Vermont State Technical Committee Meeting

January 18, 2023

Hosted hybrid: USDA Office, Colchester, Newmont Farm, Bradford and virtually via Microsoft Teams

NEXT MEETING IS SCHEDULED FOR APRIL 19, 2023

Attending (Colchester): Obediah Racicot (NRCS), Bob Thompson (NRCS), Angela Hyldburg (NRCS), Dave Adams (VTFWS), Eileen Powers (FSA), Keith Thompson (FPR), Suzy Hodgson (UVM Extension), Lynn Knight (NRCS ENTSC), Erin Lane (USDA Forest Service & NE Climate Hub), Kate MacFarland (USDA National Agroforestry Center)

Attending (Fairlee): Travis Thomason (NRCS), Marli Rupe (DEC), Jennifer Byrne (WRJNRCD), Josh Allen (NRCS), Paul Doton (CRWFA), Bill Emmons (CRWFA), Tom Eaton (ACS), Walt Gladstone (Newmont Farm)

Attending (MS Teams): Jeff Farber (VACD), Harris Roen (VWA), Stacy Cibula (VHCB), Mary Montour (VAAFM), Diana Butler (Vermont Rural Water), Brad Roy (Vermont Rural Water), Kira Jacobs (EPA Region 1 Drinking Water Program), Paul Hamelin (VFW), Dana Hazen (Redstart), Travis Hart (VFW), Andrew Thomason (NRCS), Jillian Liner (Audubon VT), Alli Lewis (VAWQP), Sarah Waring (RD), Sarah Damsell (OCNRCD), Emily Nummer (VACD), Jill Arace (VACD), William Eldridge (VFW), Sinorakhoune Bounmasanonh (NRCS)

Vermont USDA
State Technical Committee Meeting

January 18, 2023 | 9:30 am-10:45 am

USDA Office, Colchester, Newmont Farm, Fairlee, or MS Teams

Locations: 356 Water Tower Hill, Colchester | 161 Mallary Road, Fairlee

MS Teams link: Click her to join the meeting

For phone only, call 202-650-0123, passcode 306045363#

Agenda

9:30 AM	State Conservationist Intro and NRCS Update	**Travis Thomason**, NRCS State Conservationist
9:35 AM	Farm Service Agency Update	**John Roberts**, FSA State Executive Director **Eileen Powers**, FSA Agricultural Program Specialist
9:45 AM	Rural Development Update: REAP Funding* * Not presented during the meeting; Provided in the minutes only	**Sarah Waring,** RD State Director
9:50 AM	Legislative Update	**Will Stevens**, Senator Sanders' Office Senator Welch's Office Congressman Balint's Office
10:00 AM	USDA NE Climate Hub Update	**Lynn Knight**, Agricultural Economist at the East National Technology Support Center
10:35 AM	Irrigation Sub-Committee Update	**Bob Thompson**, NRCS State Conservation Engineer
11:25 AM	Wrap-up	**Travis Thomason**, NRCS State Conservationist

Opening - Obe Racicot:

- We are operating in a hybrid environment: Colchester, Fairlee, and MS Teams.
- This meeting is being recorded.
- Review of Hybrid Meeting ground rules/requests: limit side conversations and limit use of chat to technical issues/clarifications or questions/comments on the current agenda item

Welcome and NRCS Updates:

Travis Thomason, State Conservationist, NRCS Vermont

Leading this call from the Gladstone Family Farm in Fairlee, VT to attend the CT River Watershed Farmers Alliance (CRWFA) Annual Meeting. Both meetings were adjusted to allow attendance to both, which is why the STAC meeting is shortened to 9:30 - 10:45 am.

Rural Development is not able to attend, but their information will be included in the minutes.

Inflation Reduction Act (IRA)

In the next 4-8 weeks, NRCS will know more about what IRA will look like so we can begin making plans. An email will be sent inviting STAC members to join a future Climate Subcommittee (date TBD) to offer feedback on how the IRA resources can be utilized and which partners can support the work.

Action: *Send email/GovDelivery to STAC members soliciting members for the Climate Subcommittee.*

Farm Service Update:

Eileen Powers, Agricultural Program Specialist, FSA Vermont

Emergency Conservation Program (ECP) – December storm damage to sugarbush

The FSA update that impacts STAC is related to the winter storm that hit Vermont just before Christmas that took out a lot of sugarbush. FSA has a program called the Emergency Conservation Program (ECP) in which we can help a producer restore their agricultural land to a productive condition. Covers only cropland, but maple is considered a crop and most of the storm's damage was to maples. It can also help with trees on fences or removal of debris from crop fields.

The threshold is it must cost a producer at least $1,000 of their own money and then they can ask for cost-share. Eligible for 75% of cost; Limited resource/social disadvantaged producers are eligible for 90% of cost.

The technical aspect is there isn't a good way to calculate how much damage happens in a maple sugarbush. This past year ECP moved to using the NRCS payment scenarios and there is no payment scenario that adequately covers the costs for maple sugar damage. Woody Residue Treatment Practice Code 384 is the closest fit. Hard to determine acreage when the damage is "batchy". The producers are responsible for telling how many acres were affected. NRCS personnel are working to assist producers with accessing damage. Overall, we're trying to determine the right way to assess this damage and working to determine a fair payment for producers.

Comment/Question: *Keith Thompson (FPR) - Any models from the 2010 Emergency Forest Restoration Program (EFRP) Practices from the 2010 windstorm that could help?*

Answer: *Eileen - Not really because up until this year we used components to make it up. We would get the hours spent doing clean-up from the producers and "back-in" to the payment. And we might end up doing that this time.*

There are two practices for the ECP.

- EC1 - debris removal or obstruction removal.
- EC7 - other emergency conservation measures (repair and restoration of maple taps and tubing)

There is no payment scenario for repair and restoration of maple taps and tubing. National Office said to do what is needed, but it must be a flat rate. Hopefully there will be a 2024 payment scenario for this as there are many states with maple sugaring.

Question: *Tom Eaton - How do producers start the process? Is there a deadline?*

Answer: *Eileen - Contact local FSA. No firm application deadline right now. FSA collects the reports of damage from producers during an interest gauging period. If adequate interested, FSA then goes to National to approve the program within the State. Should National approve the program for enrollment, there is then a formal 30–60-day application period. After formal applications are received and FSA county offices have a better estimate of the expenses, FSA goes to National for funds.*

Question: *Walt Gladstone - Regarding Emergency Programs - The way the government (i.e., the US Drought Monitor Map) gathers and classifies information on drought in large counties sometimes is not adequate. Sometimes there can be a disaster within the county but not near the weather towers and therefore not able to get financial help.*

Answer: *Eileen - There are ways to get ECP money for drought assistance even if county is not on the US Drought Monitor or the drought intensity doesn't reach the thresholds to get assistance. ECP can affect just one producer to request assistance.*

Rural Development Update*:

Sarah Waring, State Director VT/NH, RD VT/NH

REAP Funding

USDA Rural Development would like to make sure folks know about the **Rural Energy for America Grants**: **OPEN NOW through March 31!** The program provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements. Agricultural producers may also apply for new energy efficient equipment and new system loans for agricultural production and processing. New update – increased amounts for projects, and up to 40% grant eligible.

Eligible uses: new renewable energy systems, such as solar, geothermal, biomass or other. Also, high efficiency HVAC, insulation, lighting, cooling, doors and windows and equipment replacement for older, inefficient equipment.

Eligible entities: Agricultural producers with at least 50 percent of their gross income coming from agricultural operations, and small businesses in eligible rural areas.
Learn more: contact our local office, Ken Yearman Business Programs Director, at Kenneth.yearman@usda.gov, or Tracy Rexford, at tracy.rexford@usda.gov

Legislative Updates

No representatives present / No updates

USDA NE Climate Hub

Lynn Knight, NRCS Agricultural Economist at the East National Technology Support Center and Co-Director for the NE Climate Hub
Co-Presenters:
Erin Lane, USDA Forest Service and Coordinator for the USDA NE Climate Hub
Suzy Hodgson, UVM Extension

