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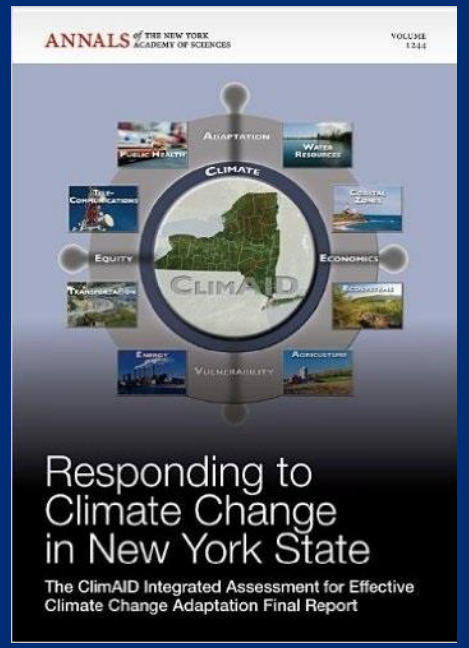
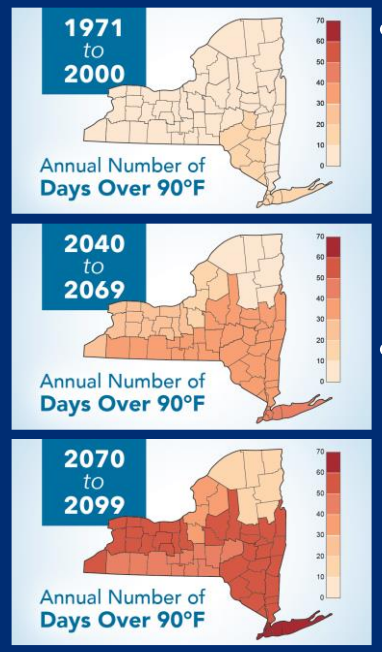
NYSERDA's ClimAID Assessment



Amanda Stevens
Project Manager
Environmental Research Program
NYSERDA
August 15, 2018

NYSERDA's Environmental Research Program

- Increase the understanding and awareness of the environmental and public health impacts of energy choices and emerging energy options
- Provide scientific foundation for creating effective and equitable energy-related environmental policies and resource management practices



- *What are the current and projected impacts of climate change to all sectors across New York State?*
- *How can the risks associated with climate change be cost-effectively managed and minimized?*

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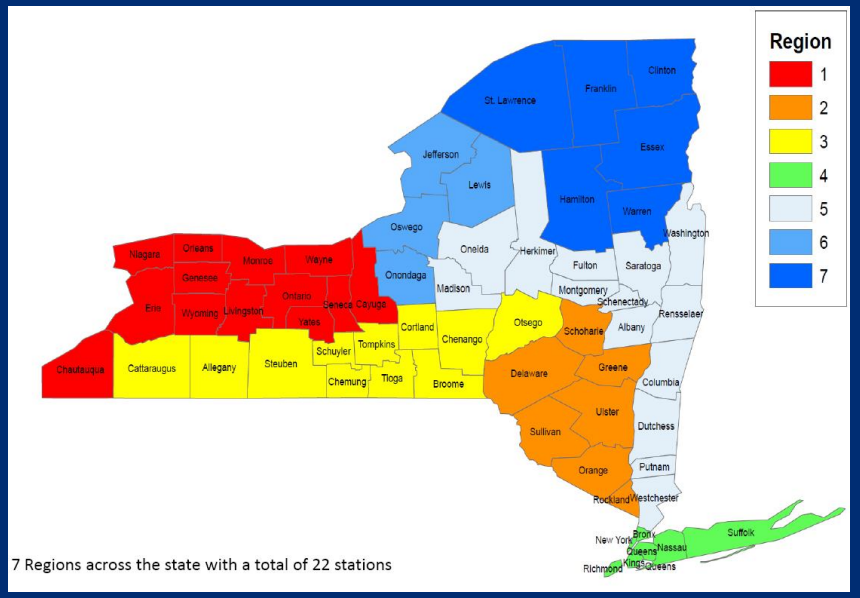
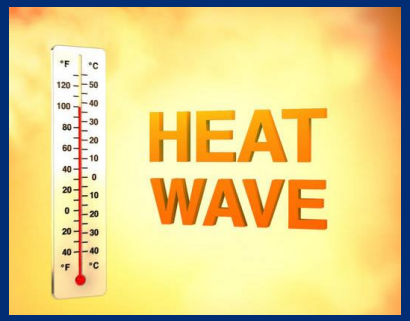
ClimAID Team

