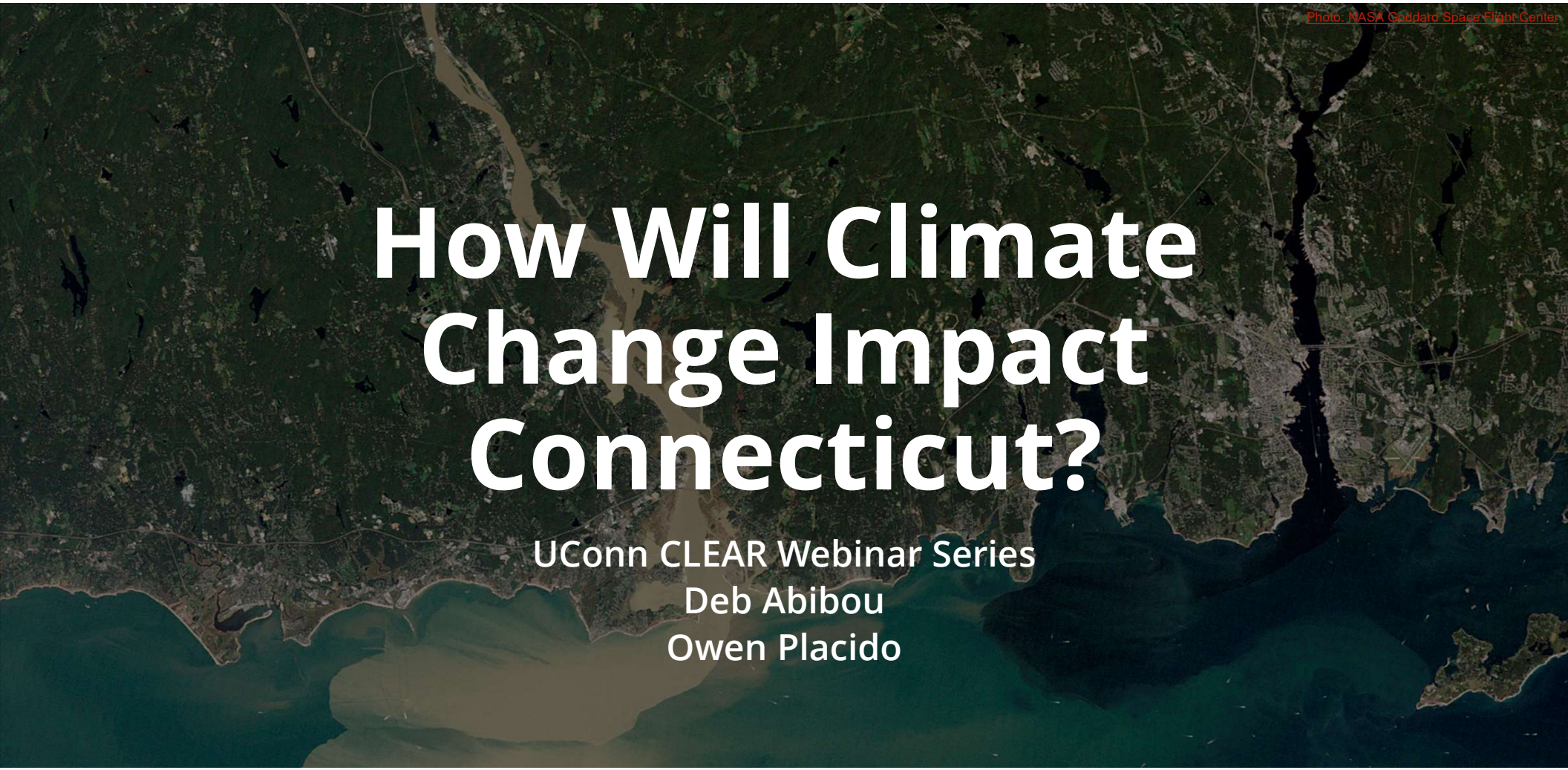

How Will Climate Change Impact Connecticut?

UConn CLEAR Webinar Series

Deb Abibou
Owen Placido

Sea Grant CONNECTICUT

CLEAR Center for Land Use Education & Research

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EXTENSION

Overview

- How do climate projections work?
- What climate impacts are we experiencing today?
- Major climate impacts for Connecticut's Future
- Strategies to adapt and plan
- Tools to get it done: Long Island Sound Resilience Resource Hub