Welcome

- Introduction and review of Agenda

NE Climate Hub Overview

- What is the USDA Climate Hub, *presented by Erin Lane*
  - Formed in 2014 by Secretary Vilsack from the Climate Action Plan, Obama Administration
  - 10 Hubs: Regional & Sectoral (all US and Territories)
  - All USDA, collaborate with ARF, FS, NRCS, but also FSA, RD and others
  - Science-based, within the Research sector of the Forest Service
  - Assisting producers within the region with climate change: Tools, practices, resources
  - How to adapt, mitigate, make climate-informed decisions
  - Co-lead for each Hub: Lynn Knight, Northeast Hub and Bethany Munoz Delgado, Northern Forest Hub (Northeast & Midwest Hubs)
- Where to go for more information and resources
  - Factsheets, Summaries of Scientific Studies, Workshops, Webinar series, Economic Case Studies, Quarterly Newsletters, 360 Virtual Tours (demo of adaptation practices)
  - Want to partner to create and share these resources
- Priorities
  - Strengthening the connect with NRCS Northeast States: needs, feedback loop, etc.
  - Economic Analysis: Long term data
  - Climate Mitigation: new practices like wood vaults, forest carbon markets
  - Water: how to deal with drought issues, how to define drought, how to adapt to it
  - Climate Equity Project: Hiring a Fellow (GS-9, 18 months, master's degree) for this work
    - Will be posted on ORISE; ErinDLane@usda.gov
  - Climate Literacy: Climate Learning Forum, *presented by Suzy Hodgson*
    - Improve cooperation and information exchange throughout the network
    - Increase comfort levels to foster collaboration among Ag service providers
    - Activities: Listening Sessions, Networking, and Workshops (next one/two years)
- Major happenings within NRCS surrounding Climate, specifically Above State level
  - Science based
    - Improving understanding of climate change impacts and responses
    - Understanding each other's lens
    - Translating science into information and action for ourselves and producers
  - Adaptation
    - Managing impacts and risks
    - Adapting to changes and stressors and building resilience
  - Mitigation
    - Addressing root causes
    - Reducing Green House Gas (GHG) emissions and increasing carbon sequestration
  - Provided list of work that has already been done in these areas, plus upcoming IRA funds
  - Climate-Smart Agriculture and Forestry (CSAF) – an integrated approach that enables farmers, ranchers, and forest landowners to respond to climate change by reducing or removing GHG emissions and adapting and building resilience, while sustainably increasing agricultural productivity and incomes. While **mitigation addresses the causes** of climate change, **adaptation and resilience address the consequences** of climate change.
  - Agriculture as a Means of Climate Change Adaptation and Mitigation Provisions under IRA

        - Conservation (nearly $38 B)
        - Renewable energy ($13.3 B)
- Climate Change in NRCS Business
    - Adaptation vs Mitigation: it's not an "either-or"
        - Conservation Practices can provide benefits to both
        - Combine Climate change (stressors) to Practices
    - Above States
        - Review of org chart as it related to Climate
        - New Climate Coordinator: Dana Ashford-Kornburger
        - Reviewed how other Deputy area support Climate
    - Climate Literacy and Trainings: what's available and producing new materials
    - NRCS State and Center POCs for Climate
    - NE Climate Hub will be attending as many STAC meetings as possible
- What's Changing Where you are?
    - Data released in the Fourth National Climate Assessment 2018
        - Temp changes 1895-2018: NE getting warmer
        - Temp changes by season: Winter warming and frost deeper into the ground; Summer more heat waves; Increase in extreme precipitation
    - Climate change can be integrated into our nine steps of Conservation Planning

How Can We Work Together?

- Discussion: Connecting to our Work

Comment: *Jennifer Byrne (WRJNRCD) - I really struggle with this concept as it appears to be a "rebranding" of work that we and farmers are already doing. Not sure that any of this was new. I appreciate that the conclusion was that we need good conservation planning and, on the ground, decision making assistance to farmers. There are already a lot of networks existing in Vermont and I encourage you to connect with those before starting new ones.*

Response: *Lynn Knight (NE Climate Hub) - We totally hear you. If okay with Travis and team, we would love to be on your climate team, as we could help with that. We are rebranding, but we're also focusing. And we will have to prove to congress that we are having some sort of impact on the landscape to help producers become more resilient and to help mitigate climate change. (Shared an example of producer with manure digestor and how it impacts climate when in the past the focus was on practices that impacted water quality. A digester might be a more viable practice for some producers.) There's a different focus and different opportunities.*

Response: *Travis (NRCS) - I agree with you, Jennifer. I think conservation planning really in its roots, is something we've been doing for a long time. It's not new, especially here in Vermont. I think "conservation ethic", is rooted deep in agriculture and land management.*
I think what's important for me is:
A. The conservation partnership: the employees working with farmers can speak intelligently about what climate change is (resilience and adaptation). It's important to me that when we're working with producers, we're making solid recommendations.
B. Our conservation practices, we need to make sure that we are designing those appropriately to adapt to more extreme weather events (like our 24-hour, 100-year storm event). I want to make sure our data is accurate to capture those things.
C. And the last thing, is to make sure that producers really understand the opportunities out there. And like I've said before, it's my responsibility to make sure that producers in Vermont take advantage of every opportunity that's coming to them.
And I think that Climate Hubs are there to help us do all three of those things, even though we are very state centric. I think there's a lot of work for us to do, but I agree that Vermont is way ahead of the game for those things. We just need to catch up from a federal perspective. So great question, great comment.

Comment: *Tom Eaton - From a service provider standpoint and what I hear from the clients/farms that I work with, is that the standards, the way they're written today and the practices that fit into the programs that they're most familiar with and the ones that are most widely used, are really missing a lot of opportunity. I think there needs to be a true overhaul of these standards and some of the requirements around them to achieve these types of goals.*

Comment: *Walt Gladstone - I think another thing that's important is to embrace and hold these service providers, these independent guys like Tom accountable, but they play such an important role. I sit here today because I know if I don't get somewhat involved, then I probably won't know about the information that you are sharing today. And I think that's probably one of the biggest problems out in the farming community. It's probably different in different areas. The heavy dairy counties, hopefully that information is getting out better. But I'll tell you, communication and full information is critical. And the guys that are the service providers, they're out here making sure that our nutrient management plans and what we're doing is appropriate on our farms. And these guys are the ones that are oftentimes share full of information. The other thing (and I'm sure you guys are trying to do this), what do the farmers think they need versus what maybe you folks think we need. And sometimes it's just amazing what comes out of that conversation. You may already be doing it and I don't need to speak out of school. I'm here today because your meeting is at our farm, but full of information is just critical.*

Comment: *Sarah Damsell - I want to follow up regarding the producer's comment. I agree and I've talked to Travis about this. Making sure that this NRCS money, work, practices, utilization of NRCS resources is better out in the community and that we're engaging the community that way. I think the conservation districts are really poised well to serve in that role. I just reviewed the Memphremagog tactical basin planning and have recommended this specific strategy as something that we focus on up here.*

Question: *Sarah Damsell - Lynn, are digesters available funding? And kind of in that same bucket, with LFOs, with all this money coming, sometimes I think a hurdle that we don't think about beyond how it affects production and how maybe the cost share rates are not high enough, is that it takes capital and staff capacity to incorporate these management changes. Are there capital funds available to implement these climate smart practices and make these management changes? Namely manure injection, as it's a significant upfront cost.*

Answer: *Lynn Knight - I gave that slide on the IRA and there will be significant amounts of funding coming down the pipe for climate specific practices. That's why I went through the adaptation and mitigation because those are the type of practices that will be funded. Yes, nationally, there has always been funding for digesters. It's it just depends on how the states look at digesters. Every state prioritizes what their primary resource concerns are, and then address their programs to meet those concerns. In the past, climate change has not been a part of that. Things like digesters are ranked on other resource concerns like water quality, which is important, but there's other ways to address water quality that are more cost effective. If you just look at one resource concern, that alternative might not come to the top, but when you're looking at other resource concerns and integrating climate change, it will likely rise more to the top. Travis, do you want to add to that?*

Answer: *Travis - Thanks, Lynn. Sarah, I know we've talked about this, but I will say we're going to take advantage of every opportunity that's out there for any practice that addresses climate change. Like I mentioned at the beginning of the meeting, we're going to get a climate subcommittee together that will meet more frequently because I want feedback on these opportunities. Tom, I really appreciate your feedback on the practices that need adjusting, what those adjustments need to be, what we should be investing in here in Vermont. Sarah, I do think there's this aspect of that community engagement and I know Walt mentioned this about communicating with partners and the Ag service providers. I think those are all things that I would love to entertain and see how NRCS can invest in the right way to make sure it's effective. And yes, digesters are absolutely on the list. But I need some feedback from the folks in*

Vermont about really what that investment looks like, if that's the appropriate investment to make, if there are other high priority investment. I hope that was an answer good enough for you, Sarah. We'll talk more for sure.