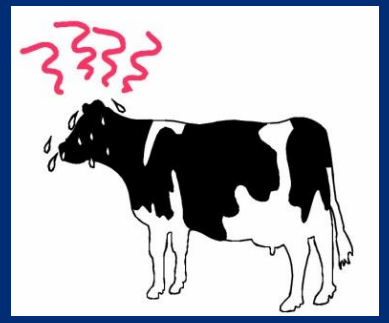
- Dozens of other researchers

Projections – Impacts – Adaptation Strategies

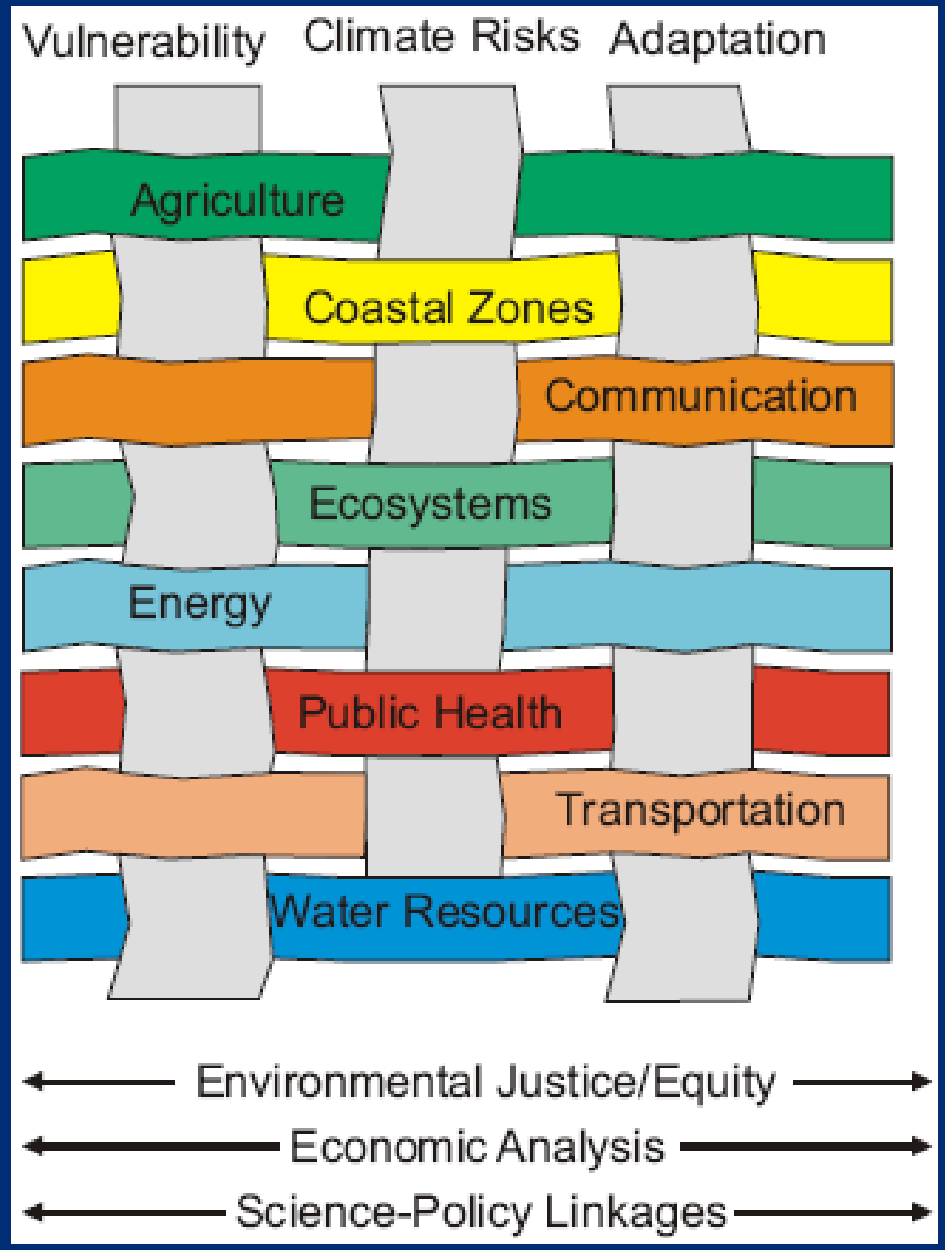
- Warmer temperatures with more heat waves
- More frequent and intense precipitation events—and droughts
- Increased sea level rise and coastal flooding







