# Farmstand Business Curriculum

→ Lesson 7: Food, Farming, and Climate Change

GROW NYC

# Warm-up

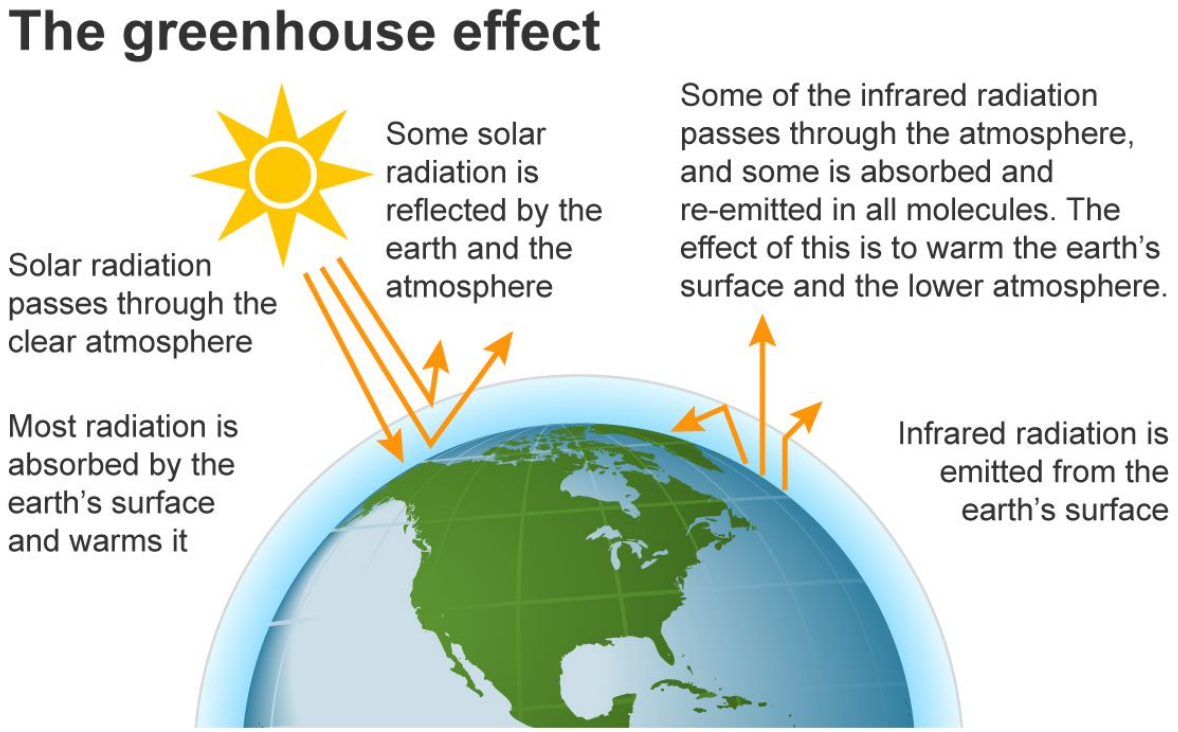
What is one word that comes to mind when you hear the term ‘climate change’?

# Lesson Outline

- What is climate change?
- How will climate change impact New York City?
- How will climate change impact our food system?

