2017-18 Statewide Conditions for Fall-Planted Small Grain Crops

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The season started out warmer and drier than usual, with infrequent rainfall events from November through February and precipitation totals that were roughly half of historical totals (Figure 1). This was accompanied by warmer than average temperatures over the same period, which resulted in more rapid development of small grain crops during the vegetative period of growth than would be the case in a normal year (Figure 2).

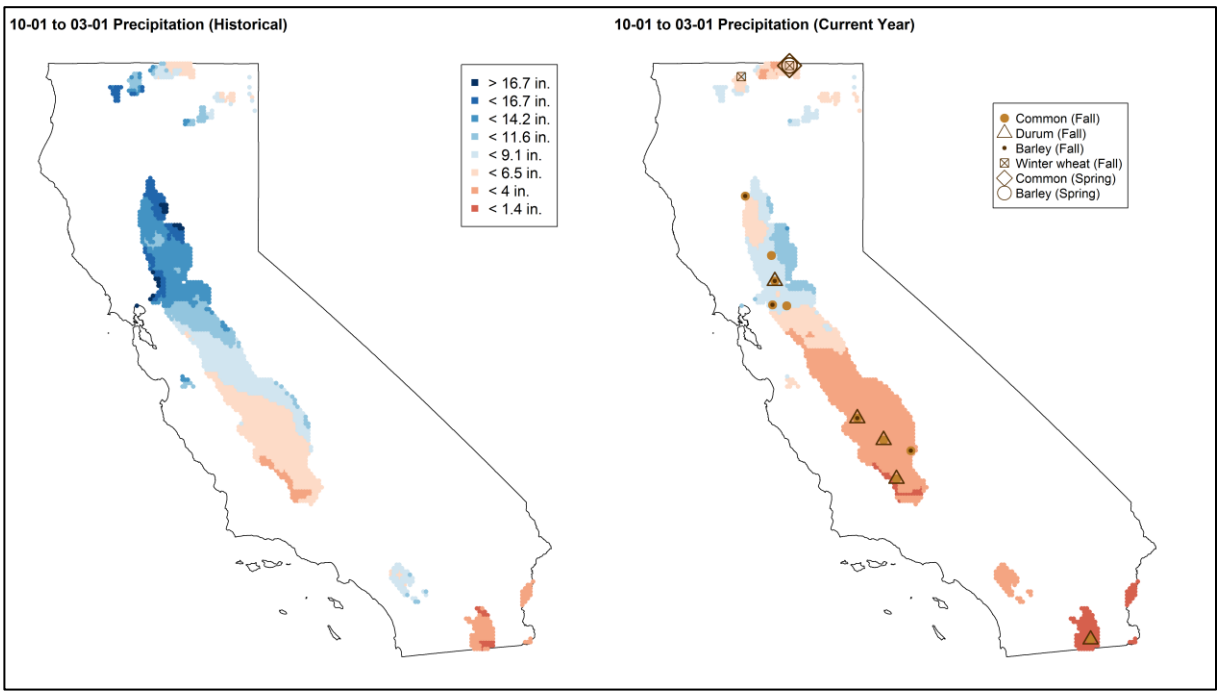

***Figure 1**. Historical precipitation (10-year average, left) compared to rainfall totals during the current season (right) between 10/1/2017 and 3/1/2018. Also indicated are UC Small Grain Testing Program trial locations for various crop types (right).*