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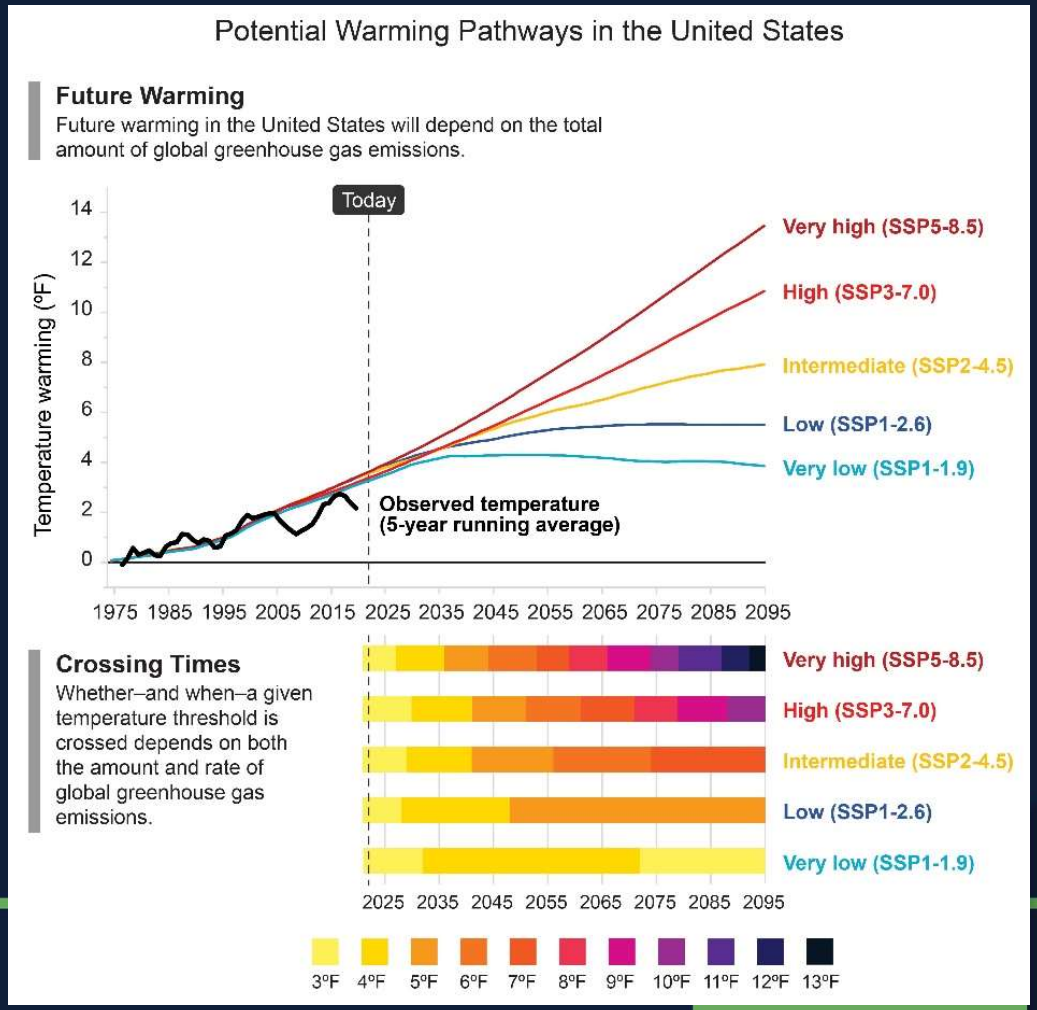
Making Sense of Climate Projections

- Connecticut carbon emissions peaked in 2004
- The 2°C (3.6°F) target requires that we reach net zero emissions by 2050
- The year we cross specific temperature thresholds depends on the amount of carbon emissions released going forward
- The projections that follow are based on possible future global temperature increases



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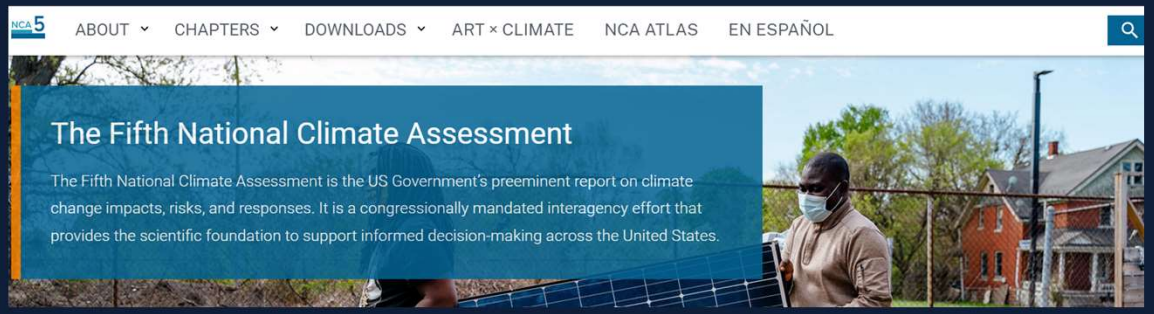
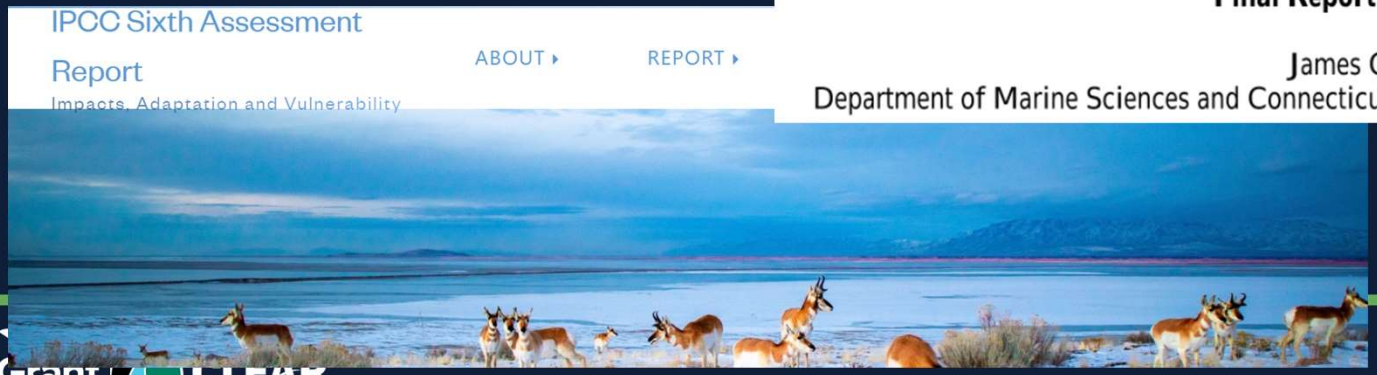
All Those Climate Reports …