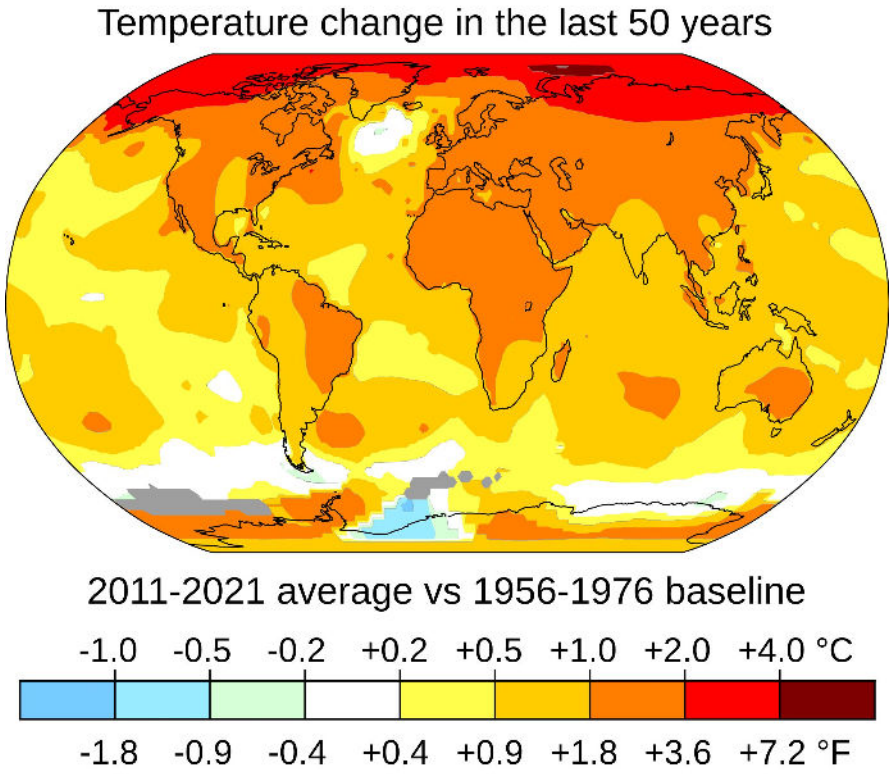
# What is climate change?

- Greenhouse gas (GHG) emissions lead to increased global temperatures
- Most significant GHG is carbon dioxide (CO2) - from burning fossil fuels such as coal



# What is climate change?

- Shifts in atmospheric conditions, temperature, water systems, and weather systems
- Impacts include increased -
  - Natural disasters: Droughts, floods, cyclones, wildfires
  - Land damage
  - Heat waves and hot days
  - Climate migration
  - Political instability
  - Global health issues



# Who does climate change impact?

- Climate change disproportionately impacts low-income communities, Black, Indigenous, and People of Color (BIPOC) communities, seniors, and children
- As climate change impacts intensify, those who already experience systemic oppression will be further burdened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# How will climate change impact our food system?

“The climate crisis is a crisis of natural disasters, of floods and storms and heat waves. But it also directly leads to a food security crisis. It makes it much harder to feed people.”
- U.S. Representative to the United Nations Linda Thomas-Greenfield

# Activity One

For the following scenarios, consider these three questions:

- How do you think your climate scenario will affect growing food in NYC?
- How do you think your climate scenario will impact food access across NYC?
- Are there certain parts of NYC that will be affected more? Why do you think that is?

# **Scenario One:** Extreme Heat

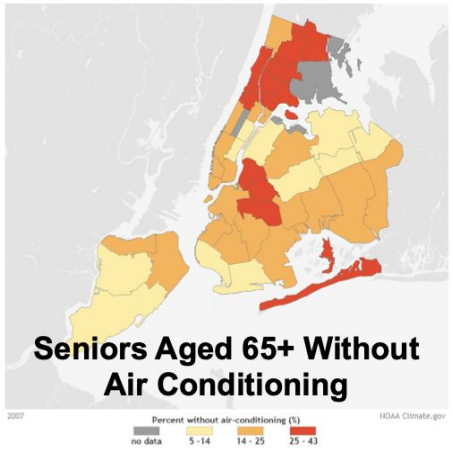
* Middle range (25th to 75th percentile) of model-based projections. Source: NPCC, 2015

