



# Agriculture Impacts



## **Crop and Livestock production were drastically reduced**

June 23, 2017

Governor Bullock declares 19 counties in eastern Montana to be in a Drought Emergency.

July 2, 2017

Wheat production is poor and down an average of 37.2 percent compared to this time in 2016.

July 20

31 counties and six reservations are in drought disaster

September 2, 2017

Total crop production down 30 to 40 percent compared to this time last year

September 10, 2017

Montana Department of Agriculture expands its hay lottery



# Fire Impacts



Season began 1 month early

1,366,498 Acres burned

3<sup>rd</sup> largest fire season on record

21 Large fires

Major fires:

Lodgepole complex - 270,723 Acres

Rice Ridge complex - 160,187 Acres

FEMA disaster assistance was requested by Governor Steve Bullock

Combined federal and state expenditures of \$378,000,000

# Tourism & Health Impacts



Impact of 2017 wildfires on tourism business volume		
	N	%
N/A (no smoke or fires in my area)	25	7%
No change in volume	93	26%
Decreased a lot	40	11%
Decreased moderately	62	18%
Decreased slightly	94	27%
Increased slightly	23	7%
Increased moderately	9	3%
Increased a lot	8	2%

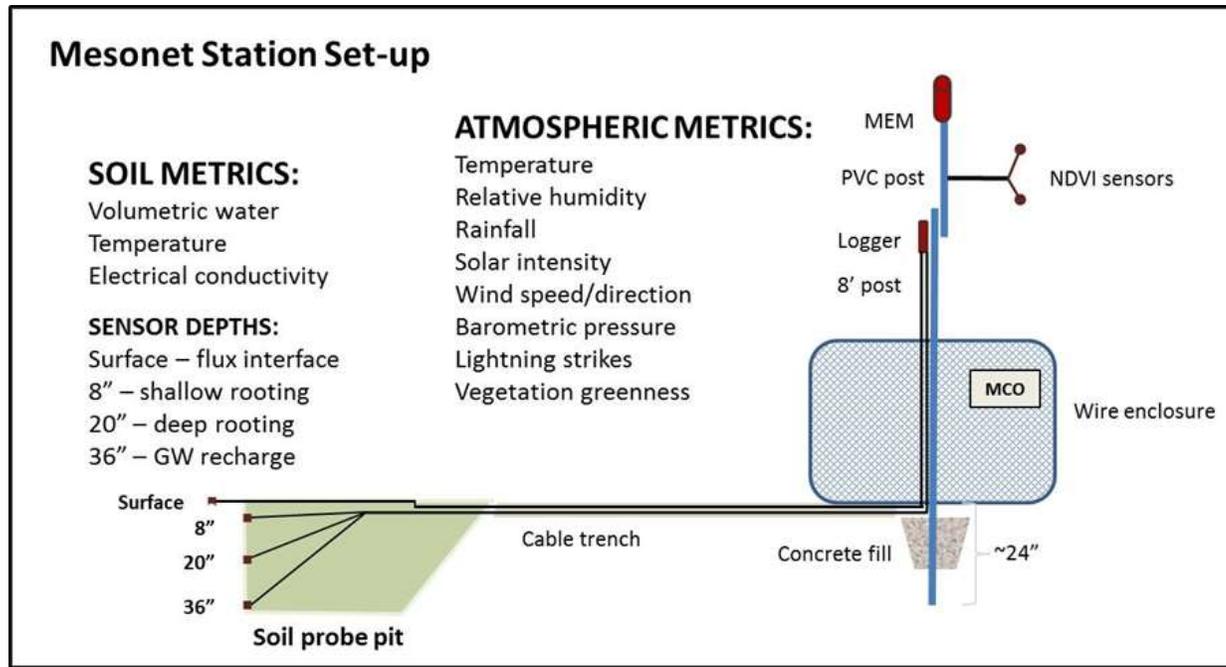
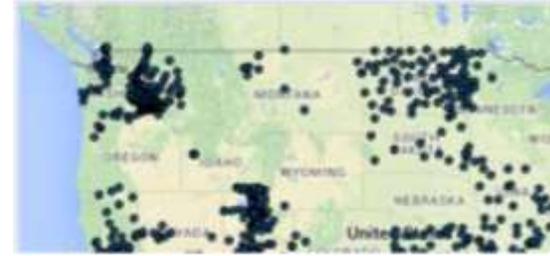
MT Institute on Tourism & Recreation

