

13th Annual Climate Prediction Applications Science Workshop

24 - 26 March 2015
Las Cruces, NM

Wooton Hall, Room 105 (2995 Knox St)

Tuesday, March 24

Agriculture and Rangeland

7:30 – 8:30 Registration

8:30 – 8:45 **Conference Welcome**

Opening Remarks

David DuBois, New Mexico State Climatologist, NMSU Dept. Plant and Environmental Sciences

Albert Rango, Director of USDA Southwest Regional Climate Hub

Fiona Horsfall, Chief of Climate Services Division, NOAA National Weather Service

8:45 – 10:15 **Climate Services Role in Food Resilience Challenges**

Moderator: Fiona Horsfall, NOAA National Weather Service

Introducing the Climate Resilience Toolkit & Ideating It's Evolution to Serve Farmers, Ranchers, and Water Resource Managers

David Herring, Director of Communications and Education, Climate Program Office, NOAA

The Climate Resilience Toolkit and the Water Utility and Planning Communities

Nancy Beller-Simms, Sectoral Applications Research Program, Climate Program Office, NOAA

Climate Science Perspectives from the Rural Southwest

*Michael Crimmins, Associate Professor & Extension Specialist - Climate Science
Department of Soil, Water, & Environmental Science, The University of Arizona*

AgroClimate: Lessons Learned Developing Tools for the Southeast USA

Clyde Fraise, University of Florida

CPASW Ideation Site Demo

David Herring, NOAA Climate Program Office

10:15 – 10:45 **Break**

10:45 – 12:00 **Session 1: Climate Change Issues**

Moderator: David DuBois, NMSU

USDA Southwest Regional Hub for Climate Change

Albert Rango, USDA Southwest Regional Climate Hub

The Relative Importance of Climate in Agricultural Decisions about Risk Management and Adaptation

Tonya Haigh, National Drought Mitigation Center, University of Nebraska - Lincoln

Vulnerabilities and Adaptive Capacities of Selected Southwestern Crops to Climate Change

Emile Elias, Jornada Experimental Range, USDA ARS

Climate Change, Diversified Agriculture and Adaptive Capacity in Hawaii

Caitriana Steele, Jornada Experimental Range, NMSU

Food for Thought: Strategies for Sustainable Agricultural Production in the Columbia River Basin in an Altered Future

Kirti Rajagopalan, Center for Sustaining Agriculture & Natural Resources, Washington State University

12:00 – 1:15

Lunch (provided)

1:15 – 2:45

Session 2: Preparedness for Drought and Climate Variability

Moderator: Albert Rango, USDA SW Regional Climate Hub

Exploring Summer Season Precipitation Monitoring Strategies for Arizona Ranchers and Range Managers to Support Enhanced Drought Planning and Response

Michael Crimmins, University of Arizona

Vulnerabilities and Adaptive Capacities of Southwest Rangeland Livestock Production to Climate Change

Kris Havstad, Jornada Experimental Range, USDA ARS

Agro-Climatic Prediction System for Better Decision Making in Latin America

Diana Carolina Giraldo Mendez, International Center for Tropical Agriculture

AgroClimate Mobile Apps for Decision Making in Agriculture

Clyde Fraisse, University of Florida

Crop Water Use (Irrigation) Tool

Gene Stevens, University of Missouri

Ubiquitous Approach for Disseminating Regional Soil-Plant-Water Balance Information for Decision Support in Agriculture

Rémi Cousin, International Research Institute for Climate And Society, Earth Institute, Columbia University

2:45 – 3:15

Break

3:15 – 3:45

Session 3 (Part 1): NOAA New Products and Services

Moderator: Marina Timofeyeva, NOAA NWS Climate Services Division

Climate Hazards Impact Discussion - Experimental (CHIDE)

John Eise, NOAA National Weather Service Central Region Headquarters

Heat waves over the US and the Madden-Julian Oscillation: Prospects for Subseasonal Excessive Heat Outlooks