Question: *Sarah - One last question and sorry, Lynn, if you covered this, but it sounds like you're saying a bunch of money will come to the climate hub. How does that money get to the producers? Does that money then go through NRCS or how does that money then get out to the community?*

Answer: *Obe - The funding will come through the covered programs that will resemble CSP, EQIP and RCPP. Sarah, if you have access to my office hours from yesterday, I talked to it. Funding directly to producers is going to come through mirroring covered programs.*

Answer: *Lynn - The Climate Hubs aren't getting that funding. It's not funneling through the Climate Hubs at all. It's going directly to NRCS.*

Comment: *Keith Thompson - I think it was brought up how many different local efforts there are getting into this into this arena, whether it's forest carbon programs or biodiversity collaborations or RCPP or clean water funds or so on, but from the forestry side, the landowners are small landowners, and they are not tapped into this stuff and the opportunities are overwhelming. And I think that as everybody is getting more money and recognizing the importance of dealing with this, I think NRCS is in a really great position to make a really positive impact in this area, but I think it has the potential to overwhelm landowners. I think making sure there is capacity and coordination is important. So much investment goes into the practices on the ground to get the funding to landowners, but I think that there's a huge benefit to making sure that the relationships get built and the understanding has time to evolve for landowners. I encourage NRCS to use some of the available funds (if there's a potential to do it), to invest in the coordination and capacity so that it lifts-up the broader community and the capacity of everybody to work on these issues.*

Comment: *Sarah Damsell - I appreciate what was just shared (by Keith Thompson) and I will add that I think it's important that there's an investment in the Community so that farmers are shining within their community so that there's that social influence. Because like he said, these practices can go in, that money goes away, and those farmers are not always carrying on that implementation. So, I think helping them shine within their community is an important piece to what that person was talking about.*

Comment: *Kira Jacobs - I work closely with Carl Honkenen (USFS) on drinking water protection in New England through all the states. And one thing that's super exciting, is that we are currently in the process of replicating the Southeastern Partnership for Forests and Water. Working with NRCS, the Forest Service, our state forestry agencies and drinking water agencies we are building the Northeast Mid-Atlantic Forest and Water Partnership (from Maine to Vermont to West Virginia). And I think it speaks to what Keith Thompson just said because we're working closely with Dave Wilcox and Danielle Fitzko at Vermont Forest Parks and Recreation. One of the things that we are most excited about is that the National Association of Conservation Districts has submitted a landscape scale restoration proposal to help us implement this partnership and that would mean that we'd have on the ground projects with conservation districts throughout those states over time. The Southeastern Partnership has been very successful for the past ten years and we're hoping to replicate that.*

Question: *Kira Jacobs - My question relates to a workshop that we did with drinking water utilities in New England a few years ago. I assume, Lynn and Erin, that you work with Maria Janowiak and Danielle Sharon at the Northern Institute for Applied Climate Science at Michigan Tech. One thing I didn't hear you mention, which relates to how we're helping landowners, is the 30 by 30, the Biden administration's priority. For us in the drinking water world, we're really interested in permanently protected well managed forests. Could you speak to the 30 by 30 goal and how that relates to your work on climate?*

Answer: *Erin Lane (via email) - 30x30: This is the national goal to conserve at least 30 percent of U.S. lands and freshwater and 30 percent of U.S. ocean areas by 2030. This initiative seeks to reverse the negative impacts of biodiversity decline and climate change by protecting more natural areas, and to increase access to nature for communities that lack it.*

Climate Hubs don't have a direct role in the 30x30 initiative. However, our Hub mission addresses climate resilience and carbon management, which can contribute by supporting research and information flow about climate adaptation and mitigation strategies. Our focus is on working lands and some of what we learn about management of carbon can be applied to conserved lands to increase climate mitigation efforts. Additionally, our work to increase climate resilience on working lands can have effects on broader landscapes that include natural areas.

Links for More Information:

- USDA Northeast Climate Hub
- NE Climate Hub quarterly newsletters (and how to subscribe)
- USDA Climate Change Adaptation Plans
- Training Resources, including Northeast Climate Change Town Hall recording (on Sharepoint)
- "Weathering the Change" is an eight-part educational video series that talks about what changes are happening in the Northeast and why.
- National Climate Task Force "America the Beautiful" Report (i.e. 30x30)

Irrigation Sub-Committee Update

Bob Thompson, NRCS State Conservation Engineer

Travis asked me to put together a subcommittee for irrigation, an interdisciplinary team.

- Hoping to pull together people from NRCS, UVM Extension, Vermont Veggie and Berry Growers, Agency of Ag, maybe Districts staff
- Will review policy, look at what type of irrigation we are currently doing, determine if we want to expand upon that and/or what type of irrigation we want to do in Vermont
- We also want to look at water sources (e.g., producer who wants help with irrigation, but has no water source and drilling a $40,000 well is not good use of taxpayer money)

Action: *Please contact Bob Thompson (bob.thompson@usda.gov) to express interest in serving on the Irrigation STAC Subcommittee.*

Wrap-up

Travis Thomason, STC NRCS VT

Thanks, Obe and team in Colchester for leading the efforts. Thank you so much everybody for joining. Appreciate the climate focus. More information to come from the climate subcommittee. I'm also really interested in investing in the right ways for irrigation. Thank you to the Gladstone Family Farm for hosting us here in Fairlee. And thank you Paul Dalton and the Connecticut River Watershed Farmers Alliance for letting us come here today.

Meeting adjourned at 10:40 am

Future meetings:

April 19, 2023, 9:30 am - 12:00 pm
June 21, 2023, 9:30 am - 12:00 pm

USDA

United States Department of Agriculture

Natural Resources Conservation Service

USDA NE Climate Hub
Vermont State Technical Committee

January 18, 2023

Natural Resources Conservation Service

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Agenda

- Welcome –
- NE Climate Hub Overview –
- What's Changing in Vermont
- How Can We Work Together?
- What's Next and Available Resources

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Overview and Objectives

Dana Ashford-Kornburger

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Objectives

The VT STC will understand:

1. What is the USDA Climate Hub?
2. Major happenings within NRCS surrounding Climate
3. Impacts of climate change on Vermont
4. Integration of planning for climate into our work
5. Where to go for more information and resources

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What are USDA Climate Hubs?

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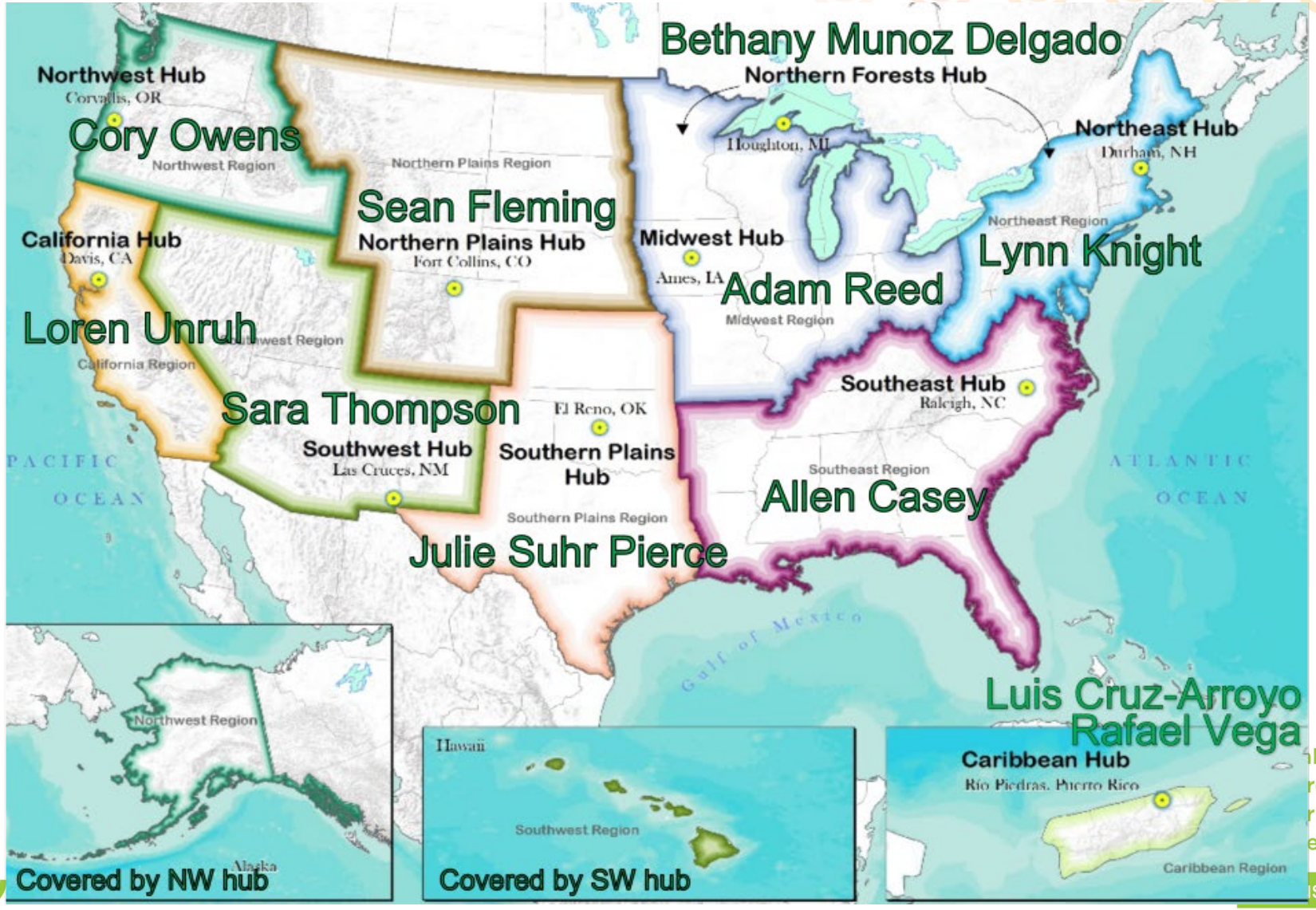
USDA Climate Hubs