- Help us anticipate, plan, and adapt





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Not Just a Future Problem

- What are we experiencing today?
- Frequent extreme precipitation events in 2024
- A “new normal”?

CT 5-month Dec 23-Apr 24	Rainfall	Departure	Percent	Normal
Litchfield	31.80	12.56	165	19.24
Hartford	30.93	11.67	161	19.26
Tolland	30.14	9.84	148	20.30
Windham	32.18	11.86	158	20.32
Fairfield	29.70	10.14	152	19.56
New Haven	32.61	13.28	169	19.33
Middlesex	33.81	13.63	168	20.18
New London	33.22	12.36	159	20.86

ENERGY & ENVIRONMENT

BEST OF 2023: Climate change has hit CT hard this year. Are we ready for more?

by Jan Ellen Spiegel

December 27, 2023 @ 12:00 pm

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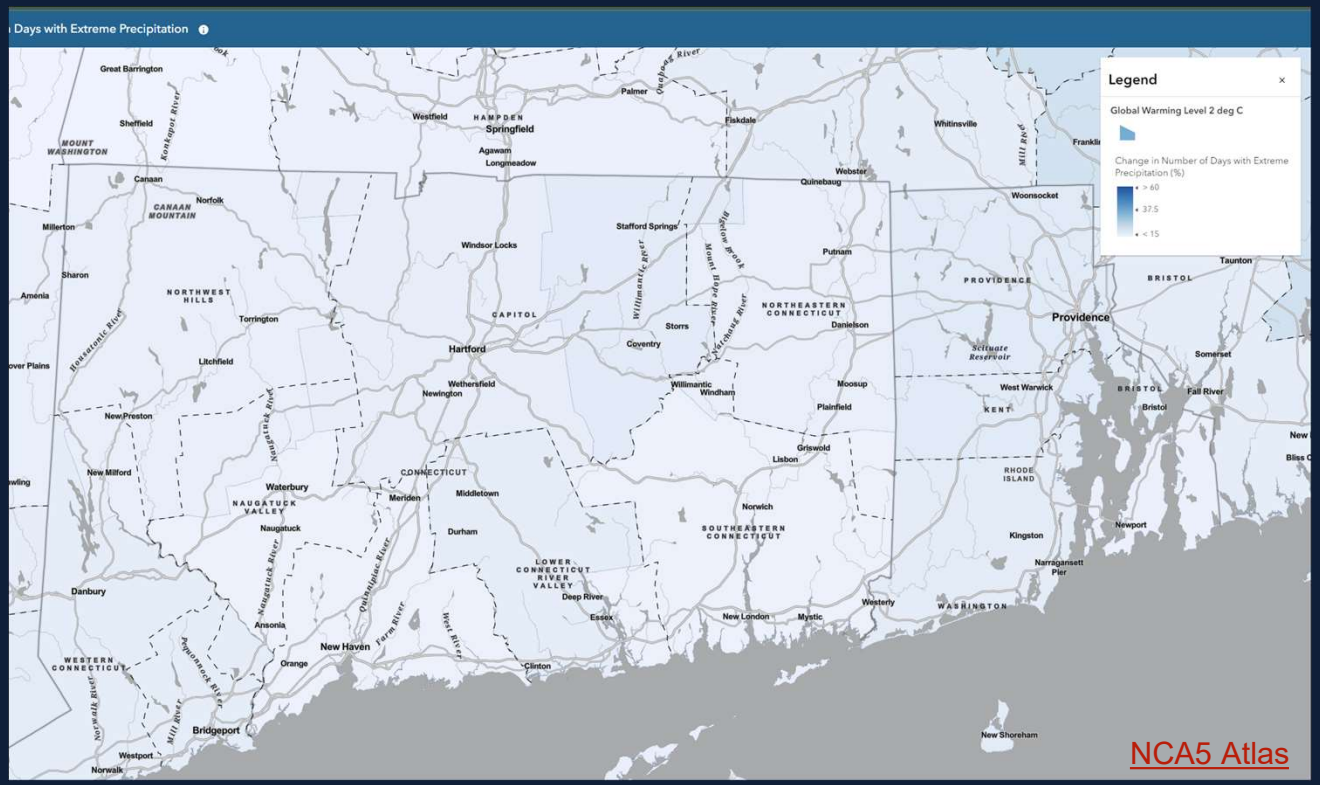
Extreme Precipitation

- We know this extreme precipitation will be a critical impact for Connecticut due to climate change
- Flooding, human health risk, pollution
- Infrastructure not equipped to deal with it
- What might it look like?