Augustin Vintzileos, University of Maryland - ESSIC

3:45 – 5:00

Session 3 (Part 2): Climate Prediction Center – New Products and Services (Facilitated Discussion)

Facilitators:

Mike Halpert, Deputy Director, Climate Prediction Center

Marina Timofeyeva, NOAA NWS Climate Services Division

5:00 – 5:15

Break

5:15 – 6:30

Reception and Poster Session

Please see list of posters

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Wednesday, March 25

Drought and Water Resources

7:30 – 8:30 Registration

8:30 – 9:30 **Day 1 Review & Discussion**

David Herring, NOAA Climate Program Office

9:30 – 10:15 **Session 1: Preparedness**

Moderator: Mike Halpert, NOAA National Weather Service

Management of Climate Risk to Crop Production and Marketing

Elwynn Taylor, Iowa State University

Extreme Climate Conditions Past and Future: Implications for Food Security and Water Resources

Kenneth Kunkel, North Carolina State University, NCDC

NIDIS Upper Colorado River Basin Drought Early Warning System

Zach Schwalbe, Colorado State University

10:15 – 10:45 **Break**

10:45 – 11:30 **Session 2: Building Services Capacity**

Moderator: John Eise, NOAA National Weather Service

Facilitating the Use of Drought Early Warning Information through Interactions with Stakeholders

Jason Otkin, University of Wisconsin - Madison

Building Capacity for Climate Monitoring and Drought Management on the Wind River Indian Reservation

Crystal Stiles, University of Nebraska - Lincoln

Project Operation Planning in Response to Drought

Bryan Baker, USACE ERDC-CRREL-NH

11:30 – 1:00 **Lunch (provided)**

1:00 – 2:30 **Session 3: Regional Aspects**

Moderator: Andrea Bair, NOAA National Weather Service

Some Aspects of Regional Dust Storms and Drought Episodes Including their Synoptic Climatology, Impacts and Forecast Methodology in Southern New Mexico and far West Texas

David Novlan, NOAA National Weather Service

Determining Climatological Patterns of Dryness and Drought at a Regional to Local Scale Across the Carolinas

Charles Konrad, University of North Carolina

Strengthening Adaptive Capacity at a Landscape Scale: Developing Climate Adaptation Actions on the North Rim Ranch in Northern Arizona

Cerissa Hoglander, Grand Canyon Trust

The Role of Climate and Water Resources Data in Societal Decisions within the Klamath Basin of Oregon and California

Mark Deutschman, Houston Engineering, Inc.

Seasonal Streamflow Forecasts Affected by Multi-decadal Climate Variability and Change

David Gutzler, University of New Mexico

What Does Drought Mean in Alaska?

Richard Thoman, NOAA National Weather Service Alaska Region Headquarters

2:30 – 3:00

Break

3:00 – 3:45

Session 4: Emerging Issues

Moderator: Caitlin Simpson, NOAA CPO

The Water Theme of the Climate Data Initiative: Leveraging Federal Water Data Holdings

Emily Read, US Geological Survey (presented by Nancy Beller-Simms, NOAA Climate Program Office)

Results of the American Meteorological Society's (AMS) Board on Enterprise Planning (BEP) Integrated Water Resources (IWR) Annual Partnership Topic (APT)

Daniel Matusiewicz, NOAA National Weather Service

The Synoptic Climatology of South Central and Southwestern New Mexico and far Western Texas Flash Floods

Joseph Rogash, NOAA National Weather Service

3:45 – 5:00

Session 5: Panel Discussion "Managing Drought in the Southern Plains: Regional User Engagement Success and Challenges"

Moderators: David Brown, NOAA NESDIS/National Centers for Environmental Information

Victor Murphy (NWS) - "Engaging Users Via Operational Services"

David DuBois (NMSU) - "Engaging Users Via Stakeholder Forums"

John Longworth (New Mexico Office of the State Engineer) - "Engaging Users Via State Drought Management Activities"

