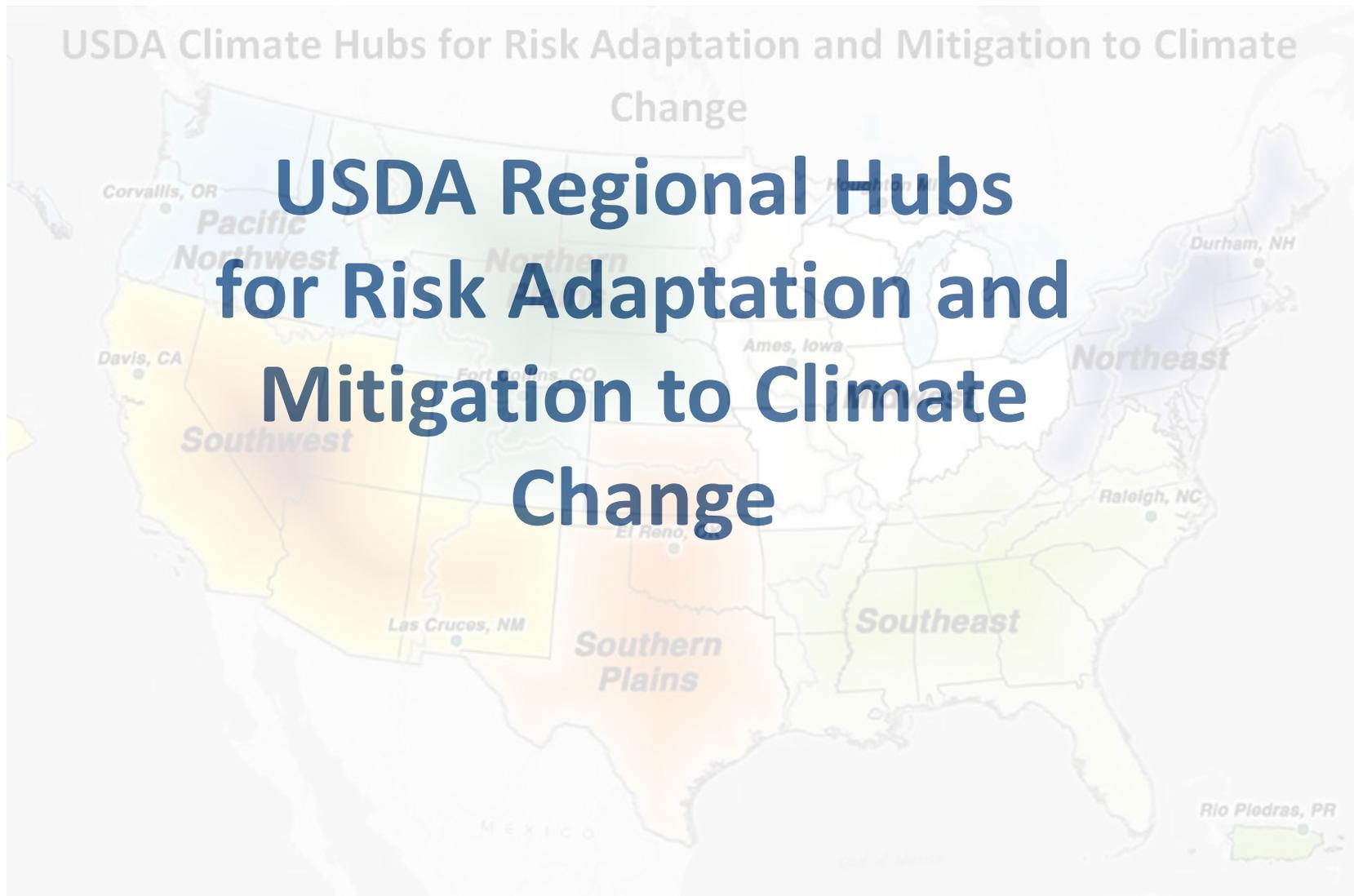


USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change

# USDA Regional Hubs for Risk Adaptation and Mitigation to Climate Change





**Vision:** Agricultural production and natural resources maintained and strengthened under increasing climate variability and environmental change

**Mission:** To develop and deliver science-based, region-specific information and technologies to agricultural and natural resource managers that enable climate-smart decision-making and provide assistance to enable land managers to implement those decisions.