Extreme Precipitation

- At 3.6°F warmer:



- 6% more annual precipitation
- 17% more days of extreme precipitation

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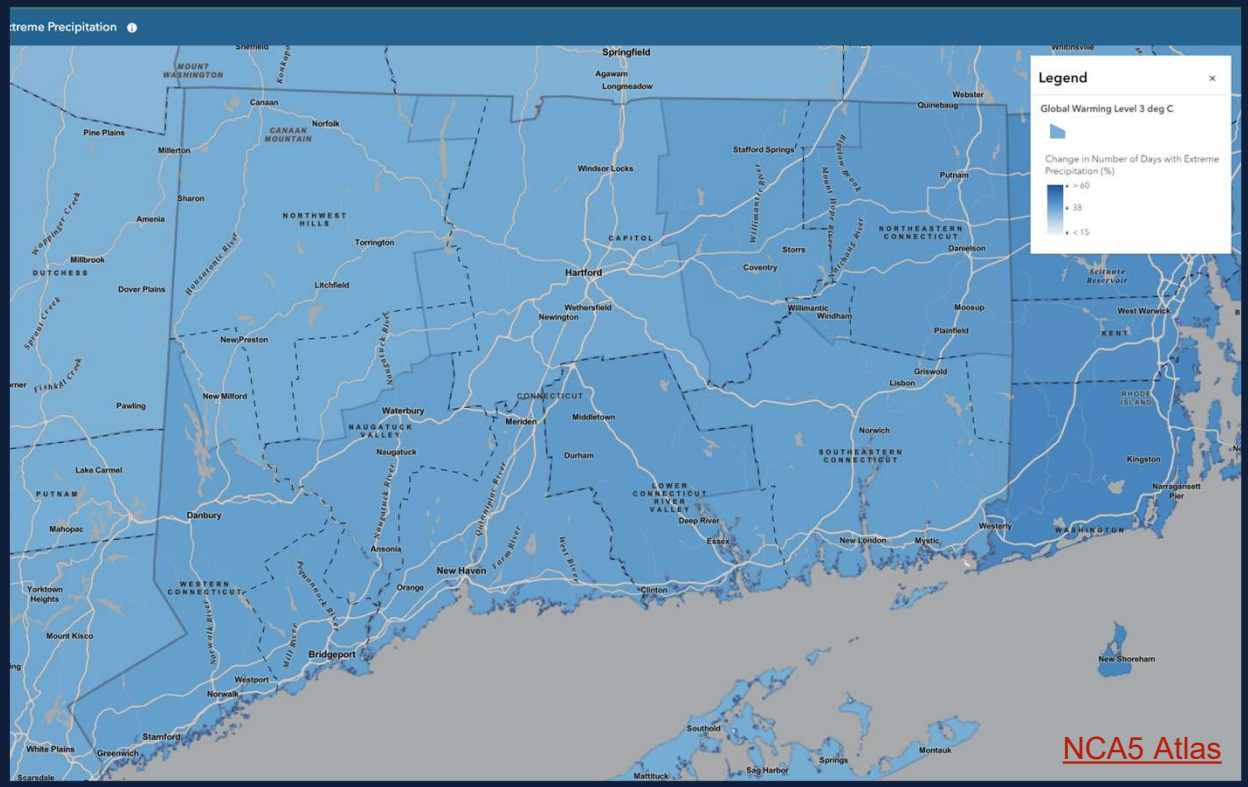
Extreme Precipitation

- At 5.4°F warmer:



