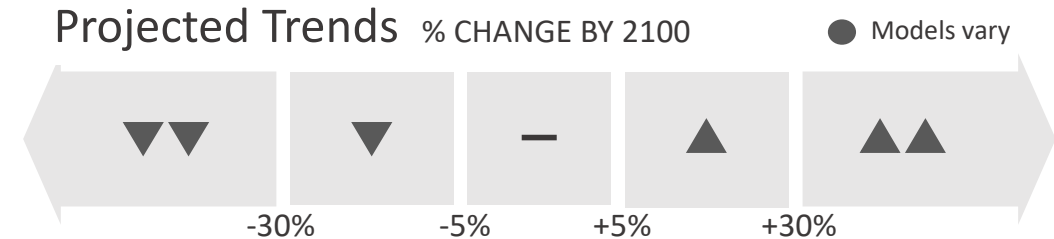
Higher Emissions

# Important Considerations



## FACTORS TO CONSIDER:

- Trend direction ▲ ▼ –
- Magnitude of change
- Shifts in timing/variability



# Air Temperature



## HIGHER AVERAGE TEMPERATURES

- ▲ Minimum temperature  
+3.6°F by 2050; +7.7 °F by 2100 (*historical: 62.5°F*)
- ▲ Maximum temperature  
+3.8°F by 2050; +8.0°F by 2100 (*historical: 82.7°F*)

## MORE EXTREME HEAT

- ▲ ▲ Days over 95°F  
48.8 days by 2050; 138.5 days by 2100  
(*historical: 3.3 days*)

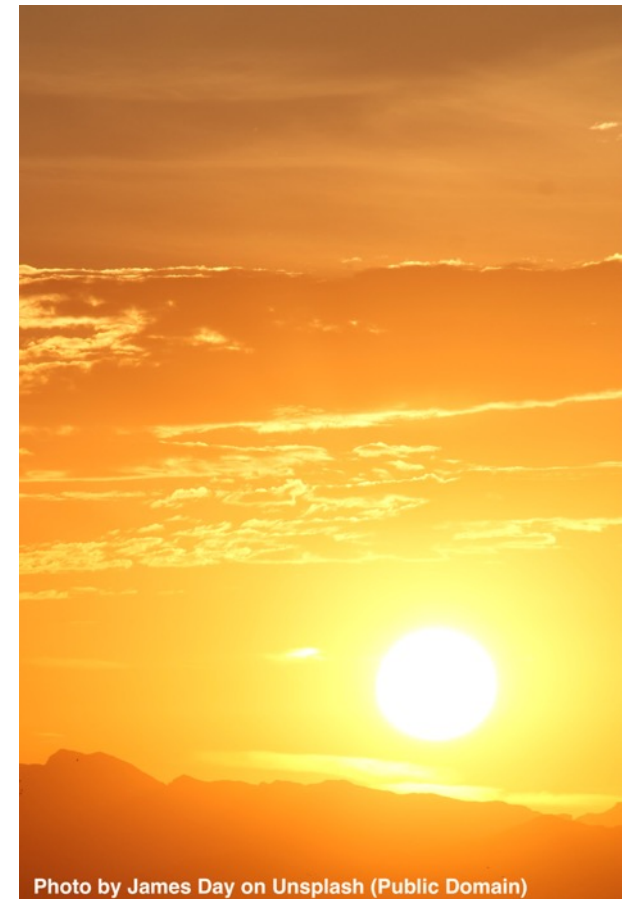
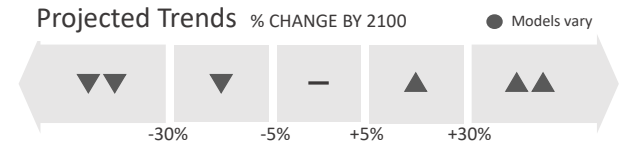


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# Precipitation



## SHIFTS IN AMOUNT/TIMING OF RAINFALL

- Annual precipitation

+1.8% by 2050; -3.5% by 2100 (*historical: 51.2 in*)