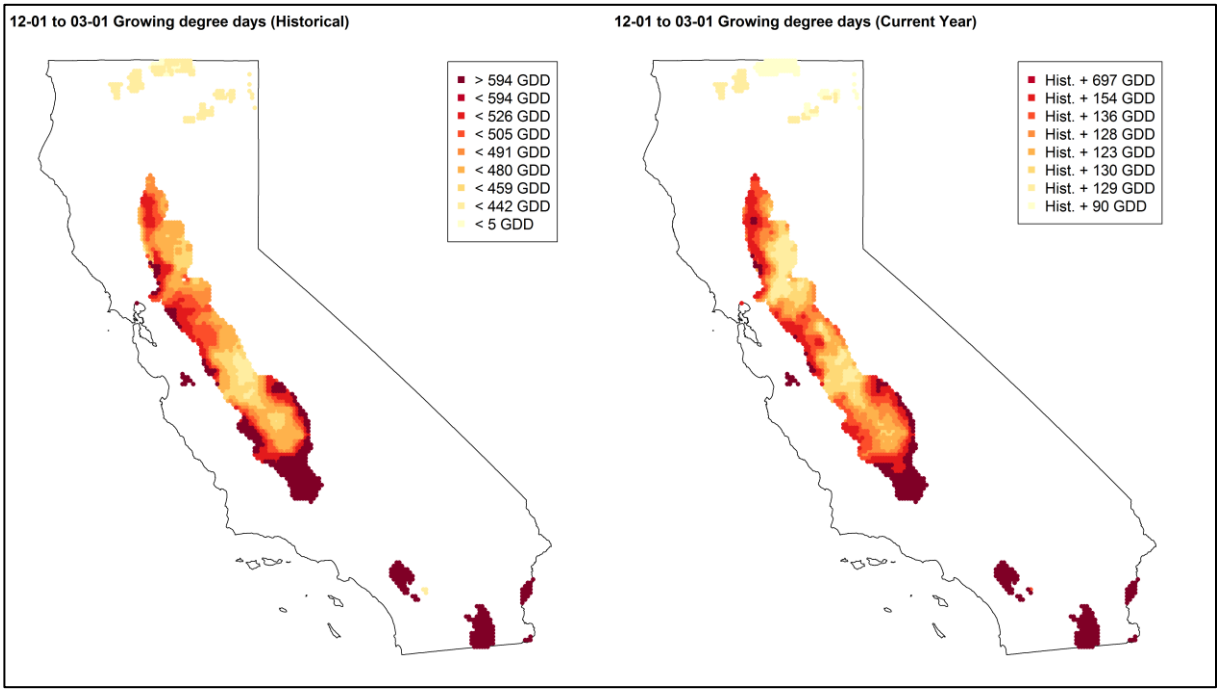

***Figure 2**. Historical growing degree day accumulation (GDD: 87F max, 44F min; 10-year average, left) compared to GDD during the current season (right) between 12/1/2017 and 3/1/2018.*

In contrast, March and April were rainier and cooler than normal (Figures 3, 4). This helped bring annual precipitation totals closer to average, although most of the wheat growing regions in the state still received below-average precipitation. Also, the rate of crop development slowed during the late-vegetative and early reproductive stages of growth, with growing degree days (GDD) for wheat accumulating more slowly than average during this period for most of the wheat growing regions of the state.

