

The Midwest CHU

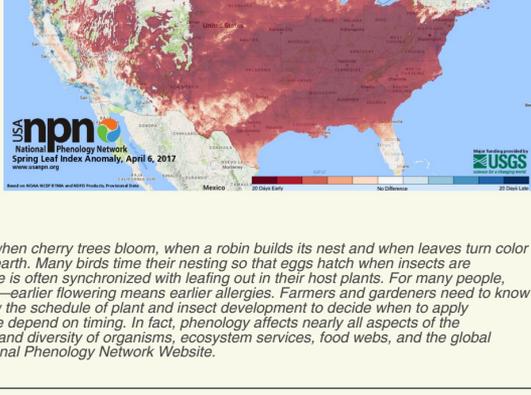
Climate Hub Update

Spring 2017

Promoting Climate-Informed Decisions Since 2014.

Impacts from an Early Spring Arrival in the Midwest

As made evident by several comments from producers in the Midwest, “we have (so far) dodged a bullet” this season: The USA National Phenology Network (USA-NPN) shows that spring has arrived in most of the Midwest Region (not including Minnesota, Wisconsin, and northern portions of Michigan and Iowa). However, temperatures in the spring season can be variable. As was evident in the second and third week of March when freezing conditions were present in most of the region.



Find out more about the National Phenology Network, the impacts being experienced here in the Midwest and how they compare to normal, and much more by selecting here.

Why Phenology? Phenology is nature's calendar - when cherry trees bloom, when a robin builds its nest and when leaves turn color in the fall. Phenology is a key component of life on earth. Many birds time their nesting so that eggs hatch when insects are available to feed nestlings. In turn, insect emergence is often synchronized with leaving out in their host plants. For many people, allergy season starts when particular flowers bloom—earlier flowering means earlier allergies. Farmers and gardeners need to know when to plant to avoid frosts, and they need to know the schedule of plant and insect development to decide when to apply fertilizers and pesticides. Many interactions in nature depend on timing. In fact, phenology affects nearly all aspects of the environment, including the abundance, distribution, and diversity of organisms, ecosystem services, food webs, and the global cycles of water and carbon. Learn more at the National Phenology Network Website.

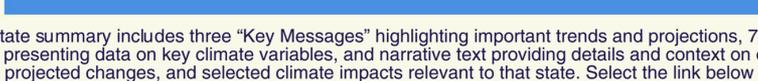
Bumble Bees Now on the Endangered Species List



In January 2017, the rusty patched bumble bee, became the first bumble bee to be listed under the Endangered Species Act. Native to North America, this bee used to be a common site in the Northeast and Upper Midwest. Like other bee species, the rusty patched bumble bee pollinates many economically important crops including tomatoes, peppers, and cranberries. Since the late 1990s, rusty patched bumble bee populations have declined by 87% due to combination of factors including habitat loss, pesticide use, and climate change. For more information about the rusty patched bumble bee and ways you can help this species and other pollinators, please visit: <https://www.fws.gov/midwest/endangered/insects/rpbb/factsheetrpbb.html>

State Climate Summaries are Now Available

In response to growing demands for state-level information on the assessment of climate change, NCEI and North Carolina State University's Cooperative Institute for Climate and Satellites have produced a set of climate summaries for all 50 U.S. states. These summaries provide up-to-date information on observed and projected climate changes for each state. These summaries are designed to supply decision makers, other stakeholders, and the public with highly relevant climate information delivered in an accessible and compact format.



Each state summary includes three “Key Messages” highlighting important trends and projections, 7 to 10 figures presenting data on key climate variables, and narrative text providing details and context on observed trends, projected changes, and selected climate impacts relevant to that state. Select the link below to find your state!

CHU in Every Issue...

A Midwest Focus Climate Update: April 2017

Planting season approaches quickly with small grains planting beginning in the northern Plains and crop insurance dates for corn only days away in the main part of the Corn Belt. Some early experimental planting has been reported as well as planting preparation. Thus, interest on potential weather for field activity is quite high.

The updated monthly outlooks from NOAA for April present a little concern in the northern plains where above average chances for precipitation are more likely which could slow field prep activities and planting. The recent parade of storms and cloudy conditions in the Midwest looks to ease a little after the next 1-2 weeks and be followed by likely warmer and drier than average conditions into the middle of April.

For the complete Climate Update, please select here.

Regional Outlook for the Midwest

Missouri River Basin
Great Lakes Region
Midwest Region

In collaboration with NOAA and the Midwest Regional Climate Center, we are pleased to provide the following Regional Outlooks for Winter 2016. The Midwest, Missouri Basin, and Great Lakes regional outlooks can be accessed by clicking on their titles to the right.

