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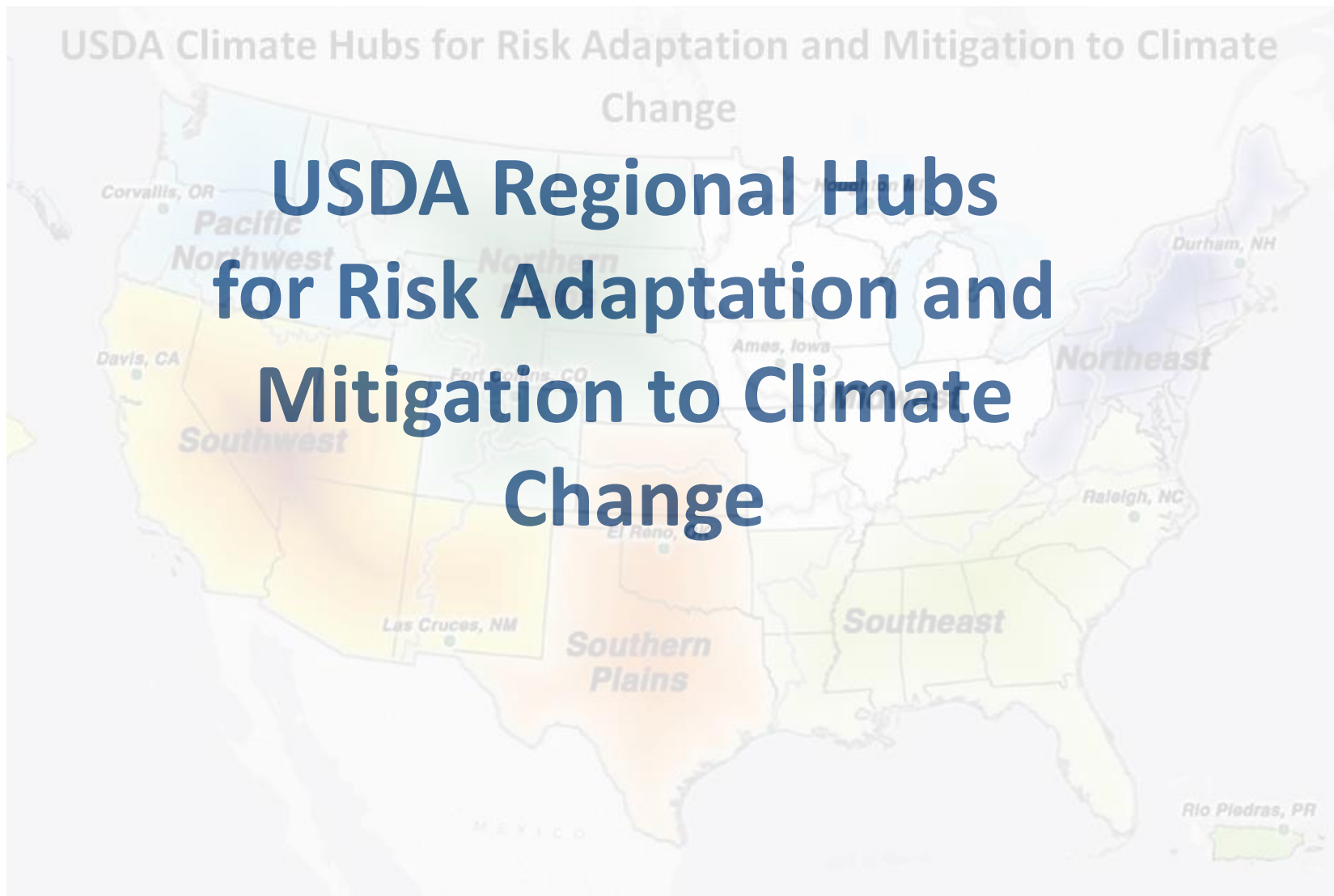
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USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change

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:

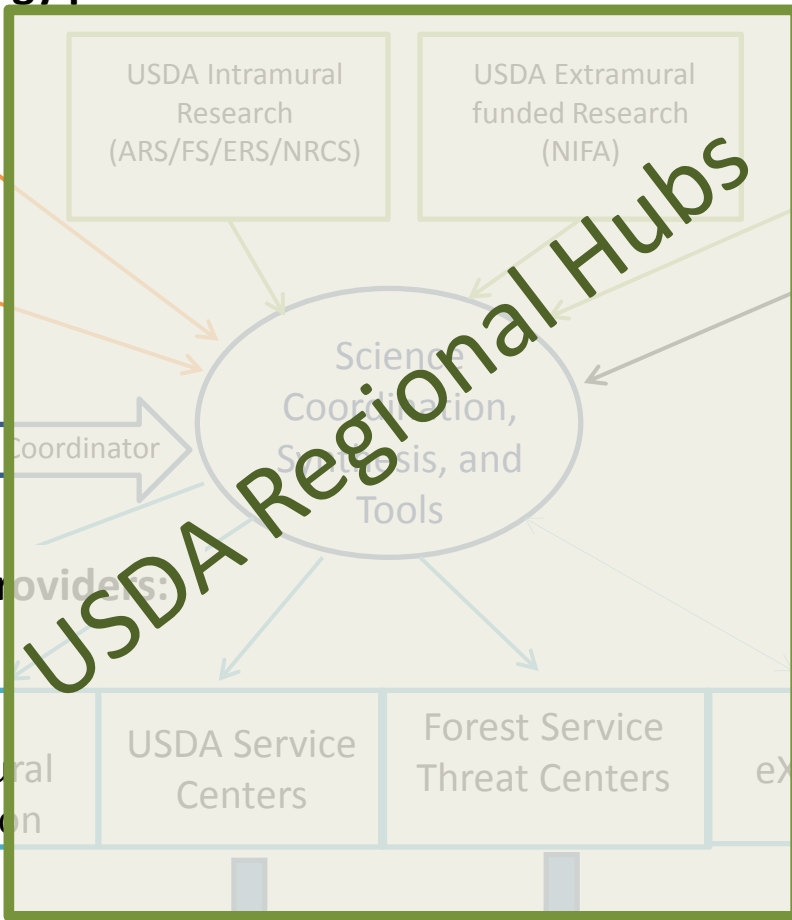
Federal Partners

NOAA RISA
USGS CSC
etc

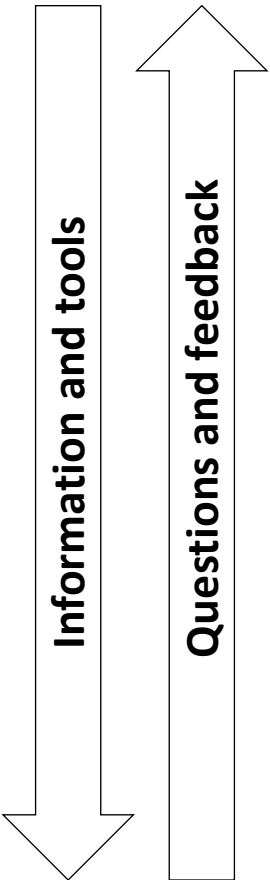
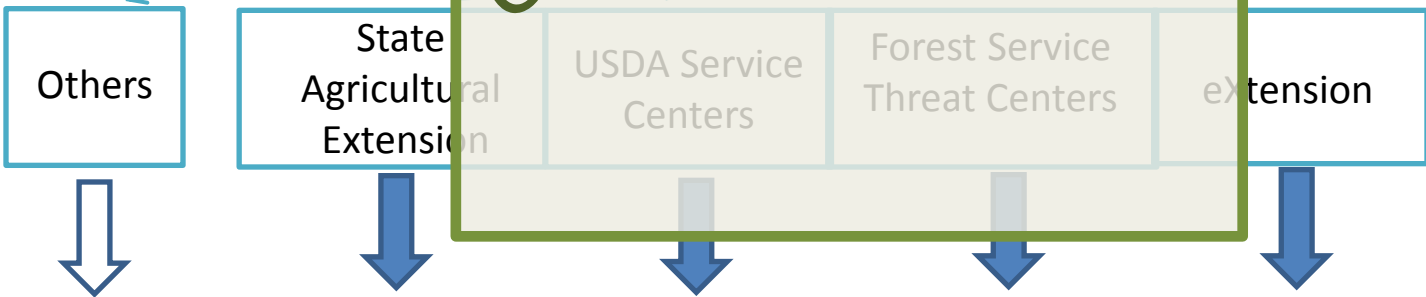
Non-Federal Partners