- 10% more annual precipitation
- 41% more days of extreme precipitation

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Changing Temperatures

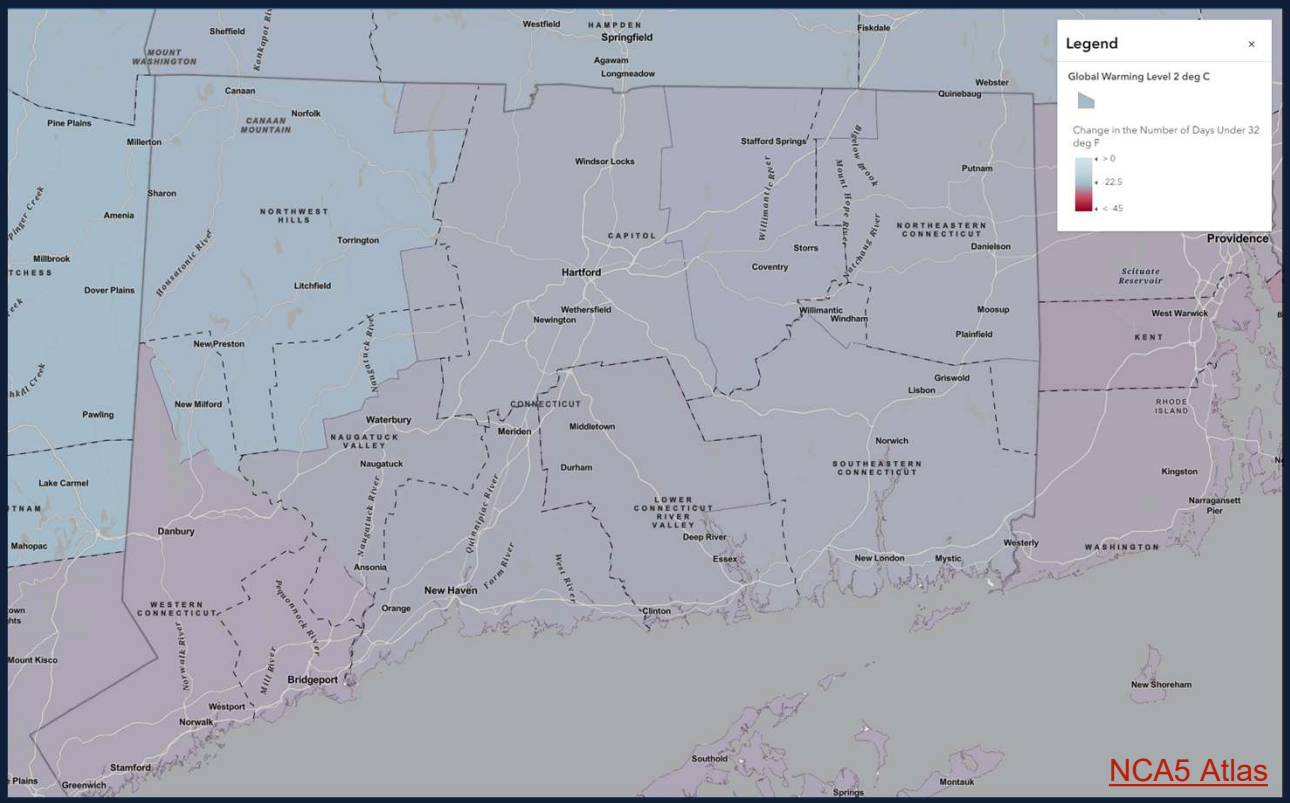
- The classic New England winter …
- Change ecosystems and life in the state
- Shifting plant communities, growing seasons, unpredictable frosts heat waves

- *Average air temp in CT since 1900: 3.5°F higher*

- What the future might look like:

Changing Temperatures

- At 3.6°F warmer:



NCA5 Atlas

- 24 fewer days below freezing
- Less cold in the winter, warmer in the summer

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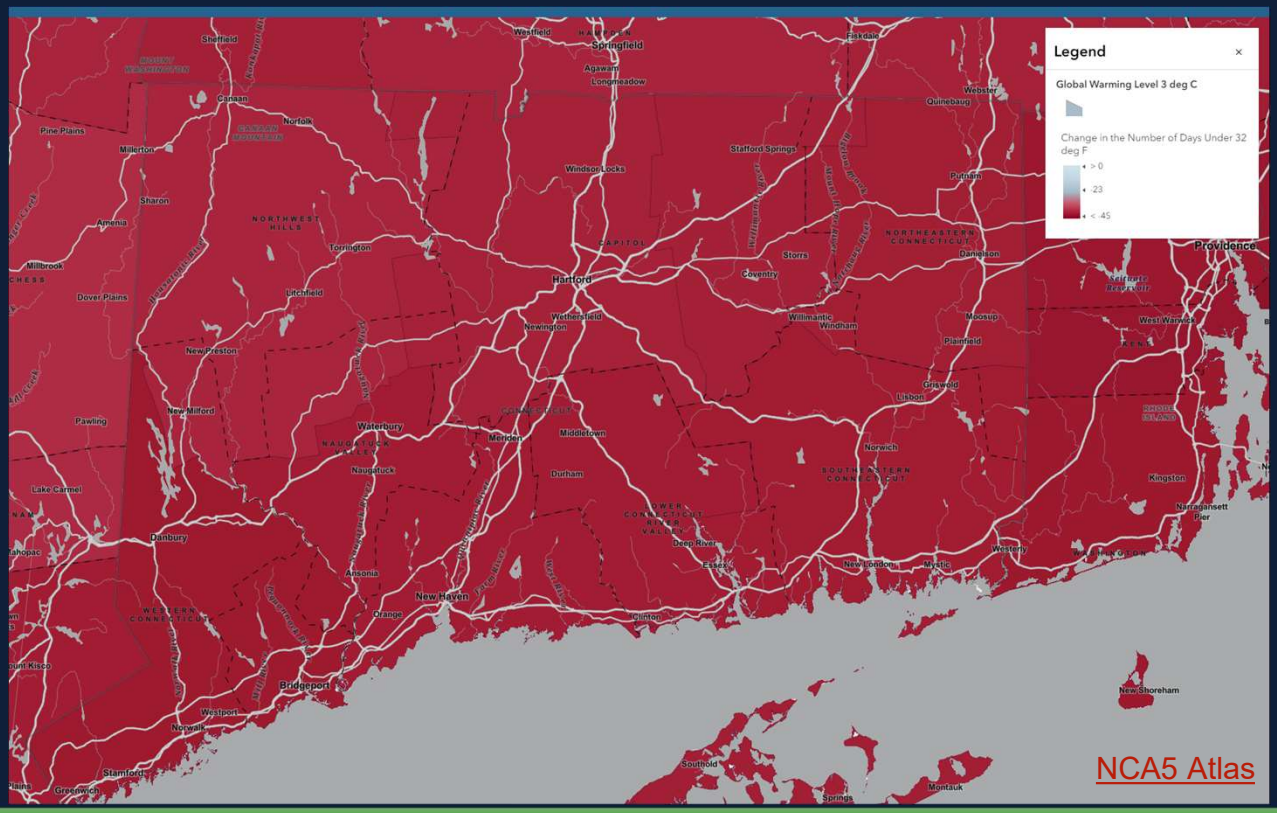
Changing Temperatures