- Decreased tourism spending of \$240 million\*
- “Hoot Owl” fishing restrictions in southwestern Montana Rivers
- Doubled hospital admissions for respiratory issues in Missoula and Powell Counties\*

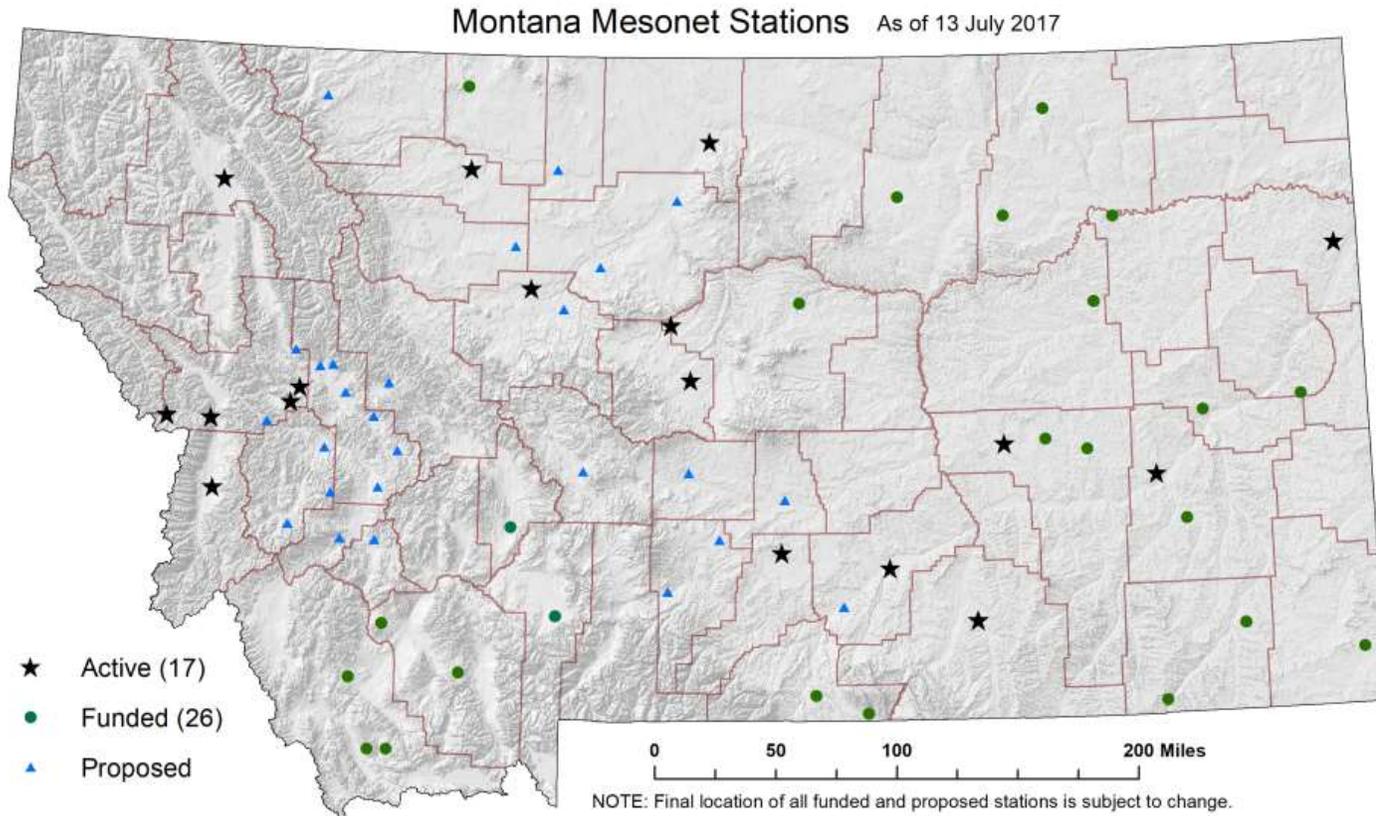
# 2017 Lessons Learned



# Outstanding Needs – local weather and soil moisture monitoring



# A Collaborative Framework

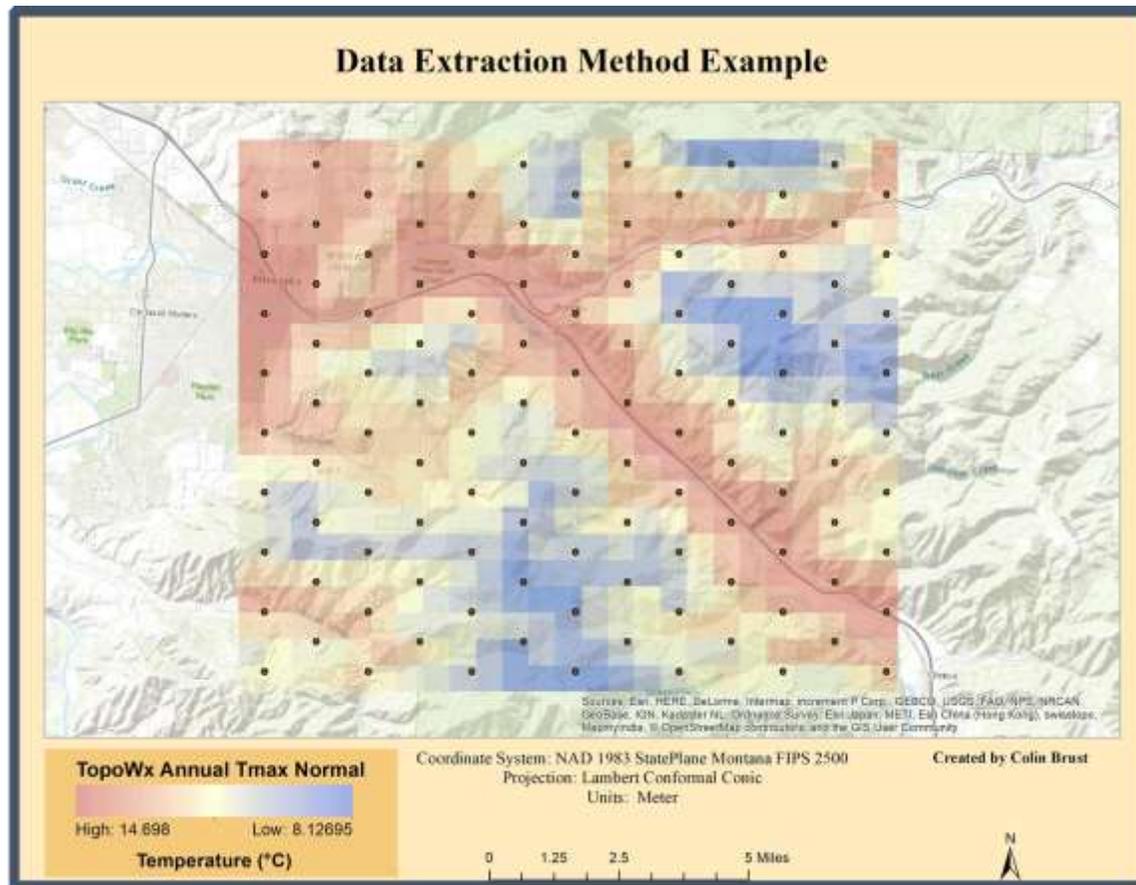


[climate.umt.edu/mesonet](http://climate.umt.edu/mesonet)

## Federal, State, and Private Partnerships

- National Oceanographic and Atmospheric Administration (NOAA MADIS)
- DOI Bureau of Land Management
- USDA Forest Service
- USDA Agricultural Research Service
- MSU Extension
- MSU Agricultural Research Centers
- Bureau of Indian Affairs: Little Big Horn College, Crow Agency
- Lolo Watershed Group
- Blackfoot Challenge
- Trout Unlimited
- Community Collaborative Rain, Hail and Snow Network (CoCoRaHS)
- Montana Department of Natural Resources and Conservation
- Montana Bureau of Mines and Geology
- Roberts L7 Ranch
- Tureck Ranch
- E Bar L Ranch
- Merja Farms