- Formed in 2014 by Secretary Vilsack
- 10 Regional Climate Hubs - all of US and Territories
- Collaboration between ARS, FS, and NRCS
- Deliver science-based, regionally specific information, tools, and practices to assist producers in achieving their goals in today's climate
- Help farmers and foresters adjust and adapt to climate change by demystifying the concept and supporting climate-informed decision-making to stay profitable
- Focused on what's happening now

www.climatehubs.usda.gov

Climate Hub Regions & NRCS Co-leads



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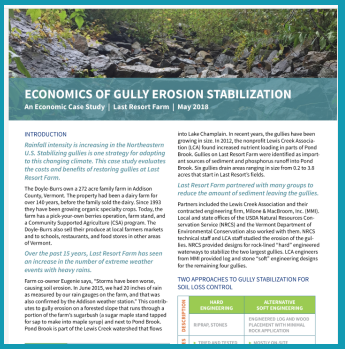
USDA Climate Hubs

Factsheets and summaries of scientific studies

Workshops and proceedings

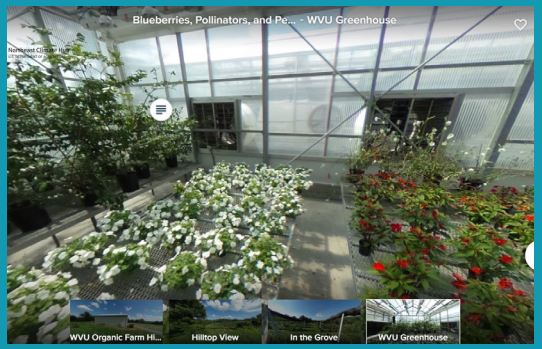
Economic case studies



Quarterly e-newsletters

Archived webinars

360 virtual tours demonstrating climate adaptation practices



Northeast Climate Hub Priorities

- **Strengthening the connection with NRCS Northeast States**
  - Better understanding among NRCS state-level leadership of USDA Climate Hubs
  - Improve feedback loop on what the Northeast States need from Climate Hubs
  - Utilizing our resources and partnerships to help states meet increased conservation needs
- **Economic Analyses**
  - Case Studies & Long-term Soil Health Practice
- **Climate Mitigation**
  - Wood Vaults (innovative practice)
  - Forest Carbon Markets
- **Water**
  - Flash Drought
  - Saltwater Intrusion
  - Shallow Wells (innovative practice)
- **Climate Literacy**
  - Peer Learning Opportunities
  - Applied Science Exchange (ARS/FS -> NRCS)
  - SCAN/TSCAN tool development

Climate Learning Forum

Goals:

Improve cooperation and information exchange through networking

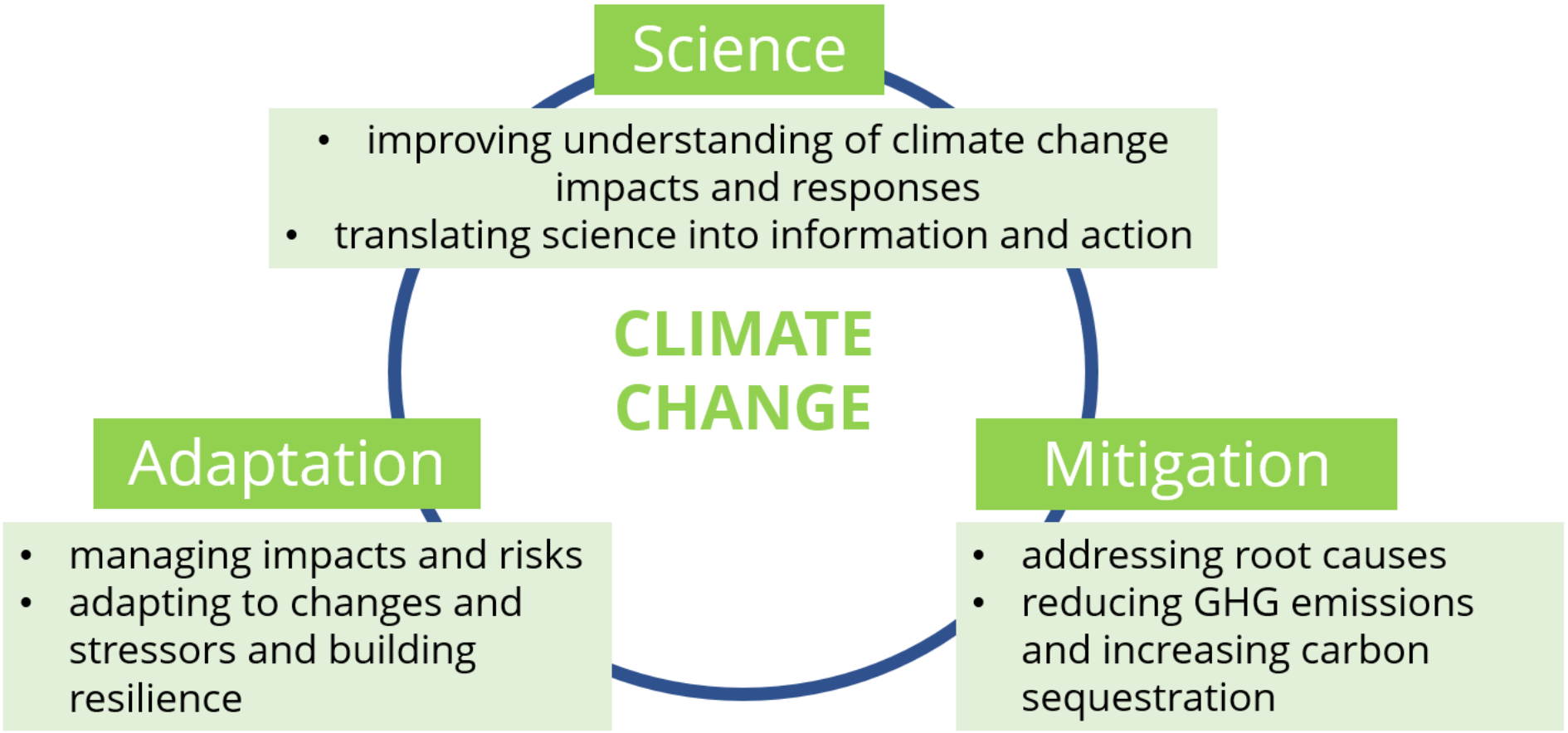
Increase comfort levels to foster collaboration among ag service providers

- What are your climate-related priorities? What questions remain unanswered?
- What areas of technical assistance are not consistently addressed by service providers? Where are the gaps?
- What climate-related expertise or information would you like greater access to?

Key Audience: Ag Service Providers (NRCS, Extension, etc.)

Activities: Listening Sessions, Networking, and Workshops

Role of Climate Hubs (and NRCS!)



Natural Resources Conservation Service

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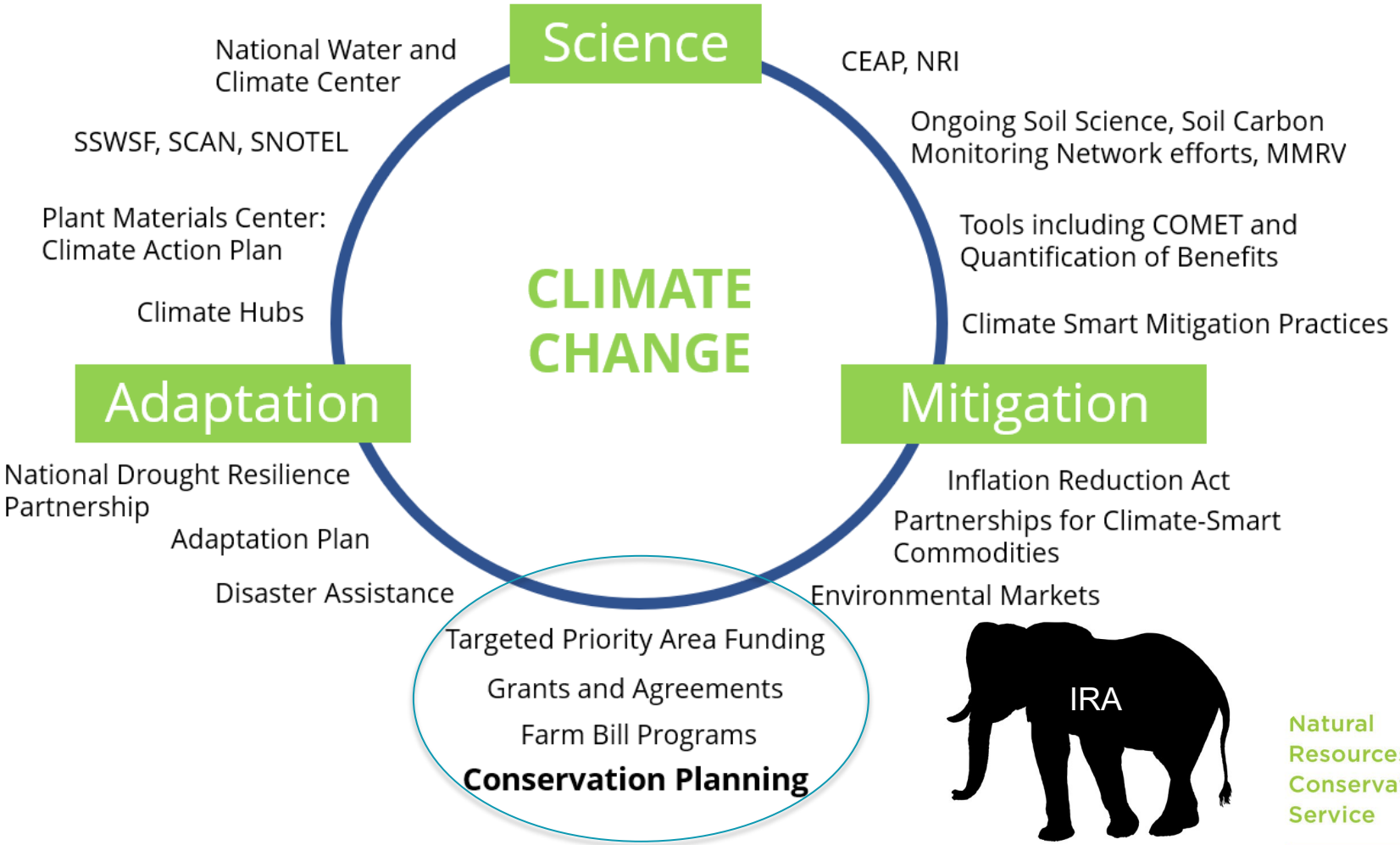
NRCS has already integrated climate…
…and we continue to do more!