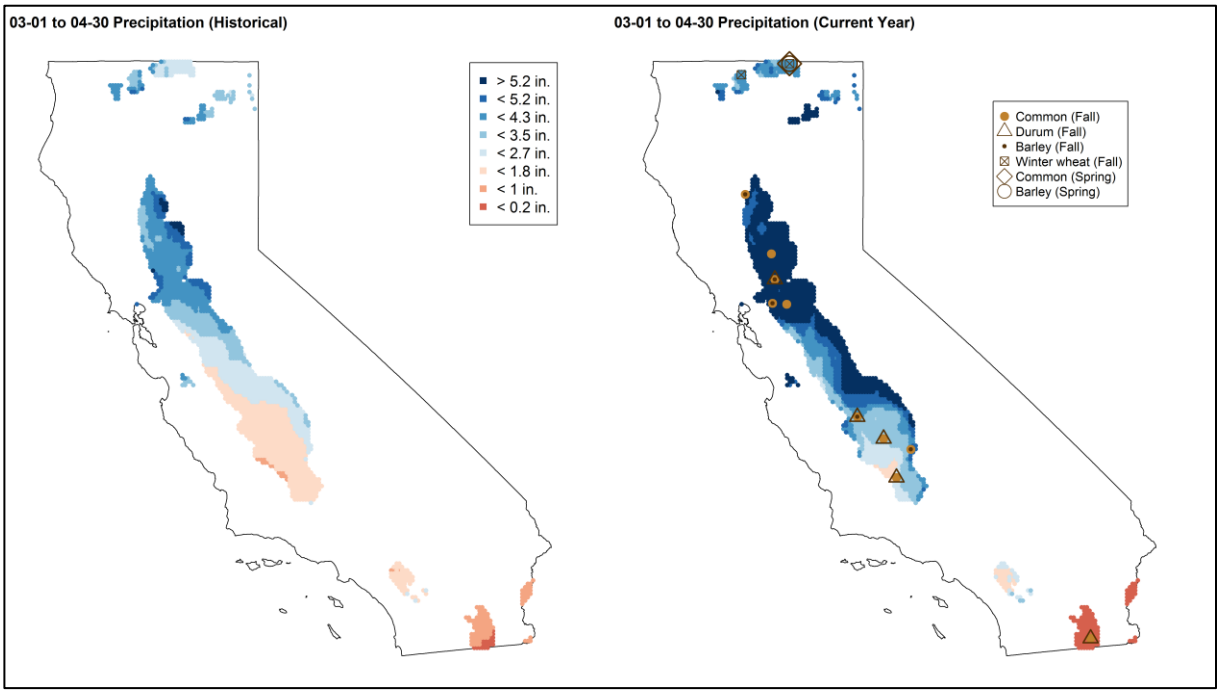

***Figure 3**. Historical precipitation (10-year average, left) compared to rainfall totals during the current season (right) between 3/1/2018 and 4/30/2018. Also indicated are UC Small Grain Testing Program trial locations for various crop types (right).*

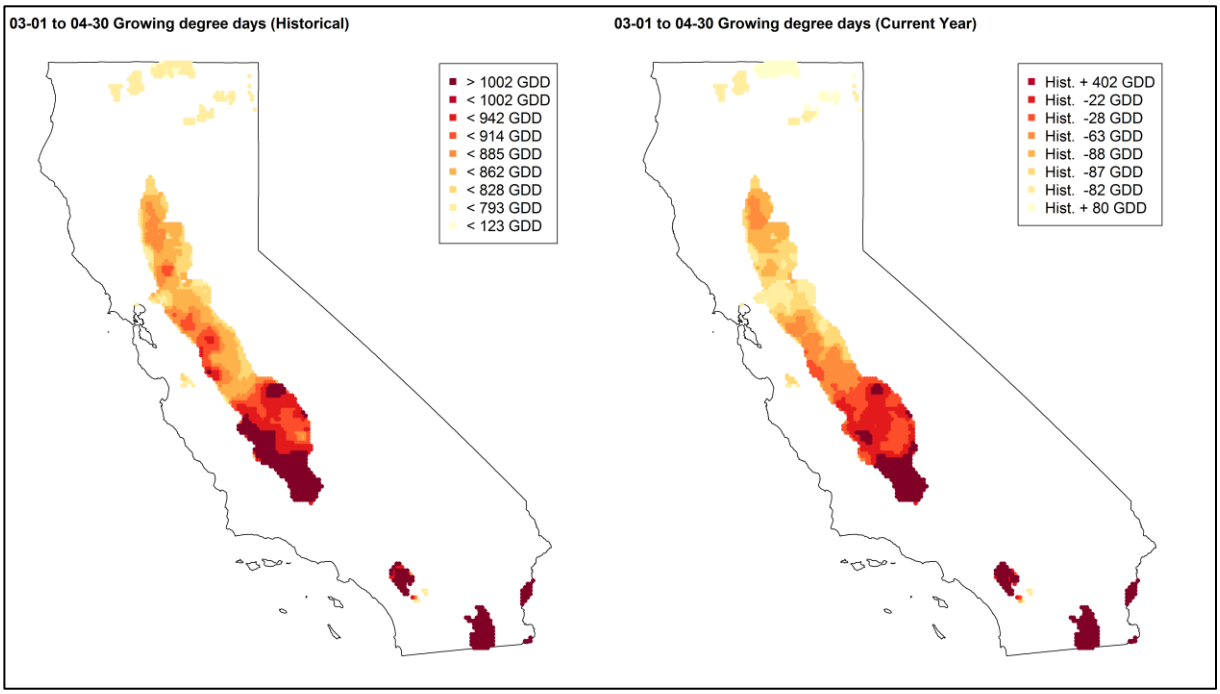

***Figure 4**. Historical growing degree day accumulation (GDD: 87F max, 44F min; 10-year average, left) compared to GDD during the current season (right) between 3/1/2018 and 4/30/2018.*

Patterns of precipitation and rates of development compared to a 10-year historical average at the UC Small Grain Trial Davis location are depicted in Figure 5 (below).