**Mean annual temperatures to increase**

- 4.1 to 5.7°F* by the 2050s
- 5.3 to 8.8°F* by the 2080s

**Heat waves:** Triple by 2080s from 2 to 6 per year

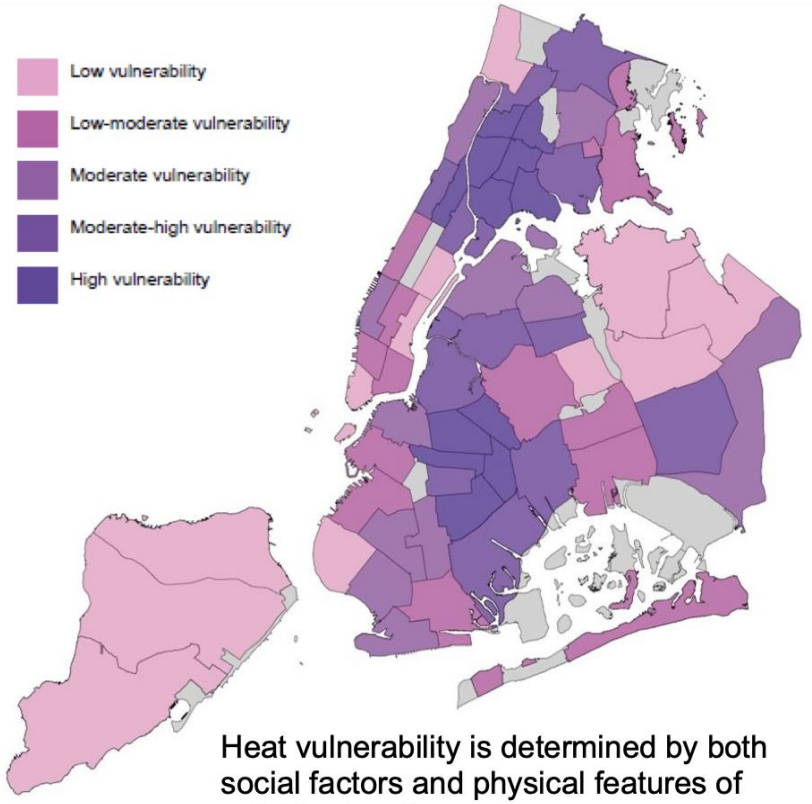
**Hot days above 90º:** Triple by 2050s from 18 to 57 days




Source: NOAA Climate

**Heat Vulnerability in NYC**

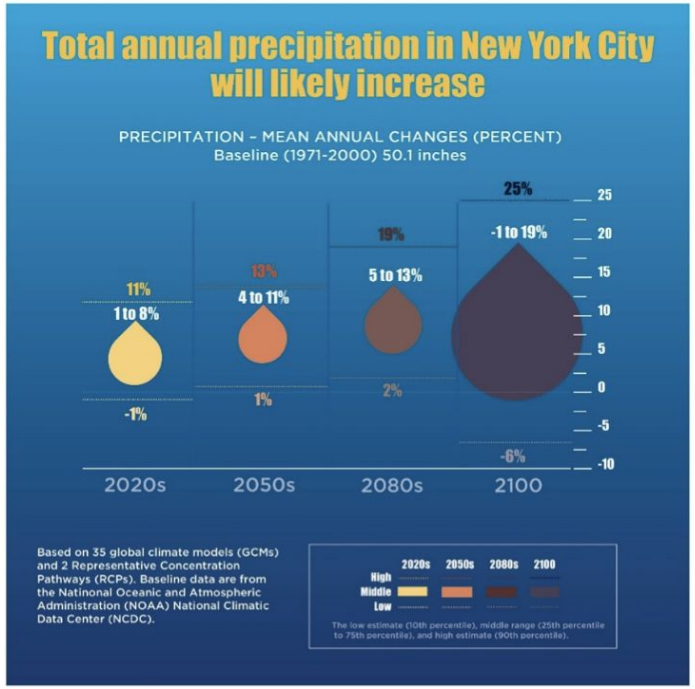
Depicted in the darker purple are the portions of NYC's population that are most vulnerable to high temperatures, by neighborhood.




Heat vulnerability is determined by both social factors and physical features of neighborhoods.

Source: OneNYC

# **Scenario Two:** Precipitation Increase




Warmer temperatures cause more moisture in the air, which leads to significant shifts in precipitation.

**Mean annual precipitation** is projected to **increase**

- 4 to 11 percent* by the 2050s
- 5 to 13 percent* by the 2080s

* Middle range (25th to 75th percentile) of model-based projections.