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Climate-Smart Agriculture and Forestry

Climate-smart agriculture and forestry (CSAF) is an integrated approach that enables farmers, ranchers, and forest landowners to respond to climate change by reducing or removing GHG emissions (**mitigation**) and adapting and building resilience (**adaptation**), while sustainably increasing agricultural productivity and incomes.

While **mitigation addresses the causes** of climate change, **adaptation and resilience address the consequences** of climate change.

Ag as a Means of Climate Change Adaptation and Mitigation Provisions under Inflation Reduction Act (IRA)

- **Conservation (nearly $38B):**
  - Adds $18 billion to farm bill programs, including EQIP; $8.45 billion, Regional Conservation Partnership ($4.95 billion), Conservation Stewardship ($3.25 billion) and Agricultural Conservation Easement Program ($1.40 billion).
  - Program funds would be directed to climate change-related goals and would prioritize mitigation activities
  - Extends some of these programs' authorities to FY 2031.
  - Conservation technical assistance ($1.0 billion),
  - Carbon sequestration and greenhouse gas emissions quantification ($300 million),
  - Administrative expenses ($100 million).
- **Renewable energy ($13.3 billion for farm bill energy programs).**
  - $1 billion for electric loans for renewable energy resources, including storage.
  - $1.7 billion for Rural Energy for America Program (REAP)
  - $304 million in grants and loans for underutilized renewable energy technologies
  - $500 million for grants to increase agricultural based fuels
  - $9.7 billion — for financial assistance on renewable rural electric system, zero-emission systems, carbon capture and storage systems.
  - $5 million for EPA Renewable Fuel Standard program, in part, for data collection and analyses for lifecycle greenhouse gas emissions of a fuel
  - $10 million for new grants to support investment in advanced biofuels.
  - Sustainable aviation fuel (SAF) tax credit
  - Extends Tax incentives for biofuels, including biodiesel through 2024

Source: Joe Outlaw & Bart Fischer, TAMU, AFPC (taken from CFARE Brandt Symposium Presentation by Bruce McCarl, TAMU, 1/2023)

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Climate Change in NRCS Business

Dana Ashford-Kornburger

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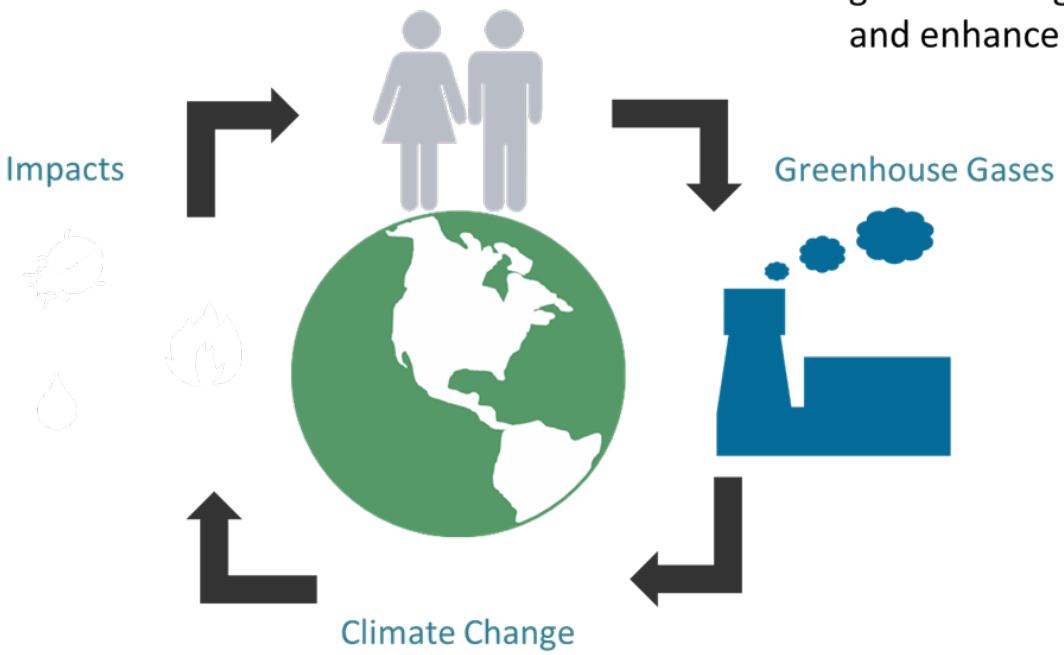
Adaptation vs. Mitigation: Good conservation isn't "either-or"

Adaptation

Actions to reduce the vulnerability of systems to climate change effects.

Mitigation

Actions that reduce greenhouse gas emissions and enhance carbon sinks.



Connecting Practices to Solutions

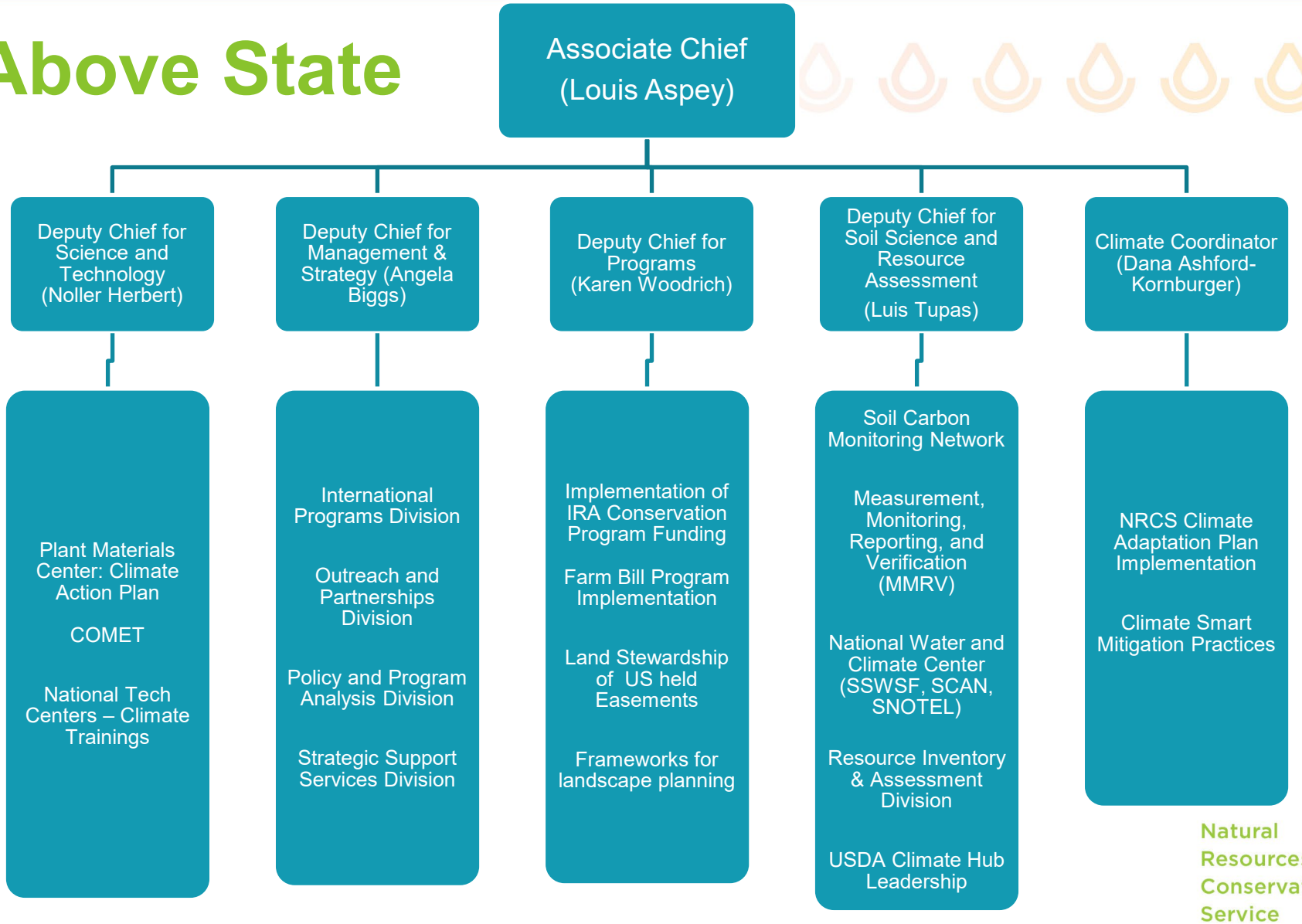
Conservation Practice	Adaptation Benefits	Mitigation Benefits
Use of Cover crops	Increased soil cover and organic matter **reduces water loss** and the potential for drought stress; increased cover **reduces erosion** associated with extreme weather	**Increased carbon sequestration** in soils
Adjust nitrogen application rates to account for precipitation rates and local conditions	Reduces nitrogen leaching and denitrification that may occur with increasing amounts of spring precipitation, **minimizing water quality impacts.**	Lower levels of nitrogen fertilizer application **reduce nitrous oxide** losses from the fertilizer, as well as carbon dioxide emissions from fertilizer production
Use tree cover or silvopasture systems for livestock production	Increases shading of livestock to **reduce heat stress**	Trees provide **carbon sequestration**