- At 5.4°F warmer:



- 40 fewer days below freezing
- Rising summer temperatures
- Up to 9 more days of extreme heat

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Coastal Issues

- The Connecticut Coast has long been in flux
- Sea level has been rising since about the 1970's
- Erosion, ecosystem loss, coastal flooding endangers people and property

Photo: Nancy Balcom

- Coastal communities threatened by sea level rise and storm
- "20 inches by 2050"

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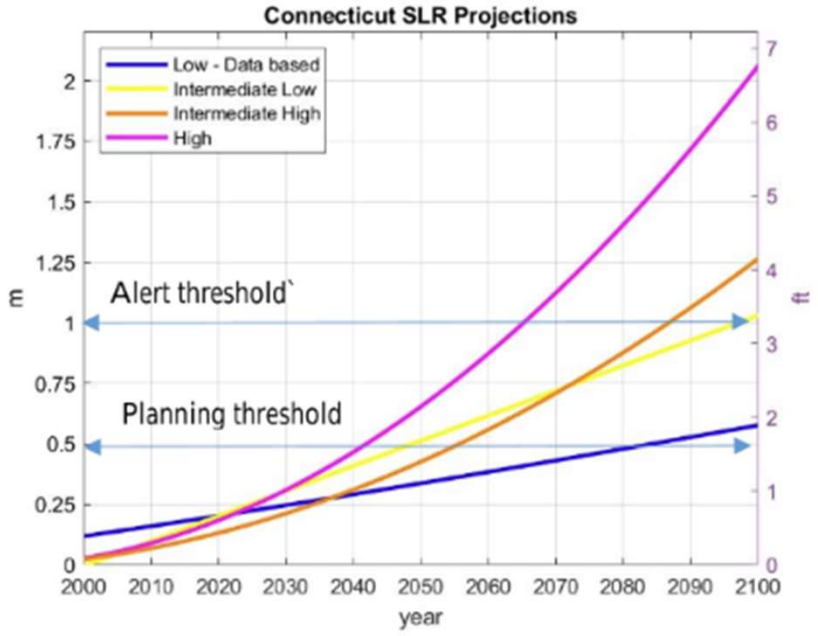
Coastal Issues

- "20 inches by 2050"
- Population at risk of direct inundation: 7,000
- *Storm surge + sea level rise*
- Homes, vulnerable communities, critical infrastructure, salt marshes



Sea level rise projections for Connecticut based on local tide gage observations (blue), the IPCC (2013) RPC 4.5 model simulations near Long Island Sound (yellow line), the semi-empirical models (orange line) and ice budgets (magenta line) as in CPO-1.

O'Donnell, 2019
CIRCA

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Coastal Issues

- "20 inches by 2050"
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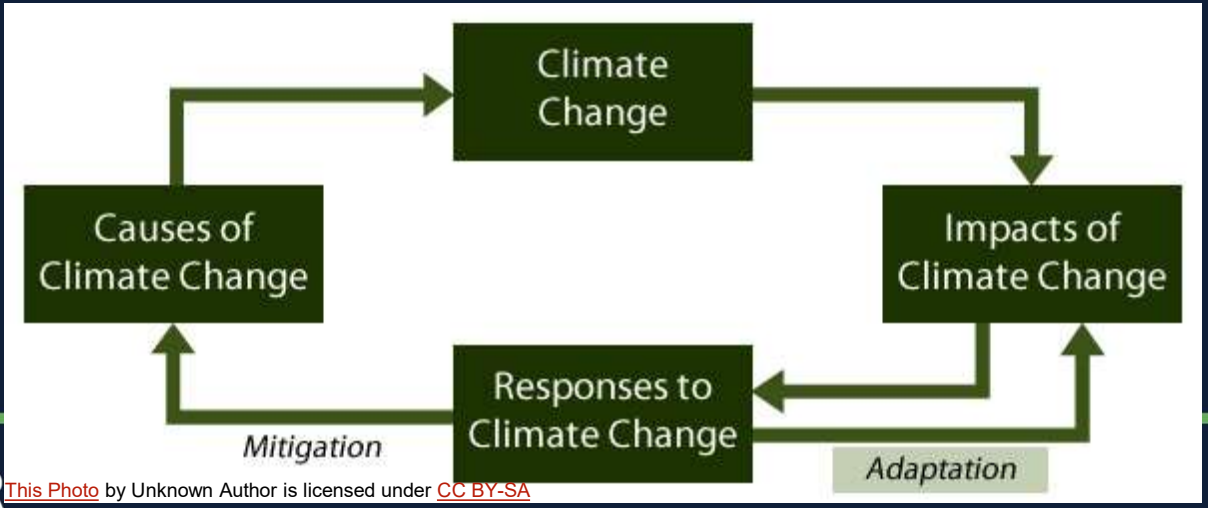
Adapting and Moving Forward

- From the US EPA Glossary of Climate Change Terms:
- Adaptation:
  - Adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities.
- Resilience:
  - A capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment.



