

THE  
**ATMOSPHERIC RESERVOIR**  
*Examining the Atmosphere and Atmospheric Resource Management*

# THE NEW NORMALS

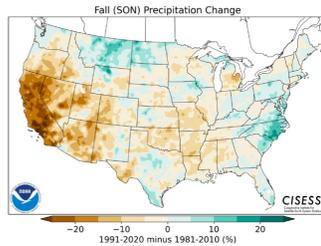
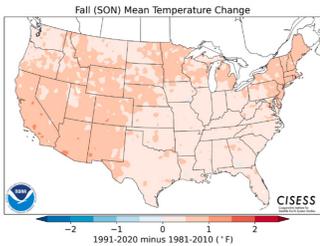
By Mark D. Schneider

When meteorologists or climatologists talk about temperatures or precipitation being above or below normal, they are referring to the most recent 30 years of recorded weather data. On May 4, the National Centers for Environmental Information (NCEI) released a new 30 year set of climate normals that include years 1991-2020. There are a variety of industries that use these climate normals for planning purposes. In North Dakota, our dominant agricultural industry utilizes climate normals for crop selection and planting times.

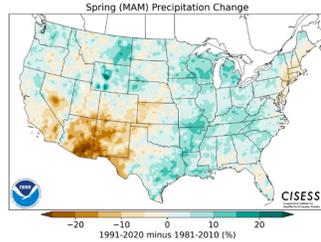
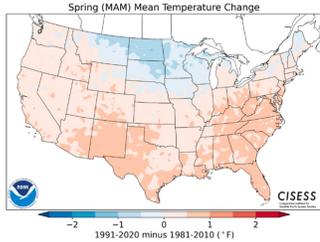
Because 20 years from the 1981-2010 climate normals overlap the 1991-2020 climate normals, you might suspect that there wouldn't be significant or even noticeable differences when comparing the two periods. Megan Jones, the National Weather Service Bismarck Climate

Program Leader, was surprised to discover that "even with only 10 years of different data included in the new normals, there were some noticeable trends in temperature and precipitation across the area. Seasonal temperatures in both summer and winter stayed relatively consistent, but spring has a definite cooling trend across the Northern Plains, while the fall season is consistently warming across the region. Precipitation has also been increasing across most of western and central North Dakota. Other things of interest found when looking at the new climate normals were a decrease in the average number of days with a max temperature of 90°F or higher, and a later average date of the first frost and freeze in the fall."

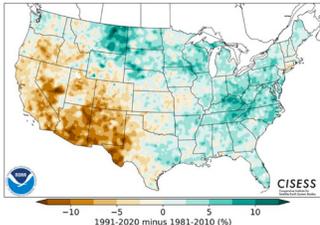
## Fall Seasonal Changes



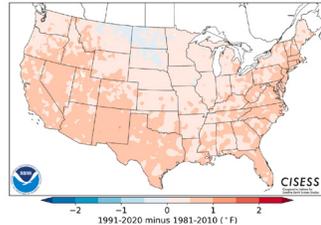
## Spring Seasonal Changes



## Annual Precipitation Change



## Annual Mean Temp Change



Average Days Max Temp 90°F Or Higher		
	1981-2010 Average	1991-2020 Average
Bismarck	22.0	20.5
Dickinson	21.9	19.3
Jamestown	15.0	9.0
Minot	14.1	13.4
Williston	24.5	21.5

Frost/Freeze Date Changes					
Location	Normals Years	Median First		Median Last	
		28°F	32°F	28°F	32°F
Bismarck	1981-2010	Oct. 1	Sept. 22	May 8	May 15
	1991-2020	Oct. 3	Sept. 24	May 8	May 14
Dickinson	1981-2010	Oct. 3	Sept. 23	May 7	May 15
	1991-2020	Oct. 5	Sept. 23	May 12	May 18
Jamestown	1981-2010	Oct. 4	Sept. 26	April 29	May 12
	1991-2020	Oct. 6	Sept. 29	May 1	May 12
Minot	1981-2010	Oct. 3	Sept. 24	May 2	May 14
	1991-2020	Oct. 5	Sept. 28	May 1	May 14
Williston*	1981-2010	Oct. 3	Sept. 23	May 3	May 14
	1991-2020	Oct. 5	Sept. 23	May 2	May 13

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