(Adapted from the USDA Adaptation Resources for Agriculture – Midwest/Northeast)

Connecting Climate Changes to Practices

Region	Climate Changes ("Stressors")	Land Use	Impact	Planning Considerations	Practices that can help
NE	Increases in intense precipitation	Cropland	Erosion	Erosion Control, tillage	328, 329, 412, 600, 638
NE	Warmer winter temperatures	Forests	Invasive species	Pest Management, Forest Stand Improvement	595, 666
All	Frequency and Intensity of Drought and intense precipitation (extremes)	All	Soil moisture	Water management planning needs to consider increased potential for both drought (irrigation) and deluge (drainage) within the same region.	442, 447, 449, 554, 587

Above State



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Climate Change Adaptation Technical Team

- Team to start work later this month with a focus on:
  - Resource Concerns, Planning Criteria, and Assessments
  - Conservation Practice Standards, Support Documents, and Payment Scenarios
  - Fact sheets and materials

NRCS Evaluations and Quantification for Mitigation Benefits

- Cross deputy evaluation process
- Consistency in quantification methodologies across the USDA / USG
- Improvements to practices and activities to maximize climate mitigation benefits

NRCS Climate Literacy and Trainings

- Regional Town Halls
- Updates to existing courses
- Development of new training materials

NRCS State and Center POCs

- Point of contact for agency efforts related to climate change
- Maintain a working knowledge of USDA climate resources related to climate change mitigation, adaptation, and resilience
- Coordinate and help identify needs for state climate trainings
- Participate in State Technical Committee meetings and encourage other climate network partners to be part of the committee
- Point of contact for NRCS Climate Hub co-leads
- Collaborate with NRCS Climate Hub co-leads to provide updates on current and emerging technologies and research with field staff, state technical leadership and state conservationist
- Engage with local, regional, and national contacts

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What's Changing Where You Are?

USDA Northeast Climate Hub

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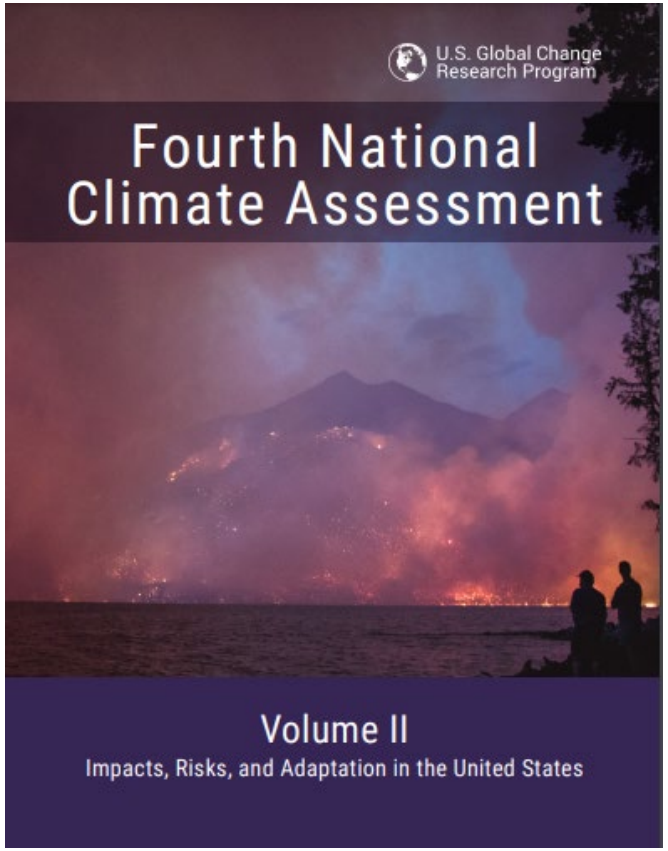
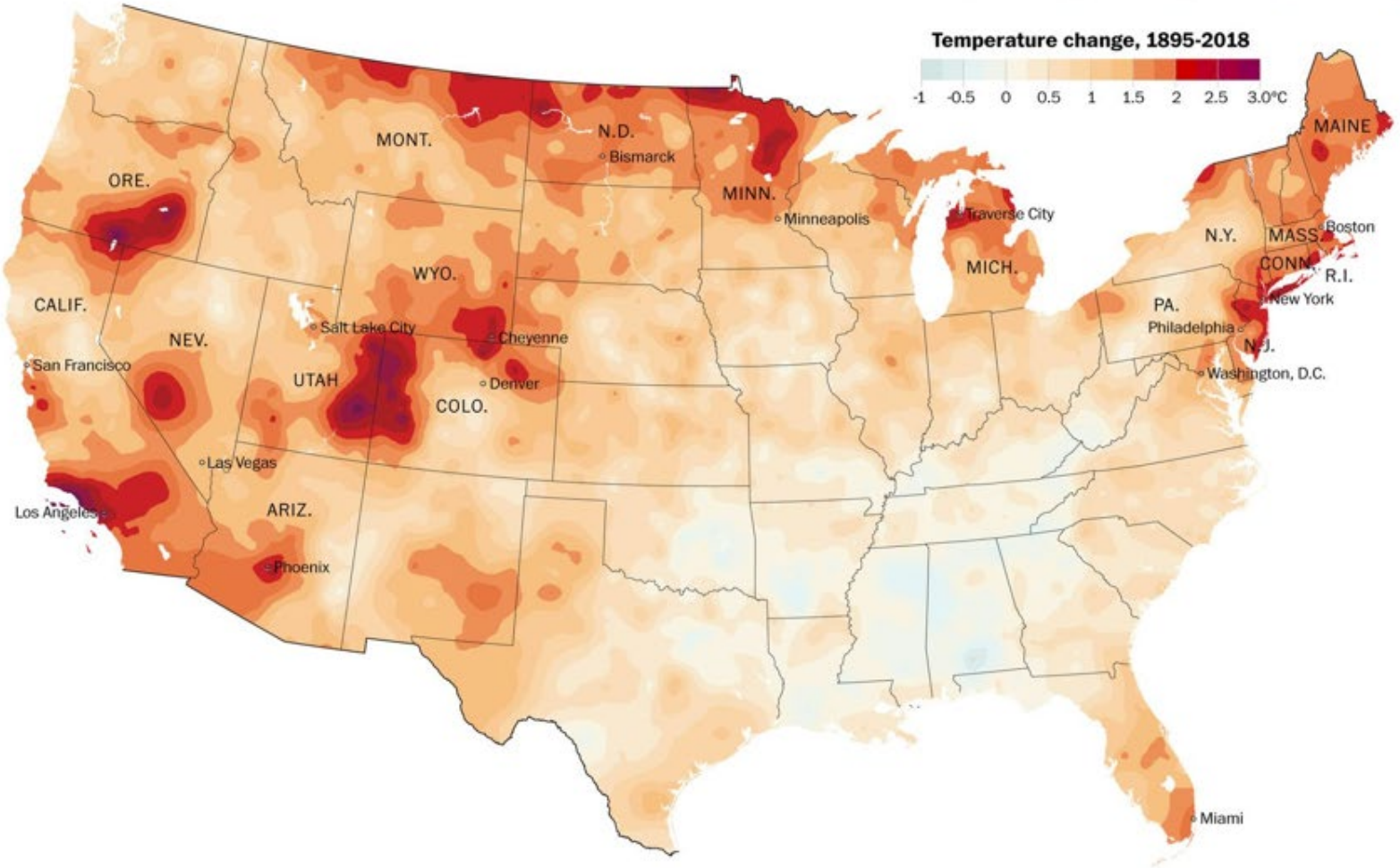
Fourth National Climate Assessment 2018