Agricultural
Experiment
Stations

Many others

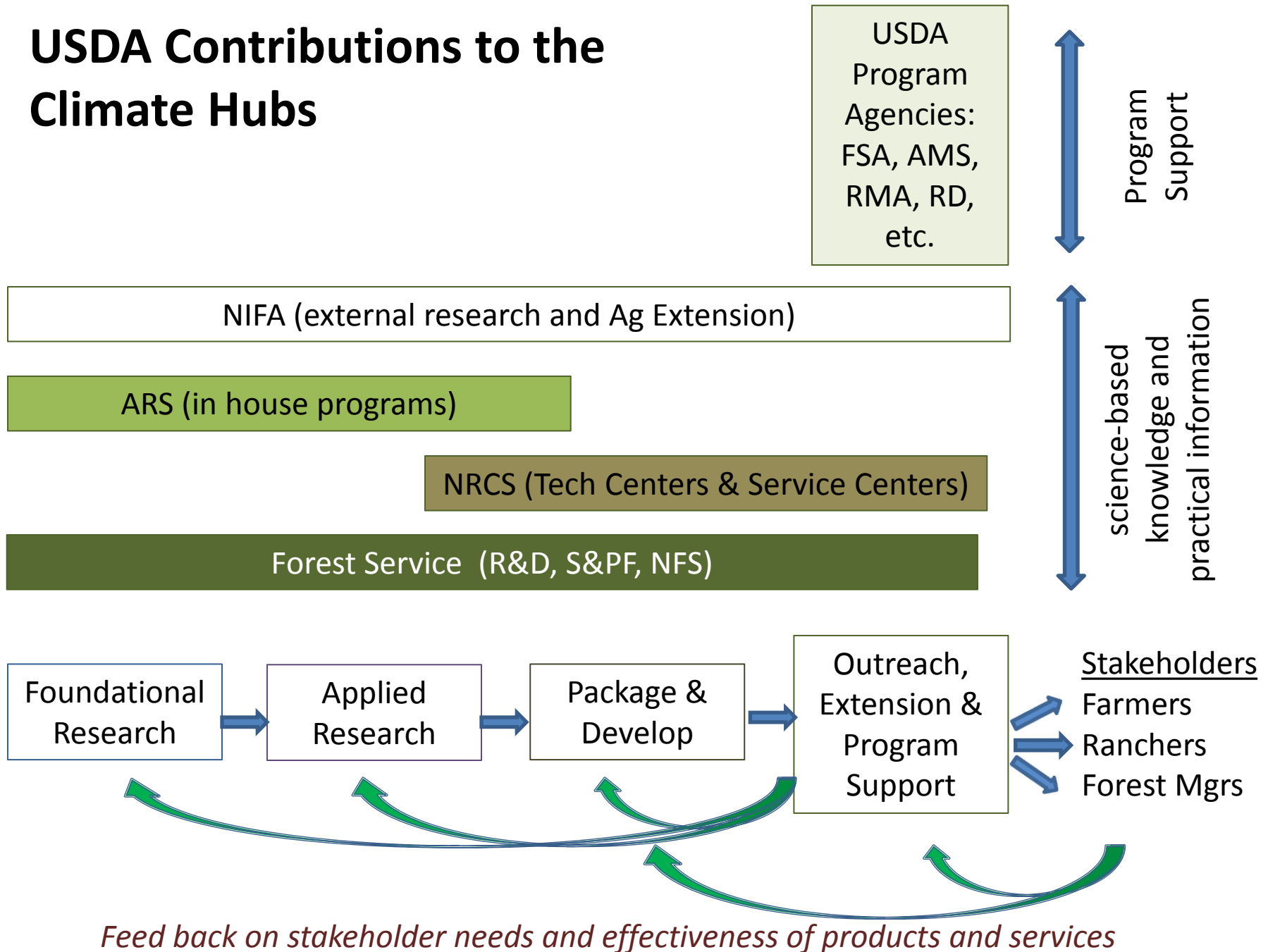


Technology Transfer providers:



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



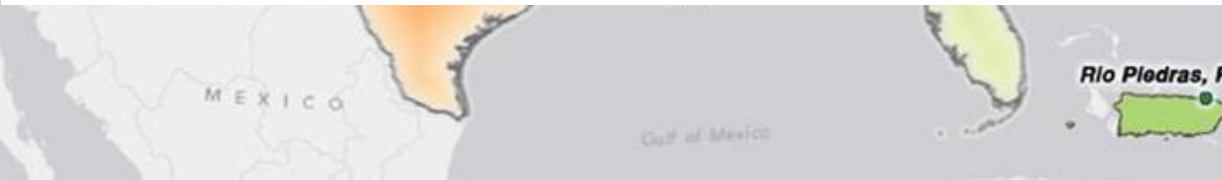
USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change



 **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

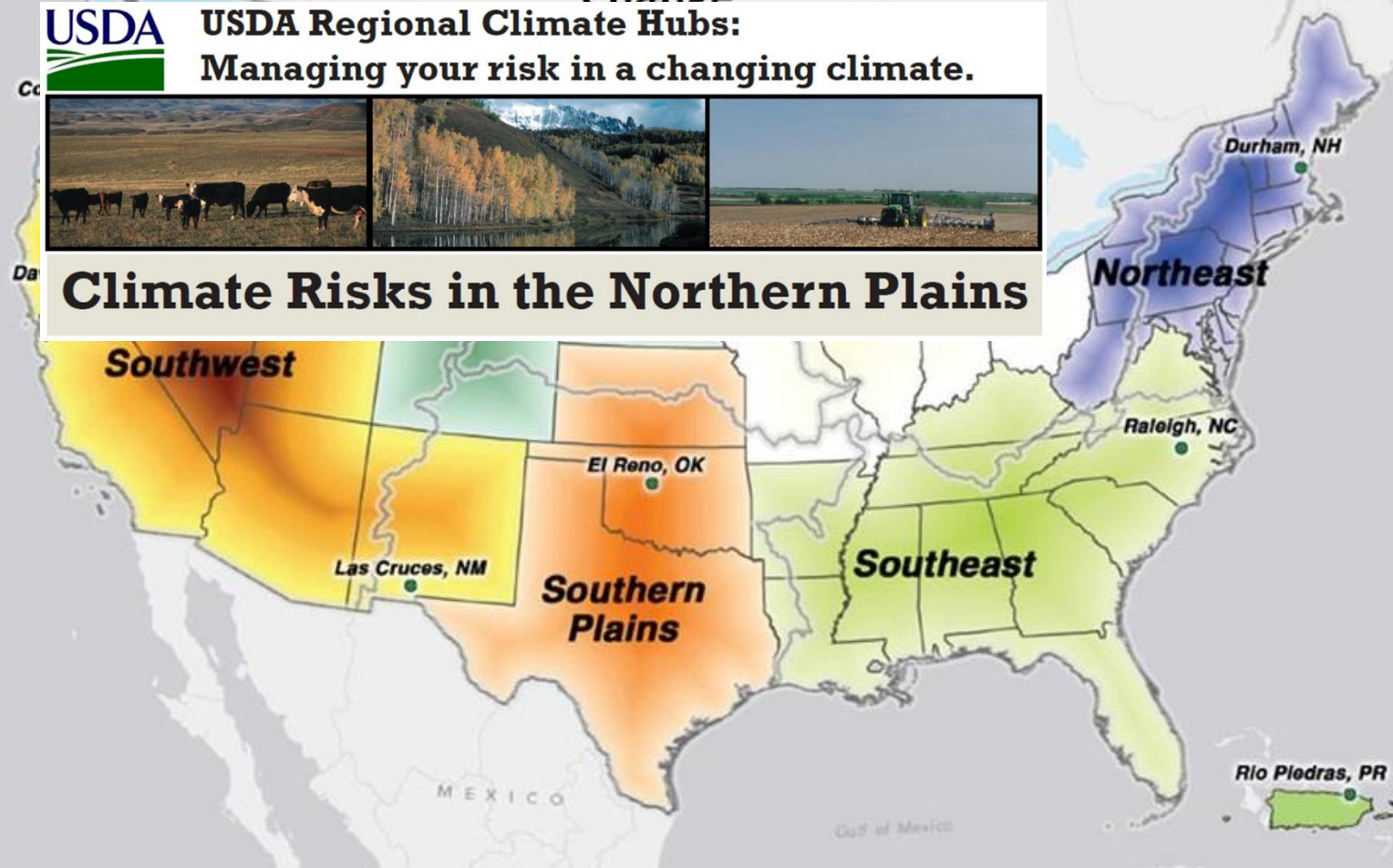


USDA Climate Hubs for Risk Adaptation and Mitigation to Climate Change

 **USDA 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



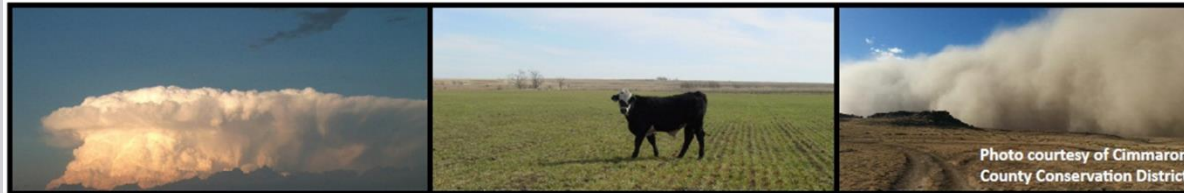
Revised USDA Climate Hub Regions



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.