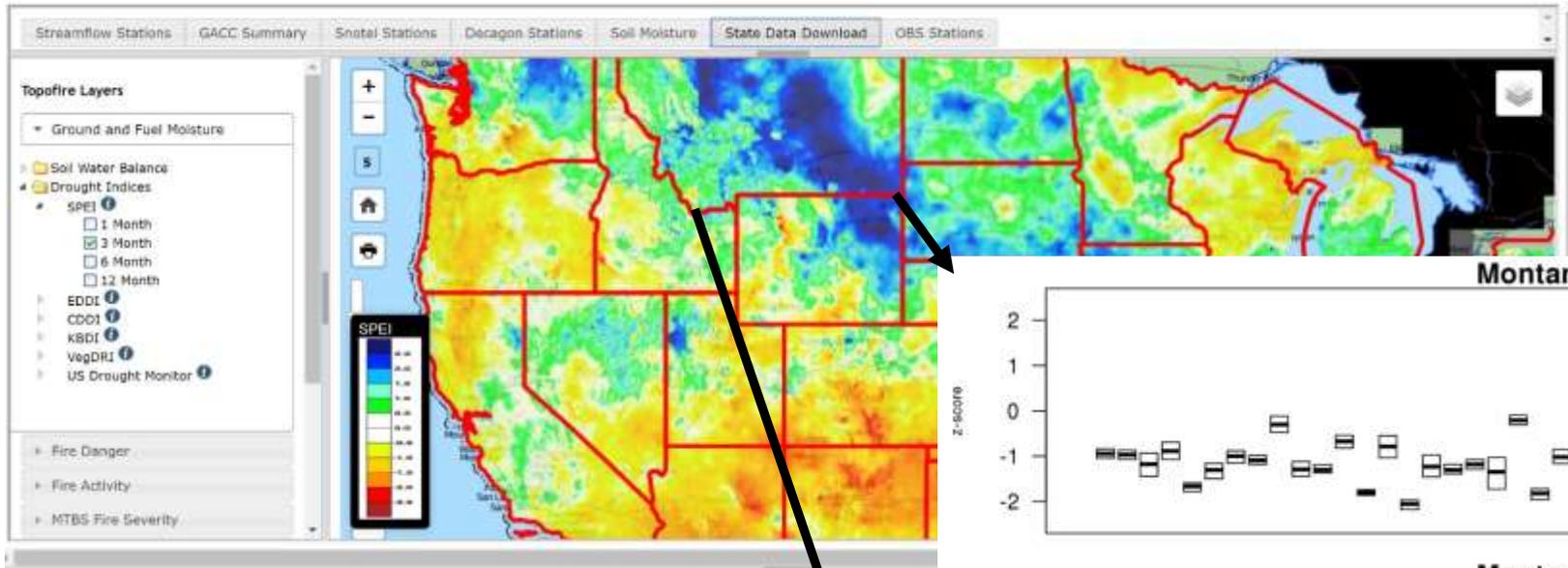
# Outstanding Needs – evaluation of drought metric applicability



Assess metrics for:

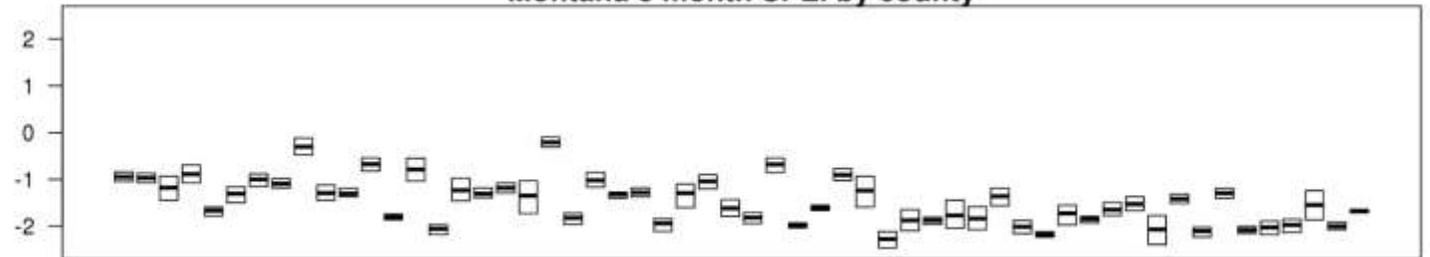
- Sensitivity to input data (space and time)
- Meteorological, agricultural, hydrological, ecological and economic forms of drought
- Applicability across differing land uses, land cover and topography
- Develop a white paper for application in Montana.

# Outstanding Needs – aggregation, automation and summarization of drought metrics



[topofire.dbs.umt.edu](http://topofire.dbs.umt.edu)

Montana 3 month SPEI by county



Montana 6 month SPEI by county