- 1,500 page congressionally mandated report done every four years by the US Global Research Program (federally funded).
- Lead agency: National Oceanic and Atmospheric Association, many other partner contributors including USDA



https://nca2018.globalchange.gov/

Observed: U.S. Change in Temperature Since 1895



Source: Fourth National Climate Assessment 2018

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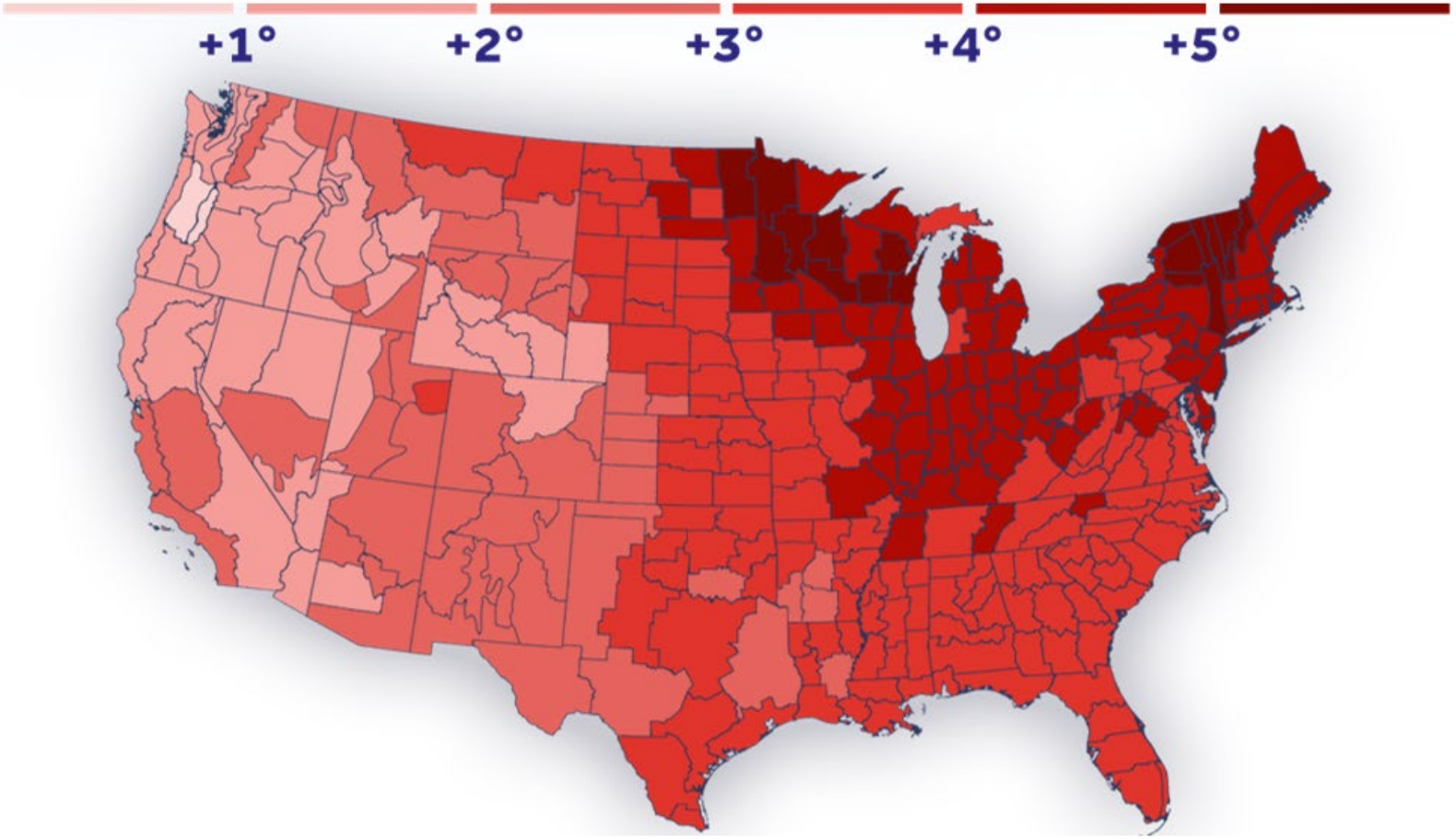
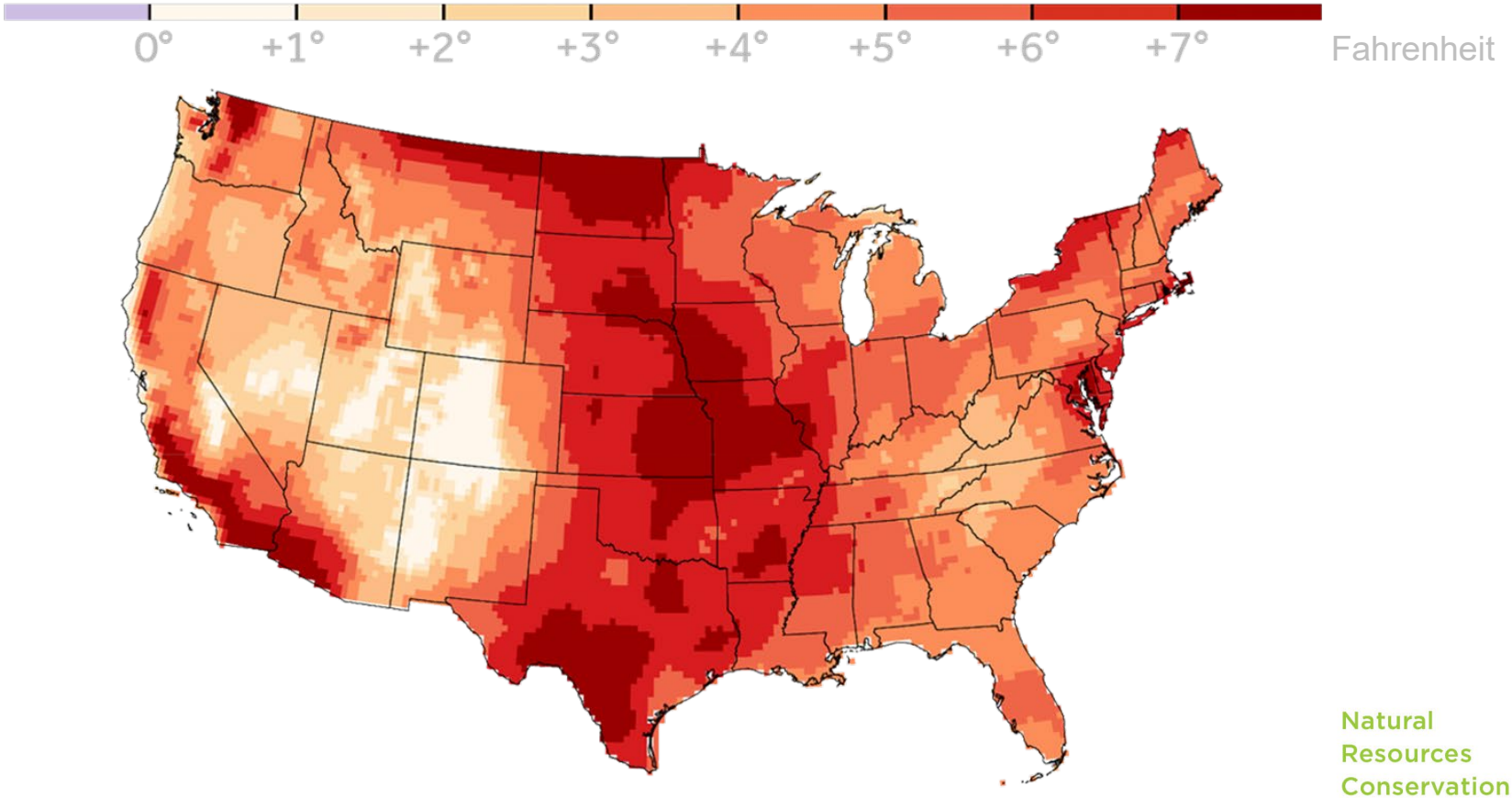
Not All Seasons Are Warming at the Same Rate: Winter Warming Since 1970 (° F)



Source: NOAA/NCEI Climate at a Glance Dec-Feb

Change in Summer Equivalent Temperature Since 1950 (heat plus humidity)