Source: NPCC, 2015

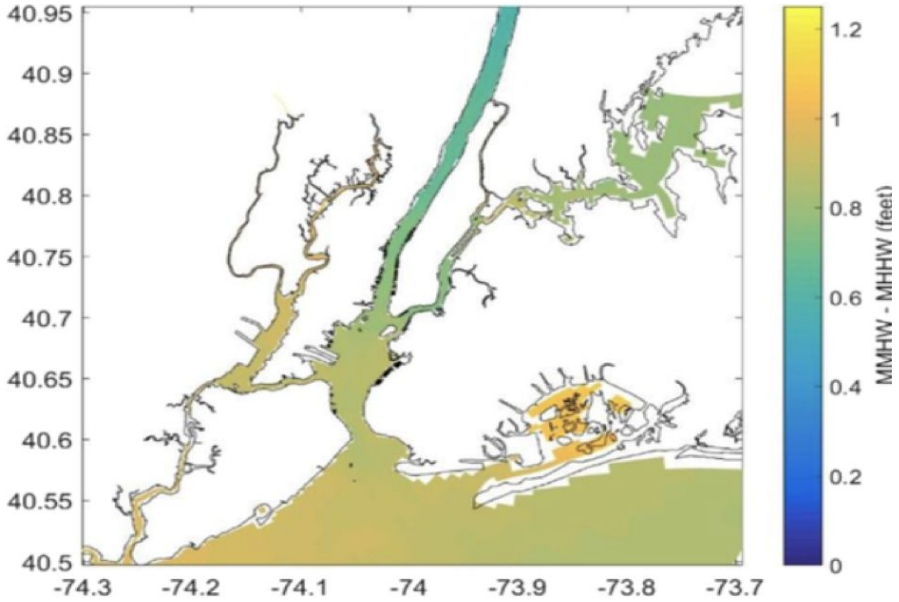
# **Scenario Three:** Sea Level Rise

**Sea level** is expected to **rise**

- 11 to 21 inches* by the 2050s
- 18 to 39 inches* by the 2080s
- 6 feet by 2100 (high estimate)

* Middle range (25th to 75th percentile) of model-based projections.

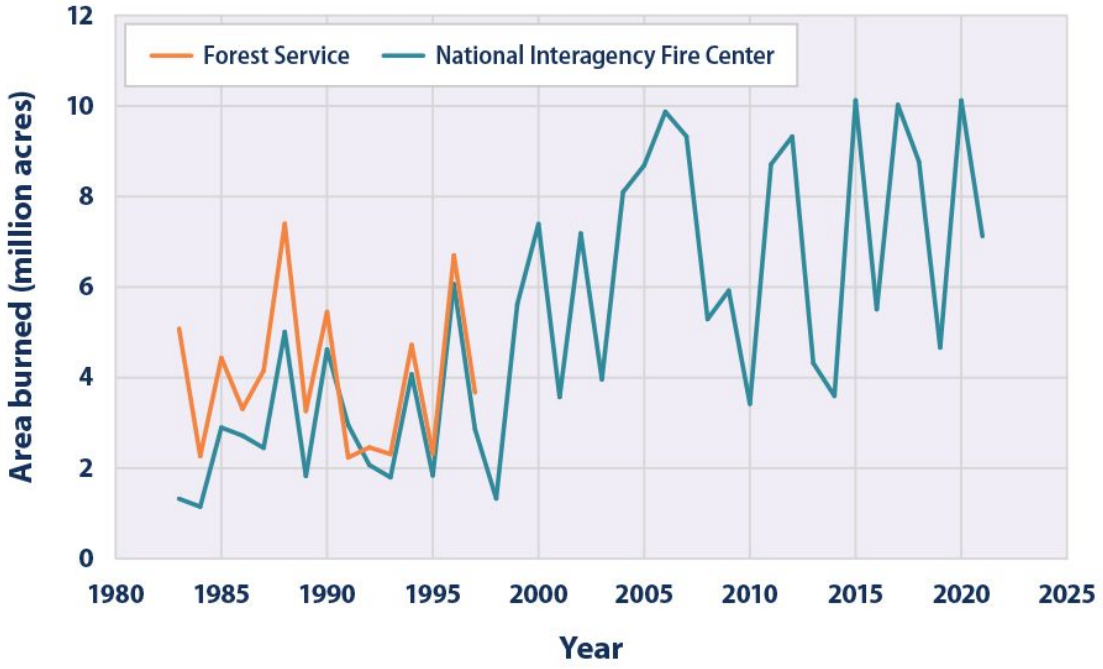

Projected sea level changes alone would **increase the frequency and intensity of coastal flooding** (absent any change in storms themselves)