## **USDA Regional Climate Hubs will provide:**

- **Technical Support**
- **Assessments and Forecasts**
- **Outreach and Education**

# Conceptual Framework for a USDA Regional Hub

## Science and Technology providers:

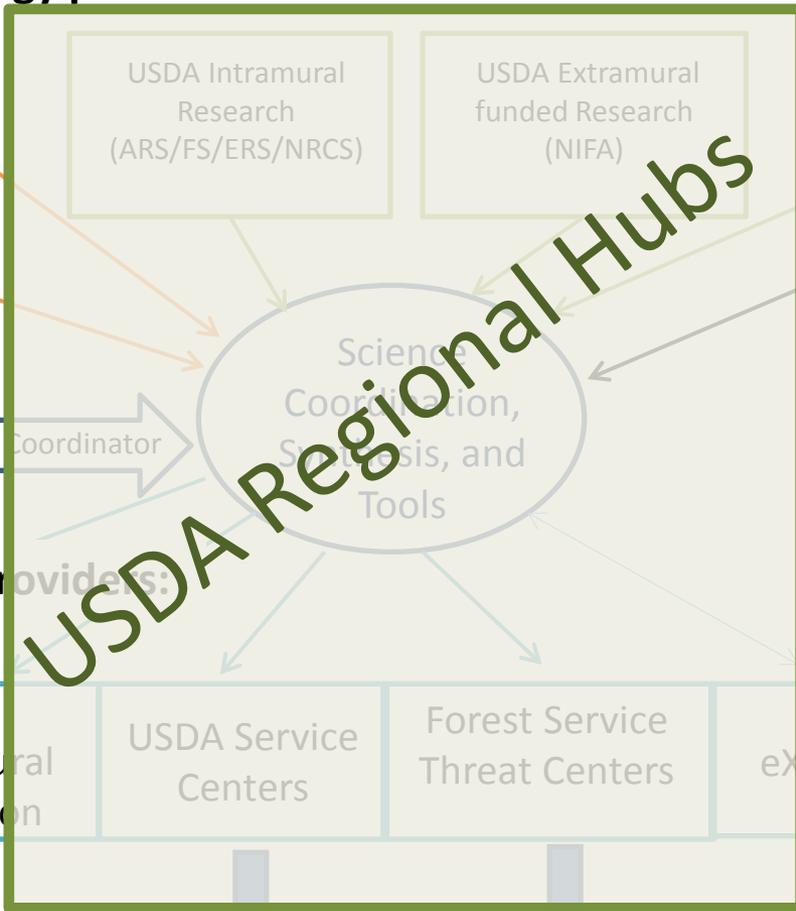
Federal Partners

NOAA RISA  
USGS CSC  
etc

Non-Federal Partners

Agricultural  
Experiment  
Stations

Many others



Links with other Hubs & National Coordinator

## Technology Transfer providers:

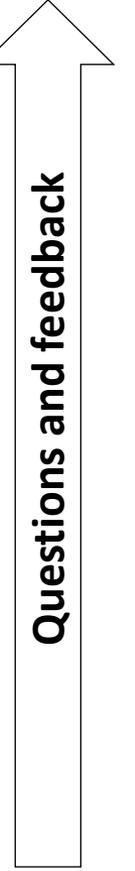
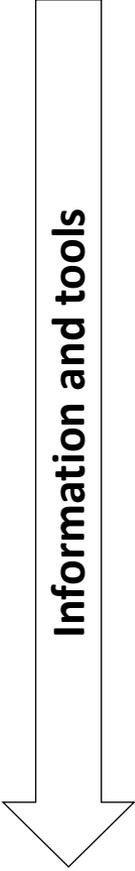
Others