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



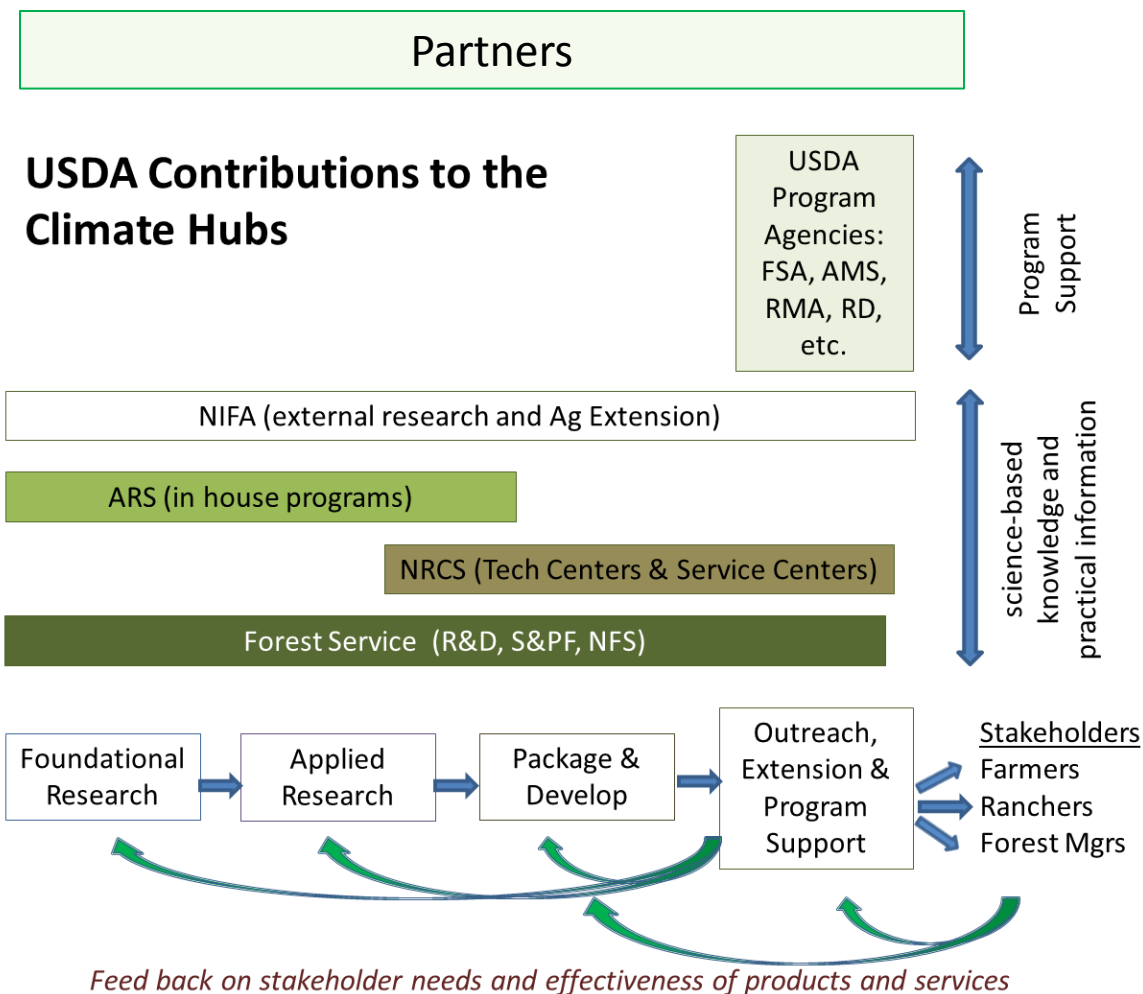
Next Steps



- 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





