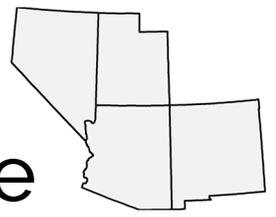


# Managing your risk: Weather and climate impacts on crop insurance



A fact sheet produced by the USDA Southwest Climate Hub using publicly available crop insurance data from the USDA Risk Management Agency for Arizona, Nevada, New Mexico, and Utah.

## How do farmers manage risk?

The federal crop insurance program is an important safety net for American farmers and ranchers during times of diminished crop yields or declines in prices. Administered through the U.S. Department of Agriculture (USDA) Risk Management Agency (RMA), agricultural producers may insure their crops against natural perils and price declines. Various levels of coverage and types of programs are offered for different types of crops with premiums typically subsidized by the federal government (on average around 60%). Natural perils and price declines can negatively affect crop production triggering indemnities, insurance contract payments, which help mitigate financial losses.

## What is the purpose of this fact sheet?

This fact sheet reports on the weather and climate-related causes of loss (COL) from crop insurance data for the American Southwest. COL refers to natural perils and price declines trigger indemnities as defined above. Trends in indemnities by COL over space and time may indicate areas more vulnerable to extreme weather events and/or foci for future adaptation efforts. The end goal is to provide accessible and discoverable data to agricultural producers to help manage their risk.

## Resources

**USDA Risk Management Agency**

<https://www.rma.usda.gov/>

**RMA Insurance agent locator**

<https://www.rma.usda.gov/tools/agent.html>

**Crop policies and pilots**

<https://www.rma.usda.gov/policies/2018policy.html>

**USDA Climate Hubs**

<https://www.climatehubs.oce.usda.gov/>

**\$1.6 billion**



Value of insured crops for the 4-state region through the federal crop insurance program from 2001 to 2016

**TOP 5 CAUSES OF LOSS**

Failure in irrigation supply, drought, freeze, hail, & heat



**2013**

Peak year of indemnities totaling \$76.8 million mostly due to drought and failure in irrigation supply



**\$446 million**

Amount of indemnities for the top five causes of loss from 2001 to 2016, representing over 80% of total indemnities

**80%**

Fraction of indemnities attributed to failure in irrigation supply (i.e., lack of water) during May



**12124**

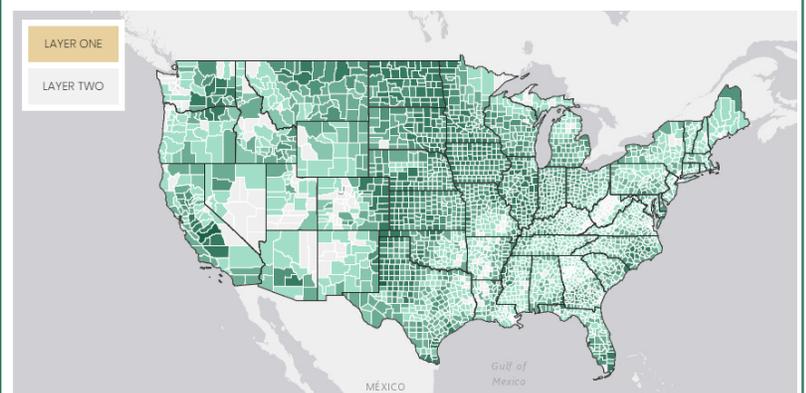
Number of policies receiving an indemnity due to drought from 2001 to 2016



The **AgRiskViewer** is a web-based interactive tool to explore indemnities by causes of loss over space and time. -> <https://swclimatehub.info/rma/>