Structure and Process



Products & Outcomes

www.nyserda.ny.gov/climaid

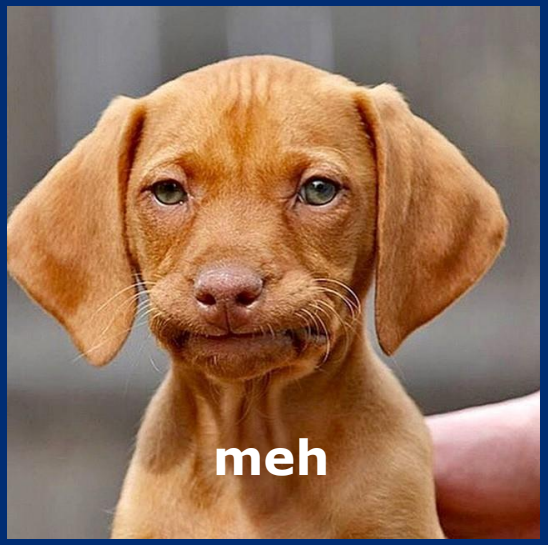
- Final report
  - Published by the NY Academy of Sciences
- Summary document
- Adaptation guidebook

- Official NYS sea level rise projections
- Local-level plans

What worked well

- We had a great team
  - Expert scientists working with stakeholders to understand the issues
- We had time
  - It is difficult to do a good comprehensive assessment with a short turnaround time

What could have been better



- Stakeholder engagement should have included discussion of what they needed to make decisions.
  - Types of information? Formats? Presentation?

- Better outreach to those who could use the information

To the Future: An Updated Assessment

- Respond to current needs
- Science based
- Usable for practitioners and decision makers

Adaptation: Be prepared

By failing to prepare,
you are preparing to fail.

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✉ Amanda.Stevens@nyserda.ny.gov

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Region 6 (Watertown) – Temperature

Baseline (1971-2000) 45.4 °F	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
2020s	+ 1.9 °F	+ 2.3 to 3.4 °F	+ 3.9 °F
2050s	+ 3.7 °F	+ 4.4 to 6.4 °F	+ 7.2 °F
2080s	+ 4.3 °F	+ 5.9 to 10.0 °F	+ 11.8 °F
2100	+ 4.5 °F	+ 6.3 to 11.9 °F	+ 13.9 °F

Region 6 (Watertown) – Precipitation

Baseline (1971-2000) 42.6 inches	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
2020s	0 percent	+ 2 to + 6 percent	+ 8 percent
2050s	+ 2 percent	+ 4 to + 10 percent	+ 13 percent
2080s	+ 3 percent	+ 6 to + 12 percent	+ 15 percent
2100	+ 1 percent	+ 7 to + 20 percent	+ 26 percent

Table 5. Extreme Event Projections (continued)

f. Region 6 – Watertown

2020s	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
Days over 90 °F (3 days)	5	6 to 8	10
# of Heat Waves (0.2 heat waves)	0.6	0.8 to 0.9	1
Duration of Heat Waves (4 days)	3	4 to 4	4
Days below 32 °F (147 days)	116	119 to 126	130
Days over 1" Rainfall (6 days)	6	7 to 8	8
Days over 2" Rainfall (0.8 days)	0.6	0.7 to 1	1

Example tables of projections from 2014 update

Table 4. Sea Level Rise Projections

a. Region 4 – Montauk Point

Baseline (2000-2004) 0 inches	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
2020s	2 in	4 to 8 in	10 in
2050s	8 in	11 to 21 in	30 in
2080s	13 in	18 to 39 in	58 in
2100	15 in	21 to 47 in	72 in

Table 6. Coastal Flood Heights and Return Periods for the Battery, NY (Region 4)

a. 2020s

	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
Annual chance of today's 100-year flood (1 percent)	1.1 percent	1.2 to 1.5 percent	1.6 percent
Flood heights associated with 100-year flood (stillwater+wave heights) (15.0 feet)	15.2 feet	15.3 to 15.7 feet	15.8 feet