State Agricultural Extension

USDA Service Centers

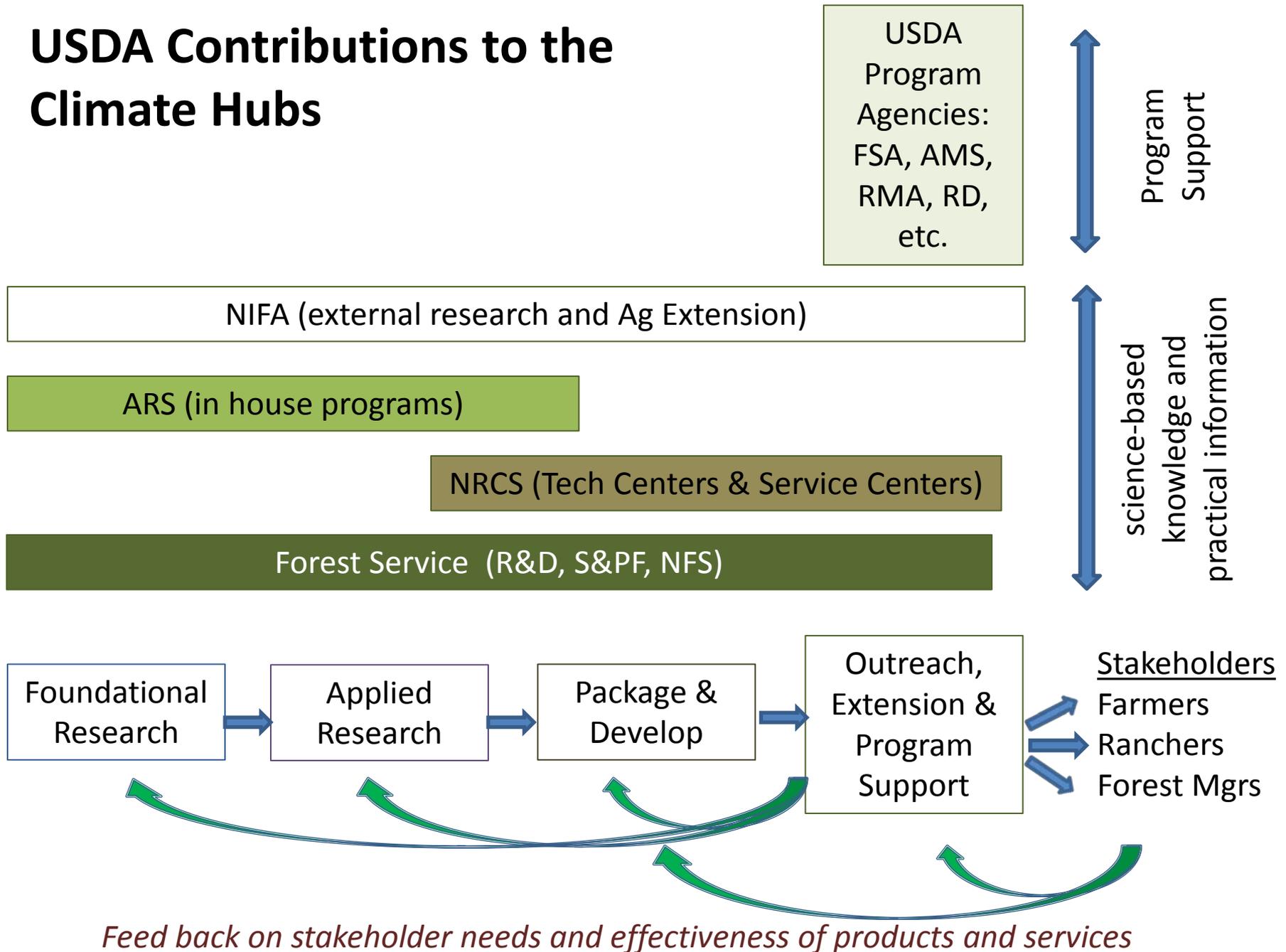
Forest Service Threat Centers

extension



Stakeholders and Stakeholder group: Farmers / Ranchers / Forest Managers / Tribes / States / Feds / LCCs / Others

# USDA Contributions to the Climate Hubs





June 2013

- Hubs announced

June-August 2013

- Internal, competitive process among USDA facilities to serve as a Hub

August 21, 2013

- Hub proposals due

September 2013-  
January 2014

- Proposals reviewed by climate change experts (USDA, NOAA, CEQ, DOI)

February 5, 2014

- Hub locations announced



## Proposals showed overwhelming support:

- **90** Universities
- **14** State Government Departments
- **5** Tribal Communities
- **3** Private Companies
- **34** NGO's
- **58** Partnerships with federal agencies, local offices, or federal initiatives



**Over 200  
letters of  
support**



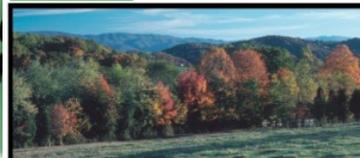
# Revised USDA Climate Hub Regions



## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change



**USDA Regional Climate Hubs:**  
Managing your risk in a changing climate.



## Climate Risks in the Northeast





# USDA Regional Climate Hubs: Managing your risk in a changing climate.



## Climate Risks in the Northeast

- Higher temperatures
- Reduced crop yields and milk production from heat stress
- Extreme precipitation events
- Longer growing season
- Coastal Flooding

The Northeast Climate Hub Team  
Leader: David Hollinger, FS Durham NH

Peter Kleinman, ARS  
Darren Hickman, NRCS  
Leon Kochian, ARS  
Lindsey Rustad, FS



# Revised USDA Climate Hub Regions



## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change



 **USDA Regional Climate Hubs:**  
Managing your risk in a changing climate.



## Climate Risks in the Southeast





# USDA Regional Climate Hubs: Managing your risk in a changing climate.



## Climate Risks in the Southeast

- Sea-Level Rise
- Drought
- Temperature increase
- Spread of Nonnative Plants, Weeds, Pests
- Increased insects and pathogens