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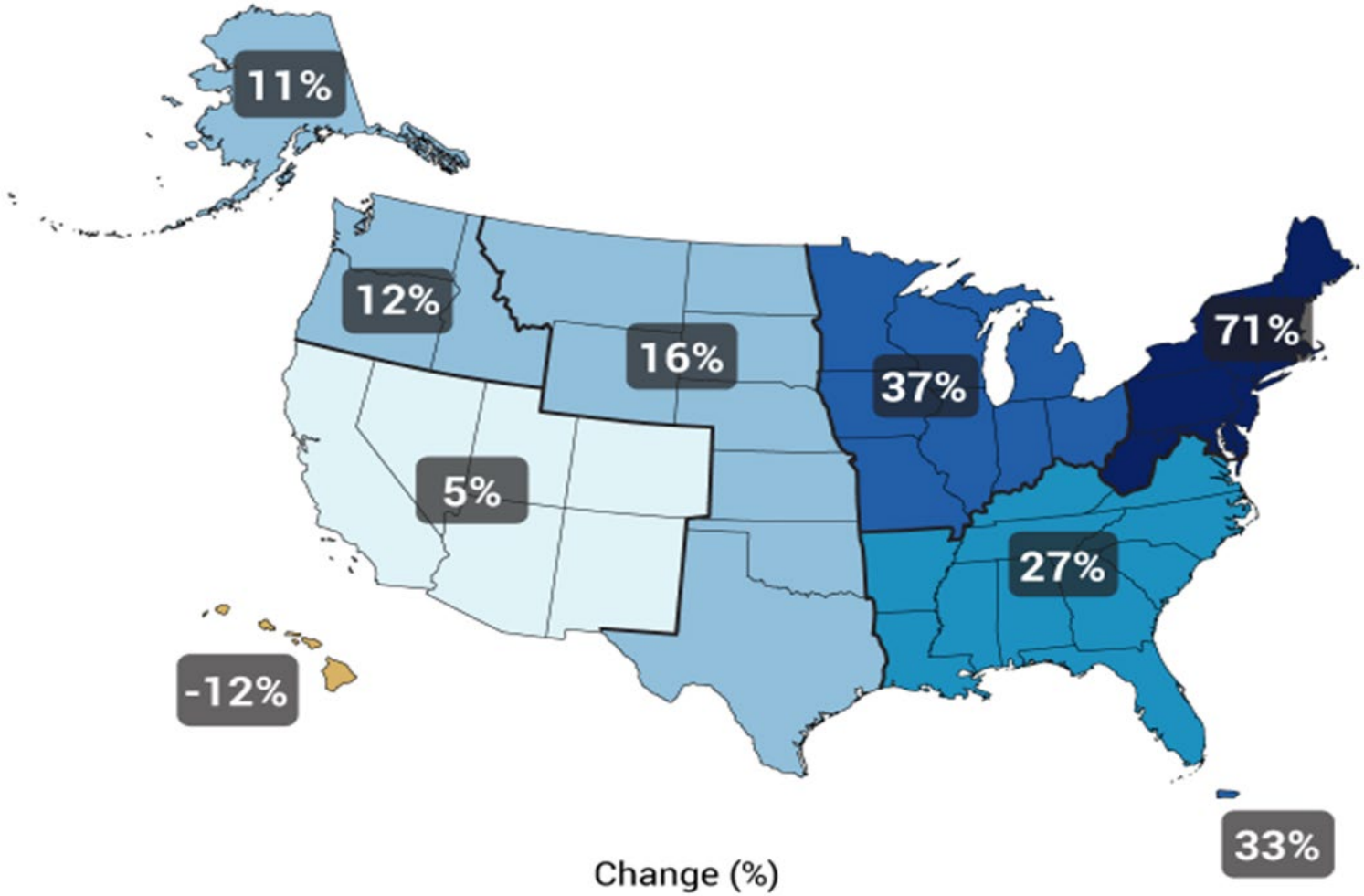
Observed: Percent Increase in Extreme Precipitation (1958-2012)



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Regional Impacts

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Regional Impacts: Agriculture

Increased Rainfall/Extreme Precipitation

- + Erosion
- + Ponding
- + Crop Loss
- Delayed Planting/Harvest

Increased Temperature

- + Winter temps
- + "False" Springs
- + runoff/erosion in winter
- + Pests/invasive species

Sea level Rise

- + Soil and well salinization
- + Farm/forest land and loss

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Regional Impacts: Urban Communities

Flooding

- Sea Level Rise
- Saltwater Intrusion
- Storm Surge
- Stormwater Management

High Temperatures

- Heat islands
- Increased evapotranspiration
- Heat Exposure

Energy Issues

- Energy disturbance
- Increased utility costs

From: https://nca2018.globalchange.gov/chapter/11/

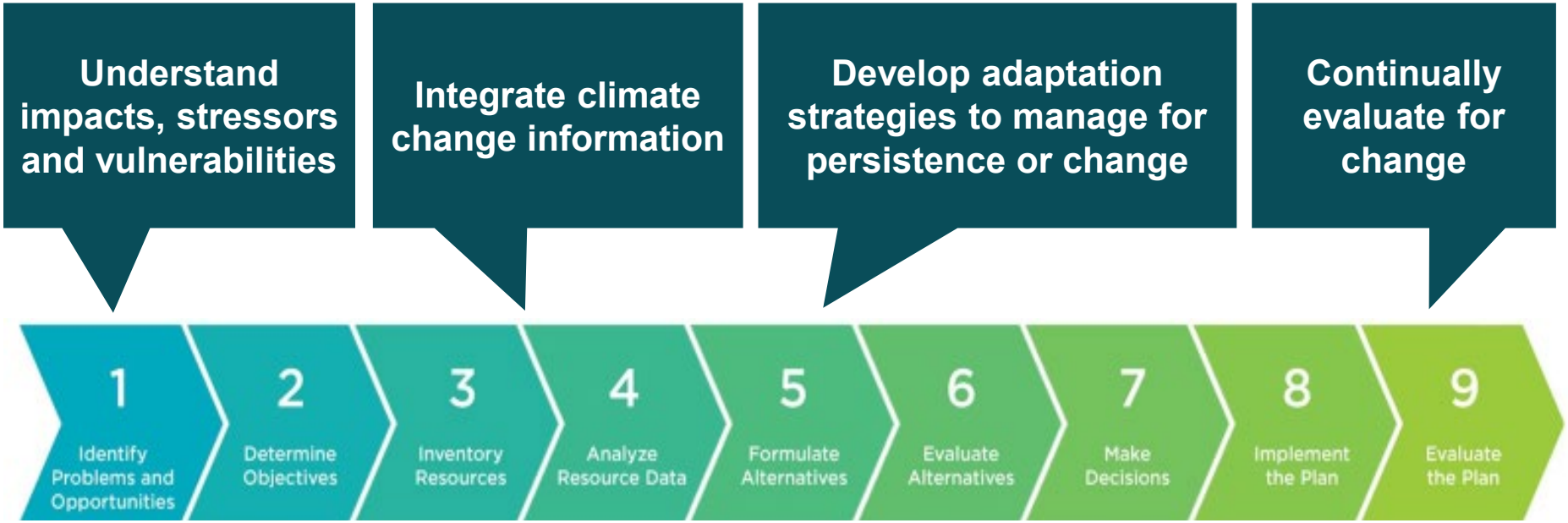
Regional Impacts: Vulnerable Communities

Exacerbate

- Challenges to quality of life
- Social Inequality
- Aging and deteriorating infrastructure
- Stressed urban ecosystems
- Food Insecurity

From: https://nca2018.globalchange.gov/chapter/11/

From Impacts to Adaptation/Mitigation through Conservation Planning



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Resources to Learn More

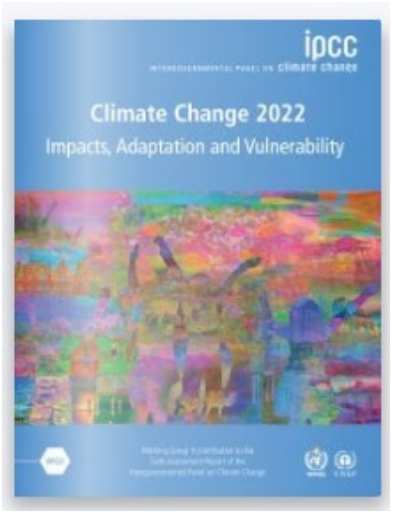
[USDA Climate Hubs]

[Climate Quick Reference Guide]

[NOAA State Summaries]

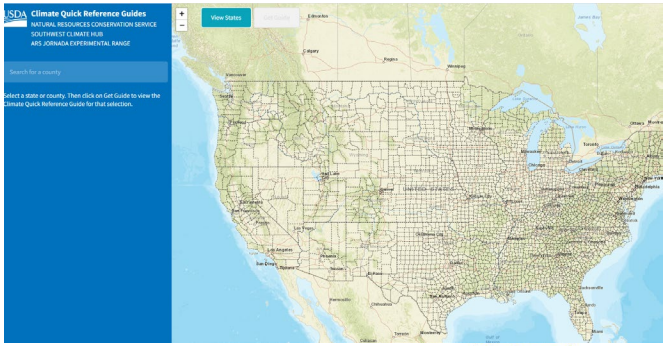
[US Fourth National Climate Assessment]

[Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6)]



[Northeast Climate Hub]

[Northern Forests Climate Hub]



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Discussion: Connecting to our Work

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THANK YOU!!

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