Gregg Garfin (UA/CLIMAS) - "Engaging Users in a Transboundary Setting"

5:30 – 7:30

Banquet Dinner: NM Farm and Ranch Heritage Museum, 4100 Dripping Springs Rd, Las Cruces, NM

"The Ubiquitous Universe -- Tomorrow's New Future"

Dr. Lowell Catlett, Dean of the College of Agricultural, Consumer and Environmental Sciences at NMSU



Lowell Catlett, Ph.D., a futurist with positive and upbeat predictions, is an enthralling and spellbinding presenter. His unique perspective of emerging technologies prepares us to anticipate coming changes, and to deal winning hands when the deck is being continually reshuffled.

He awakens our awareness to human potential even in changing times and shifting terrain. Lowell is a Regents Professor in Agricultural Economics and Agricultural Business and Extension Economics and the Dean of the College of Agricultural, Consumer and Environmental Sciences at New Mexico State University.

He is the author of numerous books and articles and won the university's highest award to a professor, the Westhafer Award. He works nationally and internationally with corporations and organizations doing futuristic planning concerning the impacts of technology on careers, lifestyles and the economy.

Lowell also works with the U.S. Departments of Agriculture, Labor, Interior, Defense, Education, Energy and the World Bank. Lowell has been a visiting professor or delivered invited presentations at over 50 universities including Harvard, MIT, Cornell and the University of Illinois.

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Thursday, March 26

Decision Support Services - Tools and Best Practices

7:30 – 8:30 Registration

8:30 – 9:15 **Day 2 Review & Discussion**

David Herring, NOAA Climate Program Office

9:15 – 10:00 **Session 1: Dealing with Data**

Moderator: Charles Konrad, University of North Carolina

The Use of New Datasets in the Monitoring of Drought Onset, Severity and Recovery in New Mexico

Deirdre Kann, NOAA National Weather Service WFO Albuquerque

The Climate Outcome Likelihood Application and the California Drought

Kelly Redmond & Nina Oakley, Western Regional Climate Center / Desert Research Institute

The "Dirty Thirties" Repeated: Decision Support Services Provided During a Modern Dust Bowl

Nicholas Fenner, NOAA National Weather Service WFO Amarillo

10:00 – 10:30 **Break**

10:30 – 11:30 **Session 2: Decision Support at Various Time/Space Scales**

Moderator: Jenna Meyers, NOAA National Weather Service

Climate Information for Disaster Management: Bridging the Weather and Climate Timescales

Andrea Bair, NOAA National Weather Service Western Region Headquarters

Enhancement of Local Climate Analysis Tool (LCAT) to Support Food Resilience

Annette Hollingshead, NOAA NWS Climate Prediction Center

Army Research Lab Meteorological Sensor Array Initiative

Robb Randall, Army Research Laboratory

Tailoring the Data Process to Regional Climate Information Needs: From Comparisons and Code to Transformations and Tools

Jeremy Weiss, University of Arizona

11:30 – 1:00 **Lunch (provided)**

1:00 – 2:30 **Session 3: National and International Aspects**

Moderator: Rick Thoman, NOAA National Weather Service

An Innovative Online Course to Teach Extension Agents and Agricultural Producers About Climate Change Impacts on Livestock

Pam Knox, University of Georgia

Alaska Center for Climate Assessment and Policy (ACCAP) Collaboration with National Weather Service (NWS): The Whole is Greater than the Sum of its Parts

Tina Buxbaum, University of Alaska Fairbanks, Alaska Center for Climate Assessment and Policy

Preparing for Climate Changes Along the U.S.-Mexico Border

Gregg Garfin, University of Arizona / CLIMAS

JMA's Contribution to Improving Climate Risk Management

Sakie Hira, Japan Meteorological Agency

Predicting Seasonal Hydro-Climatic Extremes in the Greater Horn of Africa

Tsegaye Tadesse, National Drought Mitigation Center, University of Nebraska - Lincoln