The Southeast Climate Hub Team  
Leader: Steve McNulty, FS Raleigh, NC

Darren Hickman, NRCS  
David Marshall, ARS

Caribbean Sub-Hub  
Leader: William Gould, FS Piedras, PR



# Revised USDA Climate Hub Regions



## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change

Corvallis, OR

**Pacific Northwest**

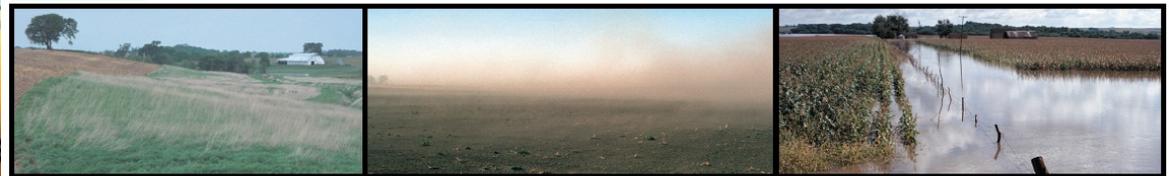
Houghton MI

Davis, CA

**Southwest**



**USDA Regional Climate Hubs:  
Managing your risk in a changing climate.**



## Climate Risks in the Midwest

Las Cruces, NM

**Southern Plains**

**Southeast**

Rio Piedras, PR

MEXICO

Gulf of Mexico



# USDA Regional Climate Hubs: Managing your risk in a changing climate.



## Climate Risks in the Midwest

- Extreme Rainfall/Flooding
- Increased heat events
- Growing seasons have lengthened by almost two weeks since 1950
- Wetter springs/fewer workable field days