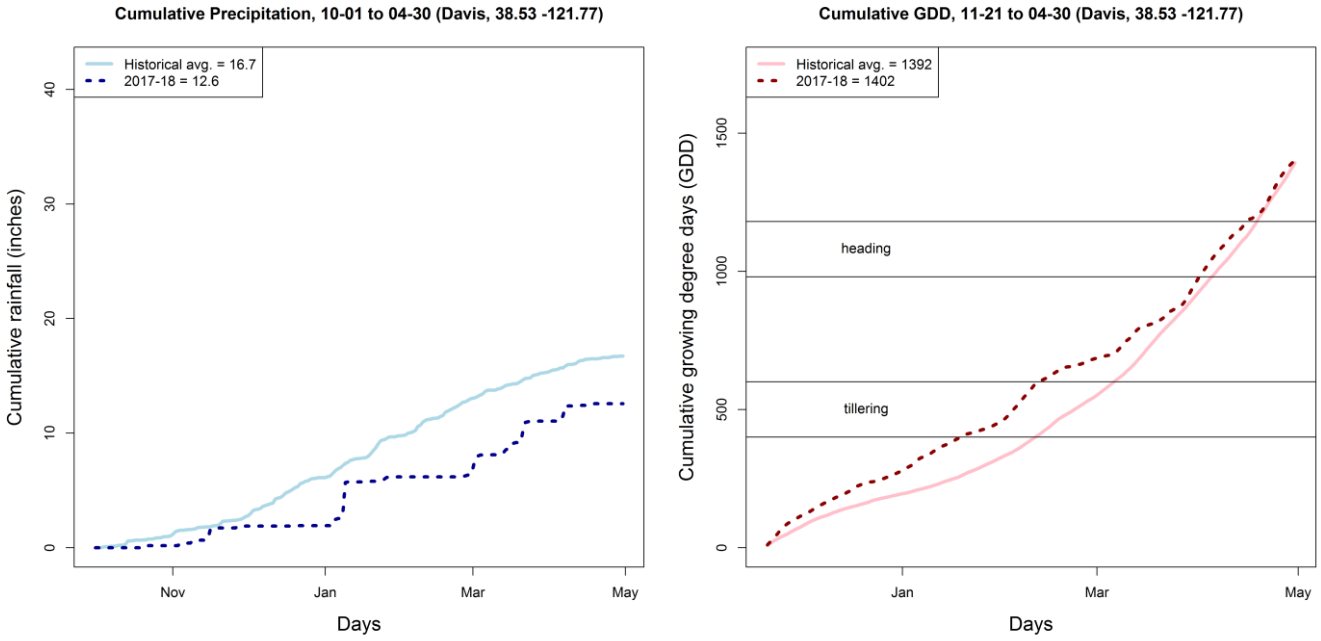

***Figure 5**. Historical precipitation (left) and growing degree day accumulation (GDD: 87F max, 44F min; right) patterns compared to the current season for the Davis trial location.*

The combination of dry, warm temperatures early in the season had the most negative impact at the dryland sites in Tehama, Solano and Tulare counties. The crops at these sites had poor vegetative growth, significant weed competition and varying degrees of drought stress, including some crop failure at the Tulare location. There were also freezing temperatures for several stretches of days from mid-February to early-March in many small grain growing areas, and frost damage was observed at locations in the Sacramento and San Joaquin Valleys.

Disease incidence throughout the state has been relatively limited to date, with some isolated cases of crown and root rot. Stripe rust infection has been observed at low levels in susceptible varieties in the UC trial network. We have also observed barley yellow dwarf virus within the UC trials as well as some glume discoloration on select varieties that has the appearance of black chaff or false black chaff.