Meet the Midwest Climate Hub: Dennis Today, Director



Dennis Today, Director of the Midwest Climate Hub, arrived at the Hub last year from South Dakota, where he was the State Climatologist for 13 years! Now married with 4 children, Dennis originates from Rathbun, Iowa where he grew up as one of 8 children. His initial training is in meteorology, with a PhD from ISU in Agricultural Meteorology. He considers himself very fortunate to be back in Iowa, closer to a large number of family members.

Anyone who knows Dennis knows he has a curious fascination with trains: When asked why, Dennis responded, “Just because I have been known to drive routes to go along tracks and drive large distances to see a steam engine run? I grew up near a railroad line that was almost abandoned and was saved set the stage... Something about the wonder of moving thousands of tons of material around the county efficiently is very impressive.” He has a love of both listening to and creating music and admits to being a college basketball junkie.

Dennis' has extensive experience dealing with a large number of climate issues, many of which impact agriculture, including most recently, two regional climate projects (NIFA Corn CAP and U2U). As Director, he sees the Hub's goal as facilitating agriculture to adapt and deal with a changing climate while remaining productive and easing its environmental impact. “My idea is that the Hub becomes a national leader in developing climate services for agriculture and helping people make climate-based decisions.” The Midwest Climate Hub is happy to have him leading us.

USDA Climate Blog Updates

USDA Supporting the National Seed Strategy

The use of native plant material in conservation, restoration and land management results in healthy ecosystems countering the effects of invasive plant species, altered wildfire regimes, extreme weather events and human-caused events. The National Seed Strategy for Rehabilitation and Restoration 2015-2020 promotes the use of native plant materials to restore plant communities and support healthy ecosystems...

Honey: A Sweet Topic with New Data this Spring

Every day, National Agricultural Statistics Service (NASS) statisticians work hard to produce timely, accurate and useful statistics to U.S. agriculture. In addition to producing hundreds of reports each year on crops, livestock and economic indicators for the agriculture industry, NASS collects and reports annual data for honey bee colonies. Historically, we've only surveyed operations or farms with five or more colonies, but...

Climate Hubs and 4-H: Partnering with Tomorrow's Leaders to Sustain Agriculture Today

Agriculture in the United States faces significant challenges in the years ahead, perhaps none greater than the projection of approximately 9 billion people worldwide to feed by mid-century. Meeting this challenge will require an estimated increase in agricultural production of more than 70%. This increase that will need to occur over an ever-declining land base and one that will necessitate a paradigm shift in agricultural equivalent to that of the green revolution...

For More on USDA Blogs, click here.

On the Radar

Climate Change and Health in Indian Country - Resilience and the Health Consequences of Climate Change: WEBINAR, Thursday, April 20, 4:00-5:00 PM EST

Preparations are being made for the environmental impacts of climate change, but what about the health impacts? In this one hour webinar we will hear from subject matter experts and indigenous scholars to explore what the broad health impacts can be, discuss the ideas of health and resilience in Tribal communities, and learn about resources for approaching climate change planning. Teleconference access: 1-877-668-4493, Phone Access Code: 736 404 573. For more information and to register, select here.



National Adaptation Forum: May 9-11, 2017 - Saint Paul, Minnesota



The Forum gathers the adaptation community to foster knowledge exchange, innovation and mutual support for a better tomorrow. We invite you to join the convening of adaptation practitioners from around the country focused on moving beyond adaptation awareness and planning to adaptation action.

The goal of the National Adaptation Forum convening is to develop a program that provides guidance through the steps of the adaptation process, as well as across the spectrum of adaptation activities in the United States and around the world today. Trainings and sessions should aim to be cross-sectoral in an effort to demonstrate the integrated nature of successful adaptation. As such they should engage multiple perspectives, either across sectors, geographies or stakeholders (e.g. national, tribal, regional, state, local, private, non-profit, educational).

23rd Conference on Applied Climatology: June 26 - 28, 2017 - Asheville, NC

The 23rd Conference on Applied Climatology will be held 26–28 June 2017. Sponsored by the American Meteorological Society, and organized by the AMS Committee on Applied Climatology and American Association of State Climatologists, the 23rd Conference on Applied Climatology will be held in conjunction with the American Association of State Climatologists Annual Meeting in Asheville, North Carolina. A preliminary program, registration, hotel, and general information will be posted on the AMS website (<http://www.ametsoc.org>) by March 2017.

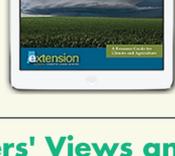


Stemming from the AMS Annual Meeting Theme of “Observations Lead the Way” the 23rd Conference on Applied Climatology will build a devoted session around speakers and presentations on applied climate science utilizing and/or the building of observational, reanalysis and climate datasets in a variety of forms (e.g. surface observations, weather data, proxy data, etc.). There will also be a special session devoted to Dr. Kelly Redmond.