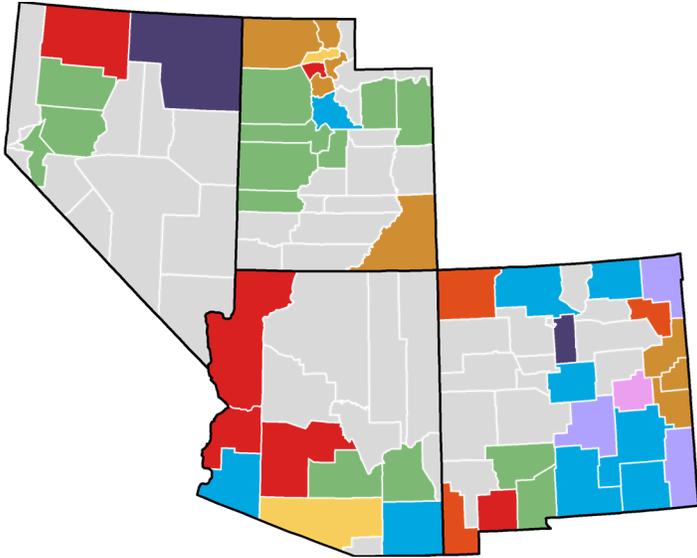
**AgRisk Viewer**

USDA SOUTHWEST CLIMATE HUB

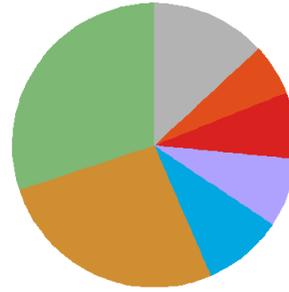


## Top COL by county

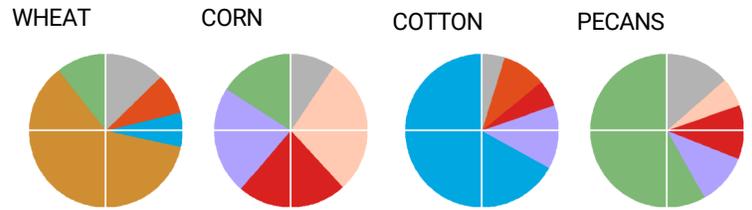
The top COL in each county comprising the largest fraction of total losses from 2001 to 2016 is indicated in the map below. Light gray counties indicate no losses reported through RMA.



**Fraction of total indemnities from 2001-2016 by major COL for AZ, NV, NM, UT**



## Fraction of total indemnities from 2001-2016 by major COL and top crops

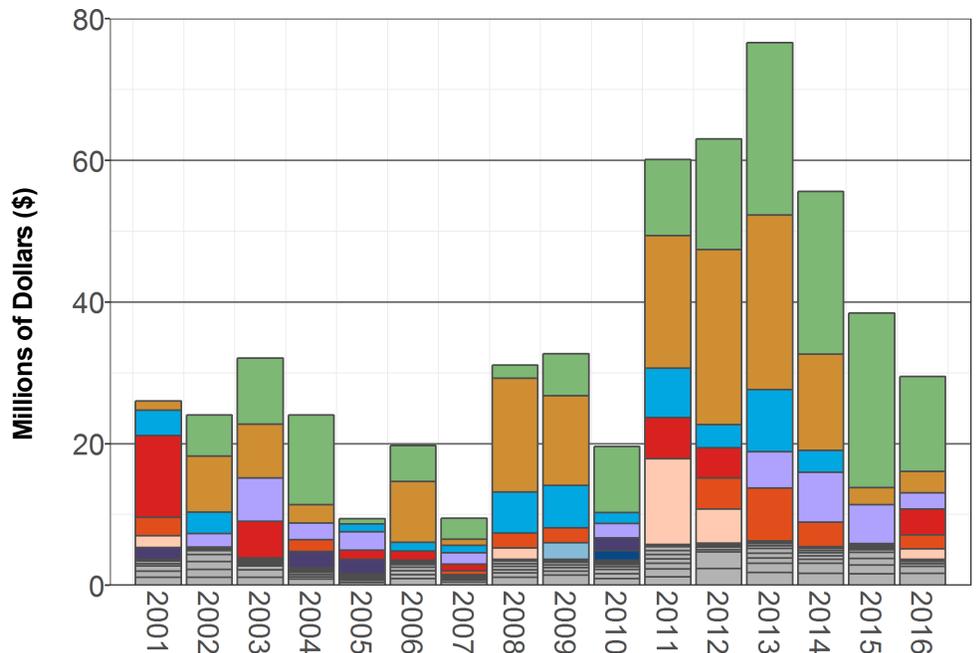


**Cause of loss (COL) refers to natural perils and price declines that negatively affect crop production triggering crop insurance payouts, or indemnities.**



## Annual indemnities by major COL

Indemnities rise and fall with extreme weather events, long-term changes in climate, and shifts in socio-economic conditions. The figure to the right shows annual indemnities by COL. Water defines the American Southwest as the largest COL were related to decreased water availability (e.g., failure in irrigation supply, drought). The effects of drought were pronounced in the region from 2011 to 2014, including crop losses due to hot wind and heat.



## How have the top three COL changed over time?

In most years, hot and dry COL are responsible for most crop losses. Failure in irrigation supply (green) and drought (orange) indicate lack of water necessary for irrigated crops in the Southwest. However, freeze (blue) and hail (light purple) are also important, and affect high-value fruit and nut crops (e.g., pecans). White portions of the pie chart indicate other COL not in the top 3 for that particular year.