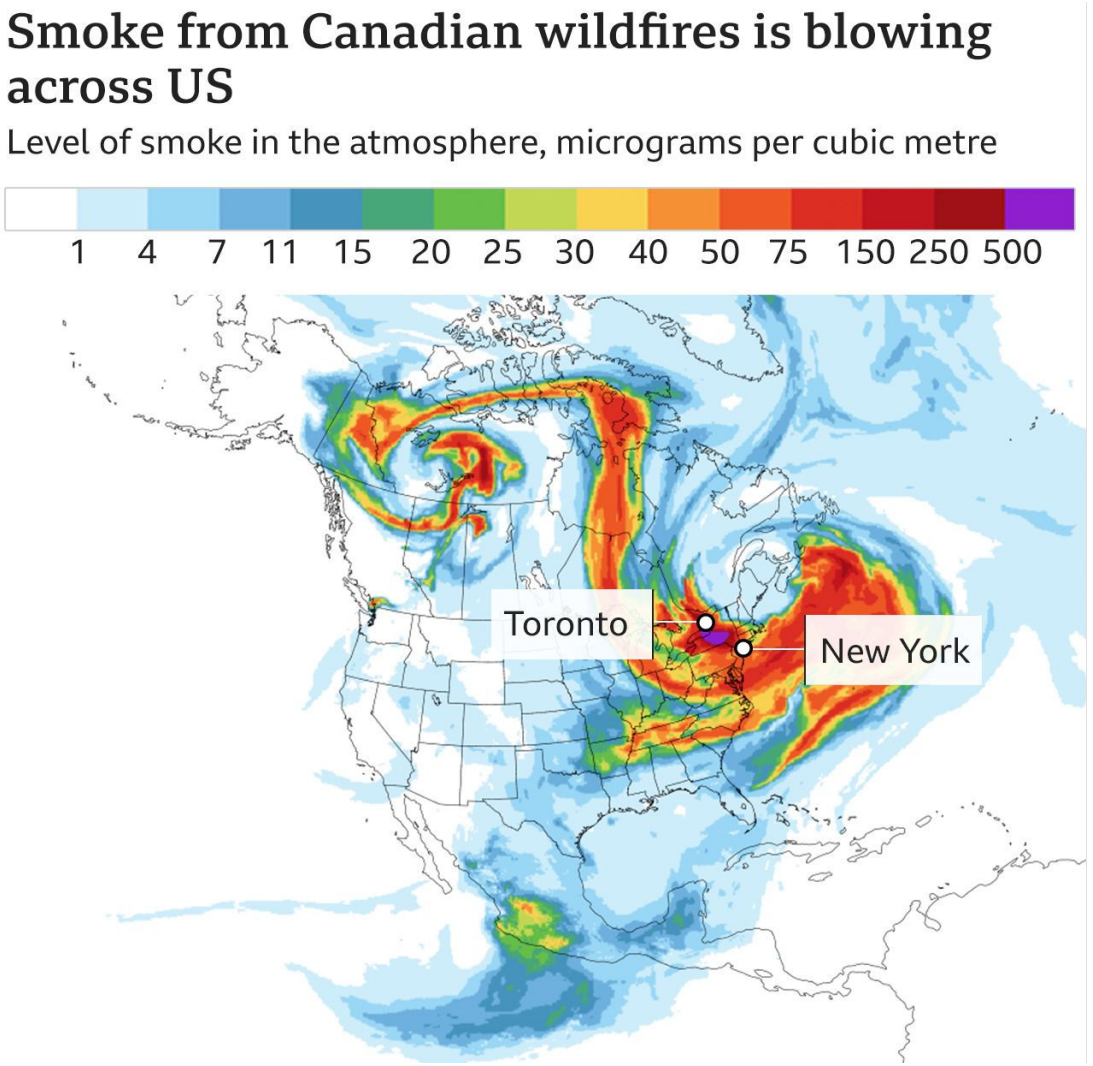



*Map showing the difference between water levels for 90th percentile SLR in 2100*

Source: NPCC, 2019

# **Scenario Four:** Wildfires and Air Quality



# **Activity Two**:
# Responding to Climate Change

# **Share Out:**
## Group One - Seed Keeping

# **Share Out:**
## Group Two - No-till Farming

# **Share Out:**
## Group Three - Rainwater Catchment

# **Share Out:**
## Group Four - Solar Energy

# Share Out:
## Group Five - Native Plants

# **Share Out:**
## Group Six - Permaculture

# Reflection Questions

What climate-conscious practices do we want to incorporate into our farm business plan? Consider what resources are accessible to you and what time/space allows.

# Questions?