Additional Resources

Climate and Crops: Adapting Farming to a Variable Climate

Climate and Crops, a new iBook from Alabama Extension at Auburn University, is the nation's first guide to farming in a variable climate. The iBook was released at the American Society of Agronomy meeting November 6-9, 2016 in Phoenix. The book identifies major weather patterns of El Niño and La Niña climate phases, identifies the threats to crops in each phase, and offers control options for diseases and insects.



The iBook is the result of a joint effort of 25 scientists and Cooperative Extension experts from four of the South's leading research universities, including: Auburn University, Florida State University, the University of Florida and the University of Georgia.

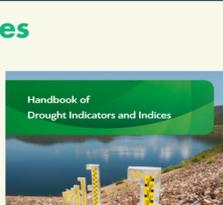
Climate and Weather: Specialty Crop Growers' Views and Priorities to Manage Uncertainty in Production Systems

The research - North Central Fruit, Vegetable and Wine Growers' Assessment of Soil and Water Vulnerability Under Changing Climate Conditions and Extreme Weather Events - has been funded by the USDA-Agricultural Research Service (ARS) Midwest Climate Hub and conducted by researchers at the Iowa State University.

Specialty crops include many kinds of vegetable and fruit plants and trees, each with their own environmental preferences to thrive and be productive. These perennial and annual crops have high levels of sensitivities to the timing and distribution of temperature (frost and high heat), excess water, prolonged periods of wetness and drought, high winds, hail, and long term shifts in climate. Specialty crop growers know that their local weather and climate are the key to productive and profitable crops; and they track their local weather daily and over time to manage their crops. To better understand how growers perceive weather-based uncertainties and the impacts of variable weather on annual and longer-term production, we conducted seven face-to-face meetings with 106 US specialty crop growers and their advisors. The six technical reports below present conceptual maps and priority rankings of the concerns some US growers expressed in 2015 and 2016.

Handbook of Drought Indicators and Indices

A partner to the USDA Climate Hubs, the National Drought Mitigation Center, along with the World Meteorological Organization (WMO) and the Global Water Partnership (GWP), has developed a handbook of Drought Indicators and Indices. “This Handbook of Drought Indicators and Indices is based on available literature and draws findings from relevant works wherever possible. The handbook addresses the needs of practitioners and policymakers and is considered as a resource guide/material for practitioners and not an academic paper. This publication is a ‘living document’ and will be updated based on the experiences of its readers. This publication is part of the Integrated Drought Management Tools and Guidelines Series’ compiled by the Integrated Drought Management Programme (IDMP).”



The latest update is to announce that the handbook is now available in 6 languages: English, Spanish, French, Russian, Chinese, and Arabic.

U2U program Bringing Useful Climate Tools to Farmers

The Useful to Usable (U2U) project aimed to mold existing climate data into relevant products for the agricultural community. Project participants first learned about the type of climate data that farmers employ when making growing decisions on their farms and how they employ that data. The team used those insights to develop products that would help farmers determine what, when and where to plant, as well as how to manage crops to maximize yields with eyes on limiting negative effects on the environment. Purdue University's Linda Prokopy, a professor of natural resource social science and U2U lead project director, and Melissa Widhalm, U2U project manager, led a team of nearly four dozen faculty, staff and students from partnering universities.

Many of the team's products were published early online in a special issue of the journal Climate Risk Management. Select here or the Climate Risk Management iImage to access the climate.

Released - The Valuation of Ecosystem Services Available from Farms and Forests

Report on the Valuation of Ecosystem Services from Farms and Forests Released: The Council on Food, Agricultural and Resource Economics and the USDA Office of the Chief Economist Office of Environmental Markets partnered on this project to develop a conceptual framework for valuing ecosystem service benefits from U.S. farms and forests (the report chapters are linked here as well as on C-FARE's website - cfare.org). Using a conceptual value framework and the best available science, the project engaged three interdisciplinary teams with experience working on issues of water quality, forests and carbon sequestration and pollinator habitat for the purpose of developing reliable and consistent approaches for assessing monetary and non-monetary benefits of national conservation programs. “The study found that the science available for measuring the benefits of conservation programs is improving. More types of ecosystem services can be valued with available information,” said Lisa A. Wainger, Project Co-Chair and Research Professor at the University of Maryland Center for Environmental Science.



2017 U.S. Spring Climate and Flood Outlook



Spring Outlook: Risk of major flooding in North Dakota, moderate flooding in Idaho

Warmer-than-average temperatures favored in much of U.S.—this spring

Northern North Dakota—the Souris River, Devils Lake and the northernmost reaches of the Red River—has the greatest risk of major flooding this spring, while moderate flooding is possible over southern Idaho in the Snake River basin, according to NOAA's Spring Outlook released today. California, which saw extensive flooding in February, is susceptible to additional flooding from possible storms through the remainder of the wet season and later, from snowmelt. Select here to find out more.

U.S. areas at risk for minor (light blue), moderate (medium blue), or major (dark blue) flooding this spring due to winter precipitation and temperature patterns.