- ▲ ▼ Changes in seasonality

Decreases in summer (–21.1% by 2100) and spring rainfall (–8.4%)

Increases in fall rainfall (+8.9%)

No change in winter rain

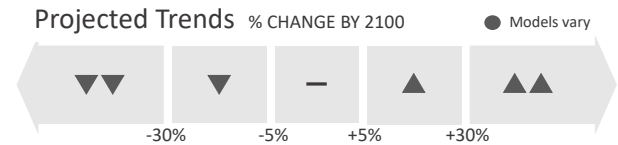


Photo by Sergey Subbotin (Public Domain)

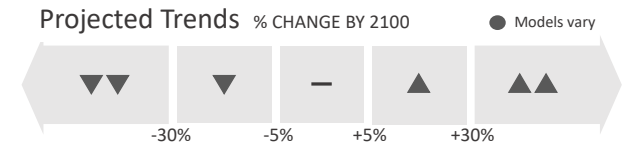


# Extreme Precipitation, Storms, & Flooding



## MORE EXTREME PRECIPITATION

- ▲ ▲ Precipitation total for 20-year storm event  
+21% in the Southeast US by 2100
- ▲ ▲ Days with at least 2 inches of rain in 24 hours  
+0% by 2050; +8% by 2100 (*historical: 1.2 days per year*)

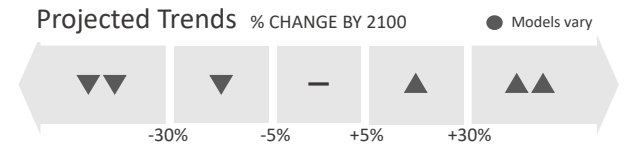


## INCREASED HURRICANE IMPACTS

- ▲ +8% per decade in global hurricane intensity from 1979–2017
- ▲ -16% rate of forward motion for Atlantic hurricanes from 1949–2016



# Sea Level Rise



## HIGHER SEA LEVELS

▲ ▲ 1.4 ft (range of likely possibilities: 0.7–1.8 ft) by 2040

3.2 ft (range 1.2–4.4 ft) by 2070

7.4 ft (range 1.9–11.2 ft) by 2120

Extreme scenario: Up to 14.3 ft possible

*(Compared to sea levels in the year 2000)*



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# High-Tide Flooding



## HIGH-TIDE FLOODING

- ▲ ▲ 97 days per year (range of likely possibilities: 17–176 days) by 2040
- 364 days per year (range 66–365 days) by 2070
- 365 days per year (range 148–365 days) by 2100

*(Historical: 2.1 days per year with tide 1.8 feet over MHHW)*

**NEXT UP: How will these changes affect Indian River County?**

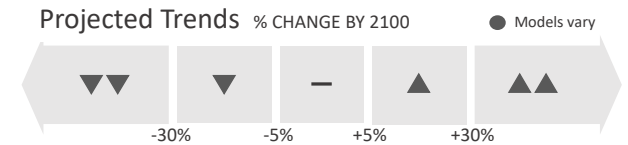


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## Utilities

- Damage to critical infrastructure (e.g., wastewater treatment plants) and reduced pump station capacity or failure during flood events
- Increased energy demand during heat waves, potentially straining electrical grids and increasing costs for users
- Increased concentration of contaminants and increased risk of algal blooms in water sources during warm, dry and/or drought periods, reducing effectiveness of water treatment



## Transportation

- Damage to transportation infrastructure (e.g., roads, bridges, culverts) following storms, floods, and extreme heat
- Road blockages and loss of access, impacting evacuation routes, emergency access, and other critical travel
- Slower travel or road closures due to melting asphalt, overheating engines, and other heat-related impacts
- Loss of electricity due to flooding or heat waves, limiting use of electric vehicles and impacting public transit



## Conservation Lands & Parks

- Changes in plant survival due to more frequent coastal inundation and/or saltwater intrusion into freshwater habitats
- Increased heat stress for people using parks and recreation areas as well as changes in patterns of recreational use
- Decreased accessibility/use and increased maintenance costs of park lands due to flooding
- Altered/reduced ecosystem functioning on conservation lands due to changes in hydrology and plant species composition