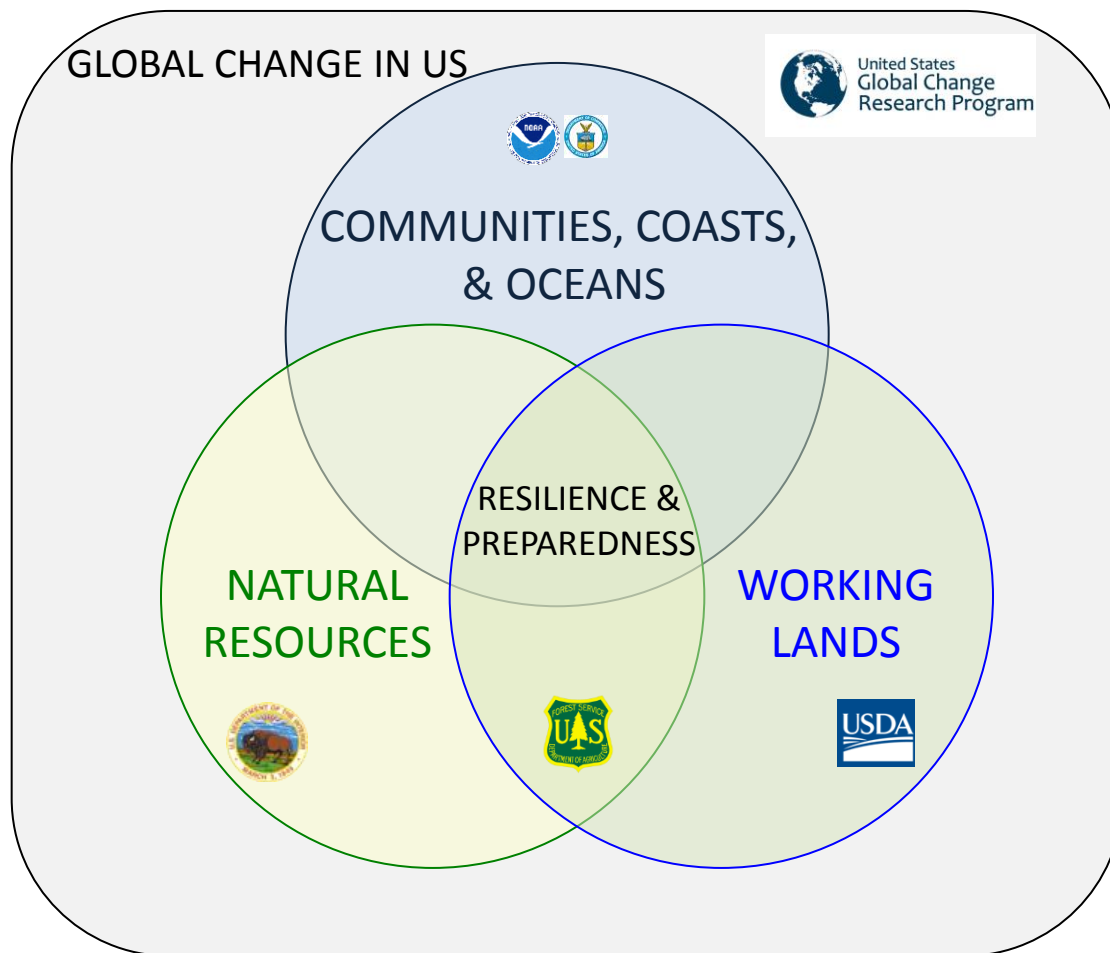
Next Steps



- 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

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