Adapting and Moving Forward

- The “good news” section - there are things to be done!
- Planning for adaptation and resilience
- Climate Vulnerability Assessments
  - Exposure + sensitivity + adaptive capacity
- Climate Adaptation and Resilience Plans
  - Put it into action
- We know how the future might look – vulnerability assessments and planning can help protect our communities

Adapting and Moving Forward

- Personal Strategies
  - Rain gardens
  - Climate smart landscaping
  - Restoring riparian zones


Photo: Dave Dickson

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Tools to Make it Happen

- Resilience hub

Long Island Sound Study
A Partnership to Restore and Protect the Sound

Long Island Sound Resilience Resource Hub

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Long Island Sound Study
A Partnership to Restore and Protect the Sound

Response to Needs Assessment Results

Relevant Challenges/Barriers:		Associated Needs:
Limited Staff Capacity	Limited expertise/knowledge to manage facets of a project	Sharing of experiences and case studies
Limited Access	Limited access to info on LIS, environmental impacts of climate change, science/data, resources/experts	Identification of resources and tools
Funding	Difficult to navigate funding opportunities	Identification of funding opportunities

Objectives & Outcomes

Long Island Sound Study
A Partnership to Restore and Protect the Sound

Website Objectives

- Create a user-friendly website of curated planning resources, information, and tools
- Expand SRC Extension Professionals' capacity to assist stakeholders
- Include **vetted** resources and tools that are **relevant** to the LIS region and are **easy to use**

Desired Outcomes

- Communities are empowered to enhance their resilience and sustainability through:
  - increased capacity to work on LISS objectives
  - assistance in moving from concepts to plans useful for grant and permit applications
  - guidance for implementing actions
  - sharing approaches and services among each other

Target Audience

Long Island Sound Study
A Partnership to Restore and Protect the Sound

- Municipal Staff/Committee Members
- Municipal Elected Officials
- Nonprofits (conservation, land trusts, environmental)
- Watershed Organizations
- Regional Planning Organizations
- Environmental Consultants
- Community Leaders/Groups/Orgs
- Civic and Homeowner Associations
- Academic/Educational Institutions
- Transportation/Utility Entities
- Coastal Businesses
- Faith-based Organizations
- Indigenous Communities
- Resource Users of the Long Island Sound

Audience Needs

Long Island Sound Study
A Partnership to Restore and Protect the Sound

To quickly and easily find the most pertinent resources and tools to assist with advancing the sustainability and resilience of their community.

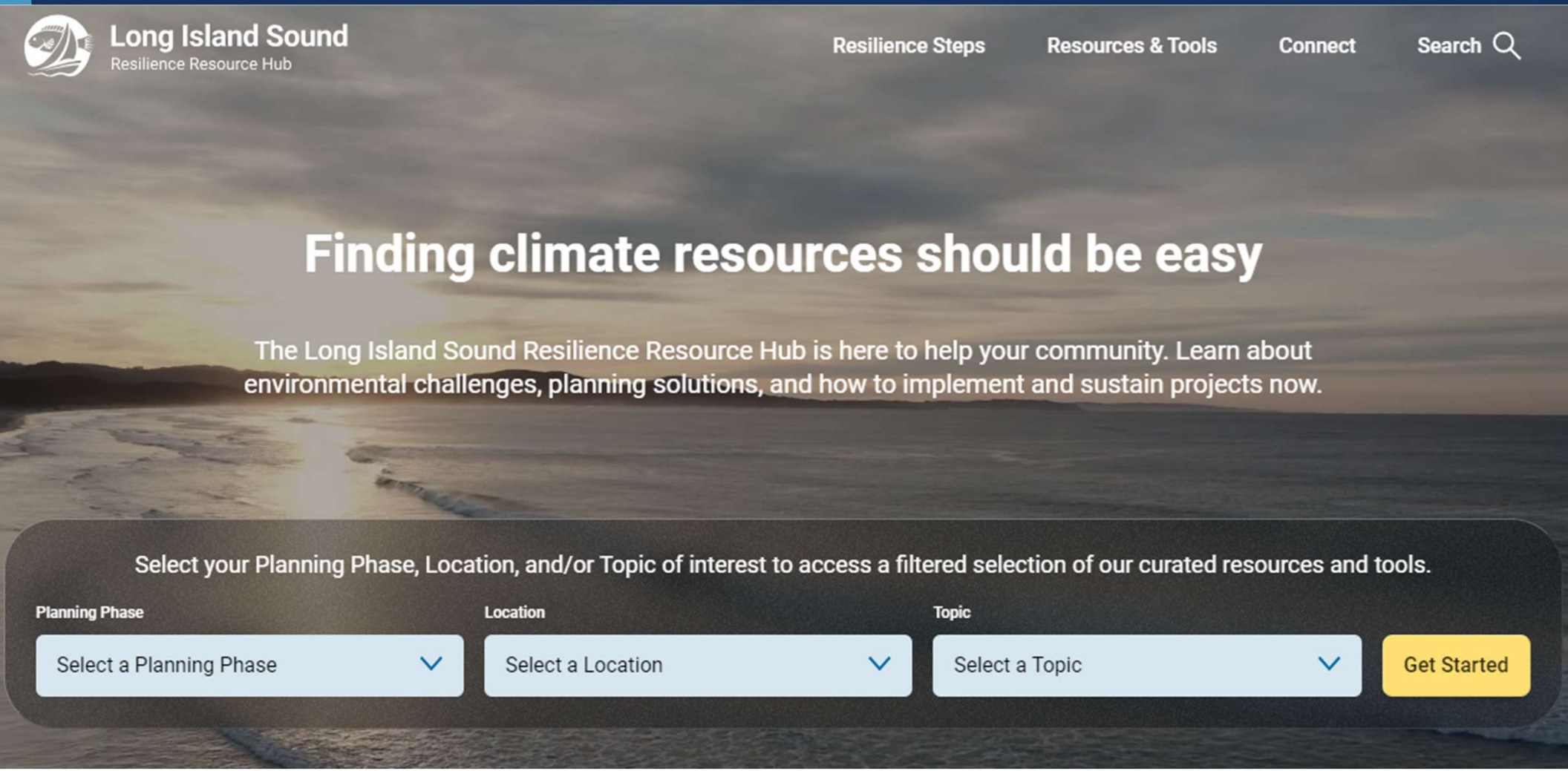
How can the Resilience Hub aid you in this goal?