The Midwest Climate Hub Team  
Leader: Jerry Hatfield, ARS Ames, IA

John Prueger, ARS  
Thomas Sauer, ARS  
Jon Hempel, NRCS  
Norm Fausey, FS

Lake States Sub Hub:  
Leader: Christopher Swanston, FS, MI



# Revised USDA Climate Hub Regions

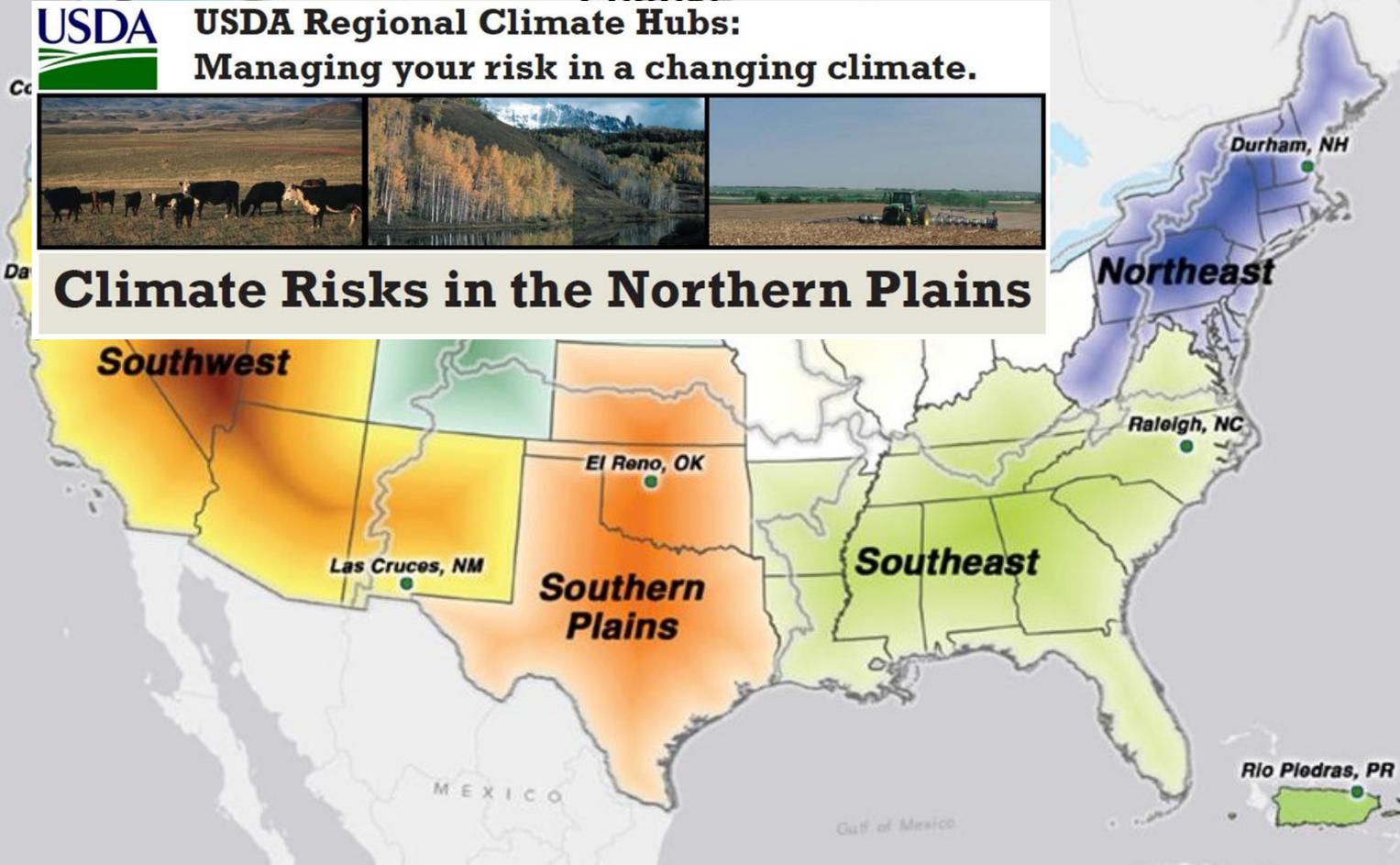


## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change

**USDA** USDA Regional Climate Hubs:  
Managing your risk in a changing climate.



**Climate Risks in the Northern Plains**





# USDA Regional Climate Hubs: Managing your risk in a changing climate.



## Climate Risks in the Northern Plains

- New crops possible
- Increased competition for water
- Changed crop growth cycles resulting from warmer winters
- Rising temperatures /lengthen the growing season
- Increase in precipitation extremes

The Northern Plains Climate Hub Team  
Leader: Justin Derner, ARS Ft. Collins, CO

Linda Joyce, FS

Rafael Guerrero, NRCS



# Revised USDA Climate Hub Regions



## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change



**USDA Regional Climate Hubs:**  
Managing your risk in a changing climate.



## Climate Risks in the Southern Plains

Rio Piedras, PR





# USDA Regional Climate Hubs: Managing your risk in a changing climate.



Photo courtesy of Cimmaron  
County Conservation District

## Climate Risks in the Southern Plains

- Increased drought
- Increased temperature
- Possible northward shift in crop production,
- Wildfire
- Range quality

The Southern Plains Climate Hub Team  
Leader: Jeanne Schneider, ARS El Reno,  
OK

Keith Admire, NRCS  
Jan Engert, FS



# Revised USDA Climate Hub Regions



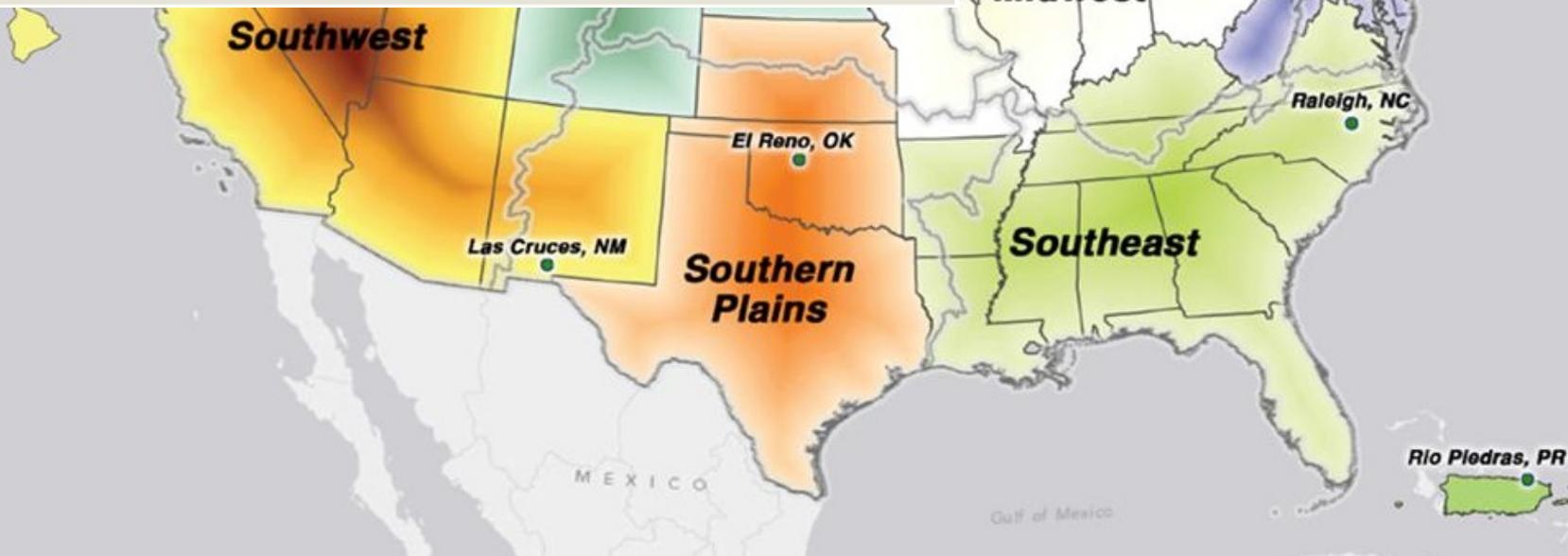
## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate



**USDA Regional Climate Hubs:  
Managing your risk in a changing climate.**



### Climate Risks in the Northwest





# USDA Regional Climate Hubs: Managing your risk in a changing climate.



## Climate Risks in the Northwest

- Reduced Snowpack
- Increases in extreme precipitation events
- Longer growing seasons
- Warming could adversely affect wine, apples, and other tree crops with chilling requirements

The Northwest Climate Hub Team  
Leader: Bea Van Horne, FS, Corvallis OR

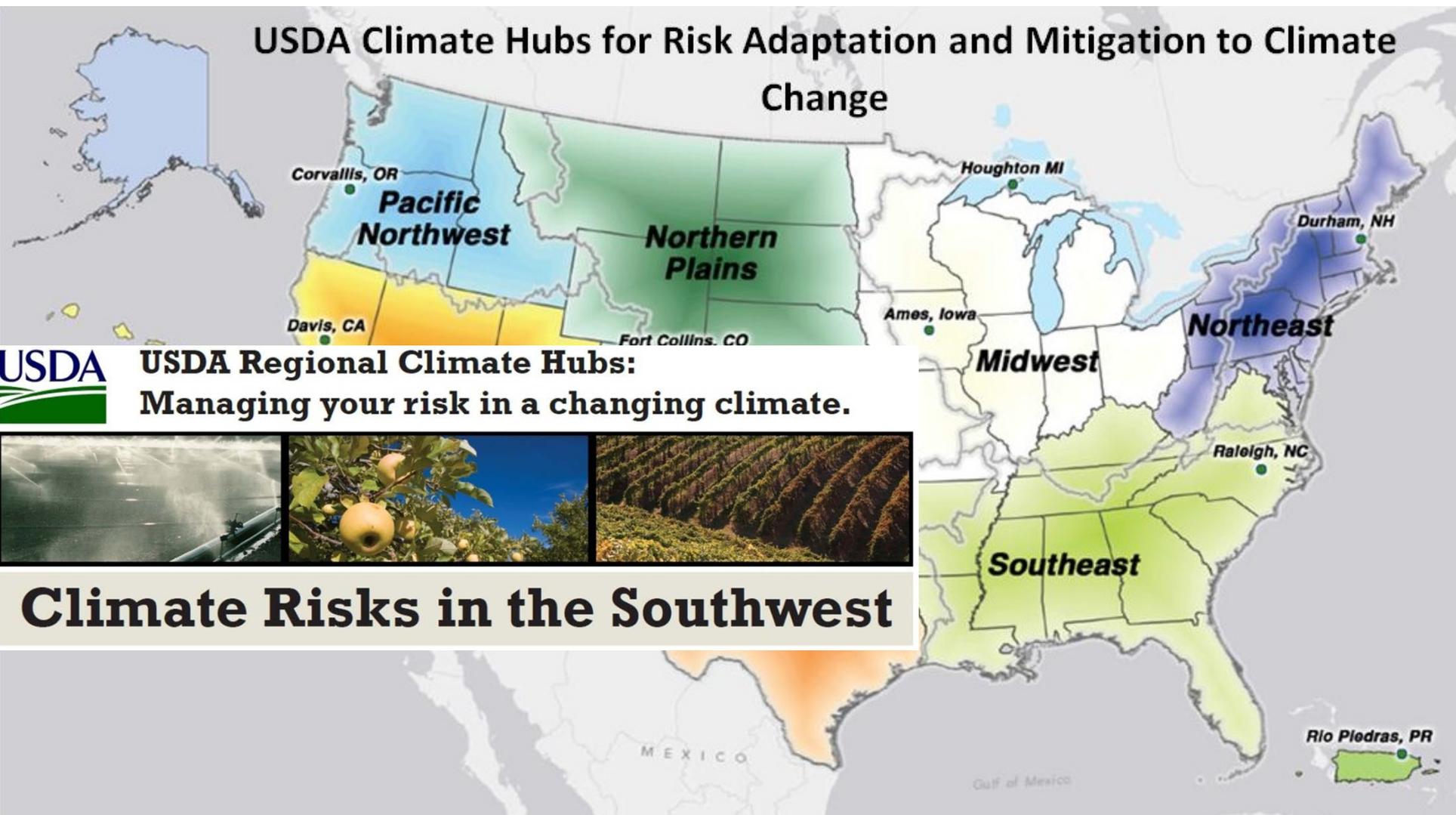
Michael Strobel, NRCS  
Stuart Hartegee, ARS



# Revised USDA Climate Hub Regions



## USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change



**USDA Regional Climate Hubs:**  
Managing your risk in a changing climate.



## Climate Risks in the Southwest



# USDA Regional Climate Hubs: Managing your risk in a changing climate.



## Climate Risks in the Southwest

- Greater uncertainty in water supply
- Increased probability of heat stress to crops
- Fire risk
- Changes in plant diseases, pests, insects, and weeds
- Specialty crop distributions