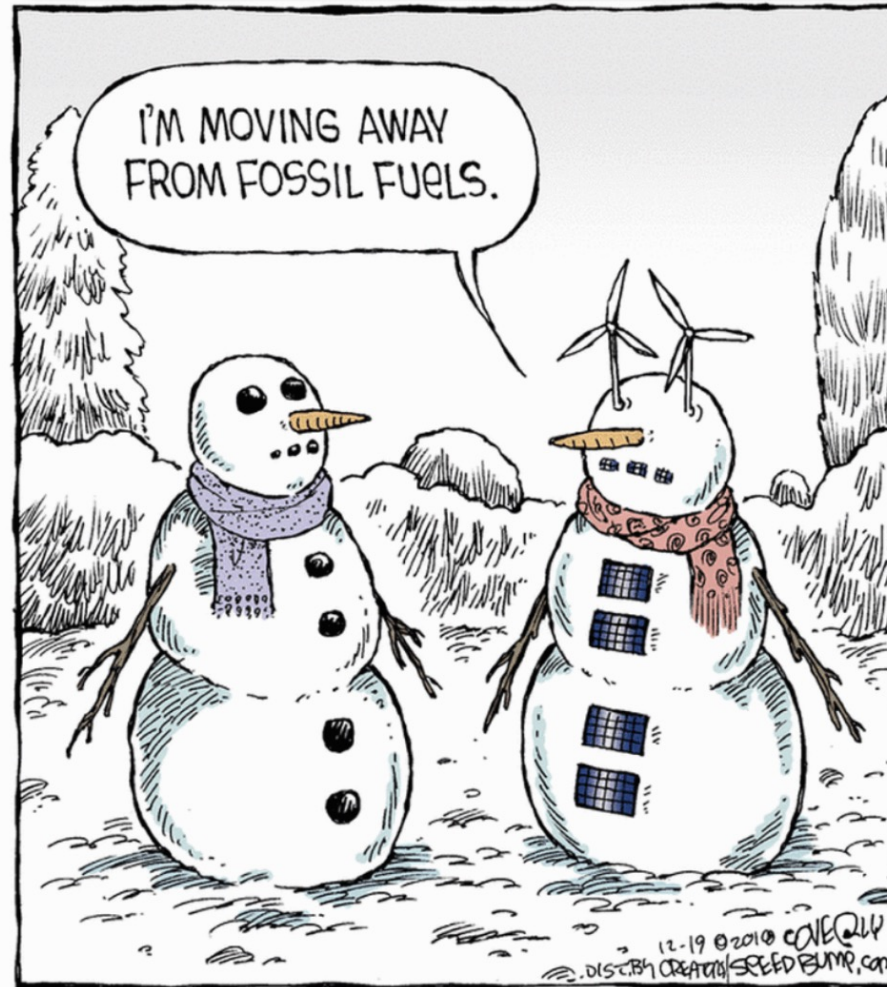


# Important Tools and Resources



- Climate Explorer (<https://crt-climate-explorer.nemac.org/>)
- NOAA Sea Level Rise Viewer (<https://coast.noaa.gov/slr/>)
- Surging Seas Risk Zone Map (<https://ss2.climatecentral.org/>)
- Southeast Florida Regional Climate Change Compact: 2019 Compact Unified Sea Level Rise Projection.  
([https://southeastfloridacclimatecompact.org/wp-content/uploads/2020/04/Sea-Level-Rise-Projection-Guidance-Report\\_FINAL\\_02212020.pdf](https://southeastfloridacclimatecompact.org/wp-content/uploads/2020/04/Sea-Level-Rise-Projection-Guidance-Report_FINAL_02212020.pdf))
- Southeast Chapter of the Fourth National Climate Change Assessment  
(<https://nca2018.globalchange.gov/chapter/19/>)
- Climate Adaptation Knowledge Exchange ([www.cakex.org](http://www.cakex.org))
- Climate Resilience Toolkit (<https://toolkit.climate.gov/>)

# Questions?



Next step:  
*Group discussion of  
climate impacts!*



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