- Provides easy to navigate resources tailored to their local region, project needs, or interest
- Provides a guidance framework that can help shepherd users forward along a path
- Provides project inspiration

What should you expect when visiting the Resource Hub?

- The best available information on local climate change impacts to Long Island Sound
- A welcoming, continually updated website that is easily searchable
- A “one-stop-shop” catered to your specific needs and goals
- To discover resources that you otherwise may not have known about

Website Demonstration



Long Island Sound Study
A Partnership to Restore and Protect the Sound

Break Down Barriers Program

Track One

Long Island Sound Resilience **Planning Support Program**

Focus: **Planning and Project Scoping**

Eligible Applicants: Municipalities, Community Organizations

Closed: *Next round anticipated in Fall 2024*

Track Two

Long Island Sound Resilience **Grant Writing Assistance**

Focus: **Grant Preparation and Writing**

No match required, up to $9,950 per application

Rolling: *Open until all available funding has been allocated*

Questions, Conclusions

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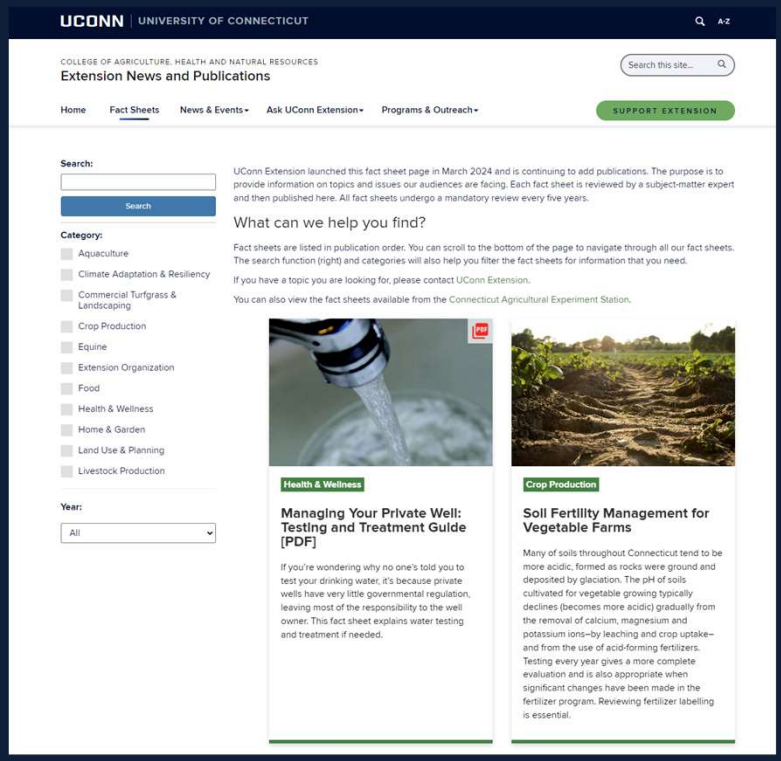
UConn Extension Factsheets

- https://publications.extension.uconn.edu/publications/
- Climate impacts coming soon …
- Learn more about floods
- https://publications.extension.uconn.edu/publication/how-can-we-reduce-flood-risk-in-our-communities/



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