The Southwest Climate Hub Team  
Leader: Kris Havstad, ARS

Al Rango, ARS

Shawn McKinney, NRCS

Specialty Crop and Forestry Sub Hub:

Leader: Daniel Kluepfel, ARS, CA

Peter Stine, FS, CA



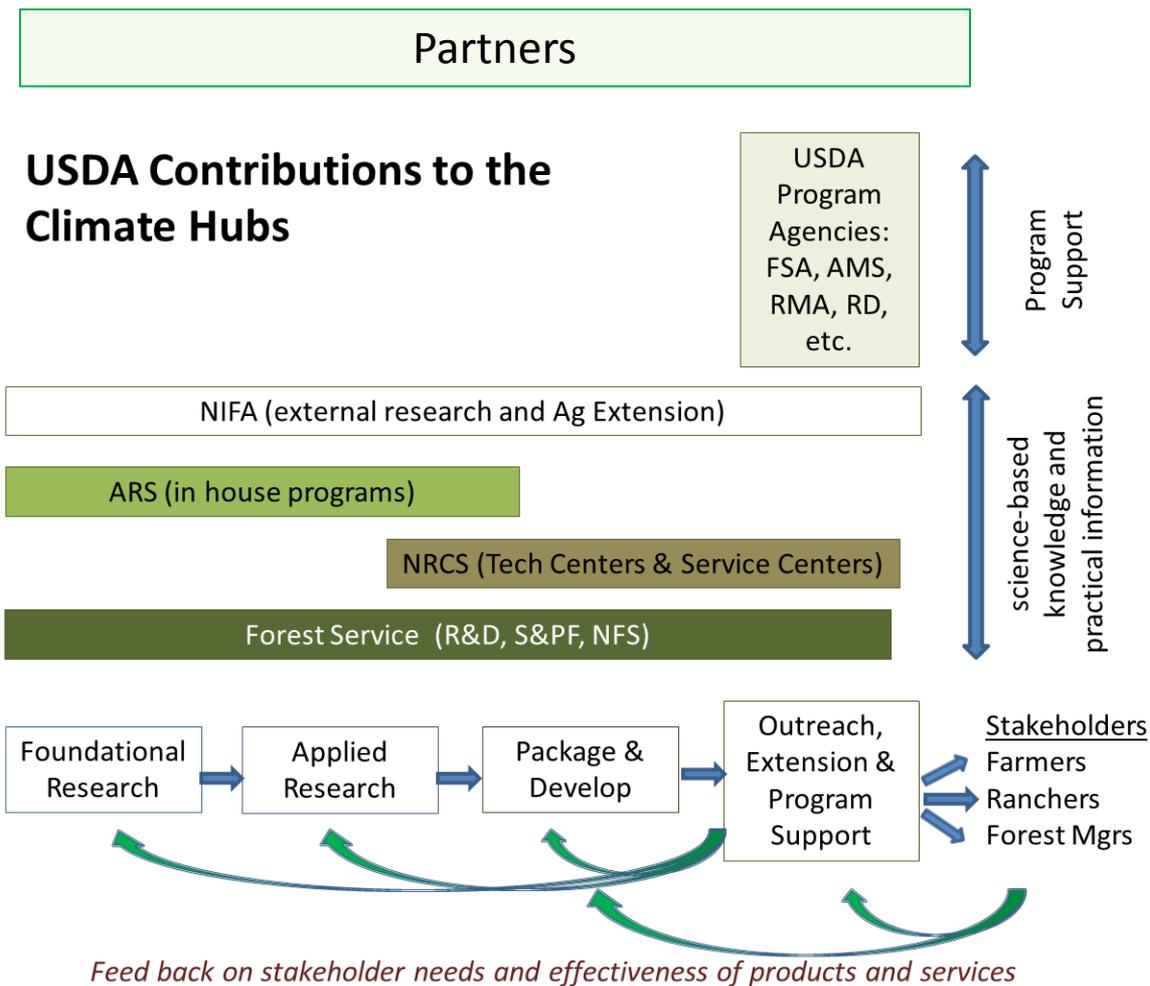
## Next Steps



- Assess regional vulnerabilities to ID most pressing issues

- What is currently most vulnerable to direct and indirect impacts of climate change
- What may be vulnerable in the near future