The CPC Regional Hazards Outlook: On Reducing Food Insecurity

Miliaritiana Robjhon, NOAA NWS Climate Prediction Center

2:30 – 3:00

Break

3:00 – 4:15

Session 4: Panel Discussion “Principles for a Regional Climate Partnerships Network”

Moderators: Caitlin Simpson and Sarah Close, NOAA Climate Program Office

Michael Crimmins & Gregg Garfin, University of Arizona

Albert Rango, USDA SW Climate Hub

Andrea Bair, NWS Western Region Headquarters

Carolyn Enquist, USGS

David Brown, NOAA NESDIS/National Centers for Environmental Information

Kelly Redmond, DRI / Western Region Climate Center

4:15 – 4:30

Summary and Closing Remarks

David DuBois, New Mexico State Climatologist, NMSU Dept. Plant and Environmental Sciences

Albert Rango, Director of USDA SW Regional Hub for Risk Adaptation and Mitigation to Climate Change

Fiona Horsfall, Climate Services Division, NOAA National Weather Service

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1	Multi Modal Long Term Interseasonal Regional Predictions <i>Michael LuValle, OFS Laboratories</i>
2	On Time-invariant Transfer Functions and the Application of Statistically Downscaled Daily Maximum Temperature to Calculate Historical and Future Heat Wave <i>Carlos Gaitan, OU, NOAA-GFDL, South Central Climate Science Center</i>
3	Assessment of Wind Erosion Dust Impact on Agriculture in Southern NM <i>Yizhi Zhao, New Mexico State University</i>
4	Climate Change Resilience in Project Planning: Recent USACE Albuquerque District Efforts <i>Ariane Pinson, USACE Albuquerque District</i>
5	Developing an Event Database for Cut-off Low Climatology over Southwestern North America <i>Jeremy Weiss, University of Arizona</i>
6	Ethiopia is moving from Disaster Management to Disaster Risk Management - On establishing an All-Hazards approach to Emergency Management in Ethiopia <i>Gregory Gust, NOAA National Weather Service WFO Grand Forks</i>
7	Lessons learned in forming and maintaining partnerships in climate literacy in New Mexico <i>David DuBois, New Mexico State University / State Climate Center</i>
8	Mapping Agricultural Decision Making across the U.S. Corn Belt <i>Tonya Haigh, National Drought Mitigation Center, University of Nebraska - Lincoln</i>
9	Our experience with designing and deploying low cost meteorological networks for agriculture <i>Stanley Engle, New Mexico State University</i>
10	Planning for the Future of the Great Basin <i>Gregg Garfin, University of Arizona / CLIMAS</i>
11	RISA Engagement Research Methods <i>Caitlin Simpson, NOAA Climate Program Office</i>
12	Sensor Network Data Collection and Monitoring for Climate Scientists <i>Antonio Arredondo, New Mexico State University</i>

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13	Southern Region Extension Climate Academy (SRECA): A Collaborative Effort to Teach Extension Agents About Management Solutions for Climate Risk in the South <i>Pam Knox, University of Georgia</i>
14	Tailoring Seasonal Climate Forecasts for Agricultural Producers in Oklahoma – Proposed Dissertation Research <i>Toni Klemm, University of Oklahoma, South Central Climate Science Center</i>
15	Using the Drought Monitor to Prepare for Significant Fire Occurrence <i>Tim Brice, NOAA National Weather Service WFO El Paso</i>
16	The Climate Resilience Toolkit <i>David Herring, NOAA Climate Program Office</i>
17	Mission Applications at NASA: Water Resource Applications of the SWOT and GRACE missions <i>Margaret Srinivasan, Caltech JPL</i>
18	Review of climate prediction research for the Ethiopian Institute for Agriculture <i>Mark Jury, University of Puerto Rico Mayaguez</i>
19	Early Warnings: Environmental Risk and Disaster Mapping <i>Kekilia Alfred Kabalimu, Tanzania Forest Services Agency, Ministry of Natural Resources and Tourism</i>