- Establish work plans





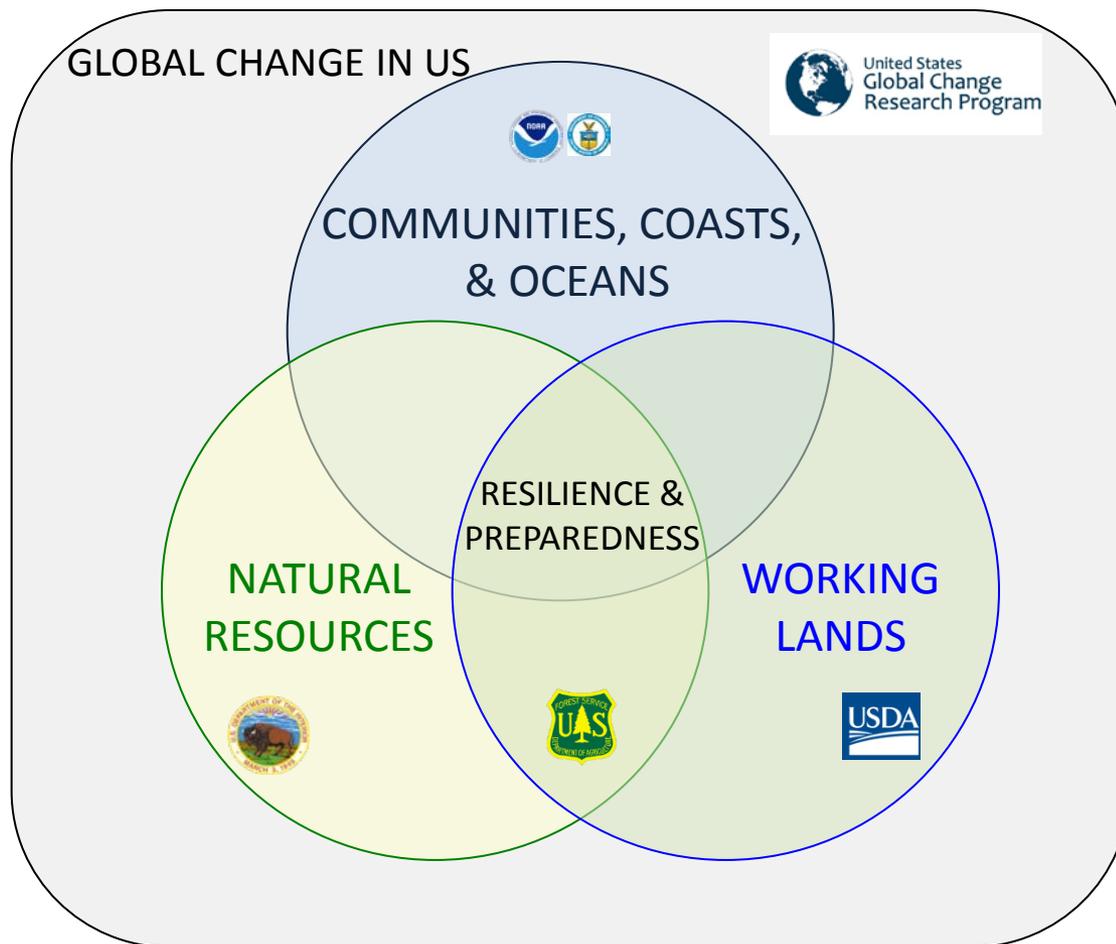
## Next Steps



- Work with **partners** and stakeholders to access needs and capabilities

- State Agricultural Experiment Stations
- State Cooperative Extension Programs
- Department of Interior USGS Climate Science Centers
- DoI FWS Landscape Conservation Cooperatives
- NOAA Regional Integrated Sciences and Assessments Program (RISAs)

- Work with **partners** and stakeholders to access needs and capabilities



- Establish web presence

**USDA** OFFICE OF THE CHIEF ECONOMIST  
United States Department of Agriculture

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**USDA Regional Climate Hubs**

**USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change**

Click on a region to learn more about the USDA Climate Hub in your area.

**What are USDA's Regional Climate Hubs?**

USDA's regional hubs will deliver information to farmers, ranchers and forest landowners to help them adapt to climate change and weather variability. The Hubs will build capacity within USDA to provide information and guidance on technologies and risk management practices at regional and local scales. To learn about how climate change and weather variability are affecting agriculture in your area, click on a region of the map above. For more information on the Climate Hubs, check out the following resources:

- [USDA Regional Hubs for Risk Adaptation and Mitigation to Climate Change Factsheet](#)
- [Climate Hubs Charter](#)
- To learn more about USDA's approaches to climate challenges, visit the [USDA Climate Solutions](#) page.

**Climate Hubs in the News**

- [Press Release: Secretary Vilsack Announces Climate Hubs Locations \(February 5, 2014\)](#)
- [Press Release: Secretary Vilsack Outlines Vision for Agricultural Solutions to Environmental Challenges \(June 5, 2013\)](#)
- [Remarks as Prepared: Agriculture Secretary Outlines Vision for Agricultural Solutions to Environmental Challenges in Speech to the National Press Club \(June 5, 2013\)](#)

- Consistency over 7 Regional Climate Hubs
- Coordination with other government web sites
- “One stop shopping”
- Legacy web sites