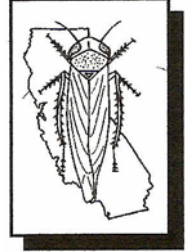


BEET CURLY TOP VIRUS MONTHLY REPORT



CURLY TOP VIRUS CONTROL PROGRAM

2895 N. Larkin, Suite A
Fresno, CA 93727
PHONE: (559) 294-2031
FAX: (559) 294-2037

Report for December 2018

Weather Outlook

- As of December 13, 2018, the 2018-19 winter weather outlook suggests there is a ~90% chance of an El Nino developing in winter and a ~60% chance it continues through spring. Scientists have stated the sea surface temperatures (SST's) around the equator are above average for the Pacific Ocean, thus indicating an El Nino. The National Oceanic and Atmospheric Administration's (NOAA) Climate Prediction Center stated that they expect a weak El Nino to be in place in late fall to early winter, which could potentially bring wetter conditions across the southern and eastern U.S., and warmer, drier conditions to parts of the northern and western U.S.

According to the NOAA predictions, California now has slightly higher chances of having a wetter than normal winter than the last prediction model. Temperatures are about the same, still above average for winter. (Please refer to NOAA maps on the last page).

- Updated weather information will be posted with each report until spring. Timing and the amount of rain, temperatures, and available host plants will determine BLH populations.

Website used for weather information:

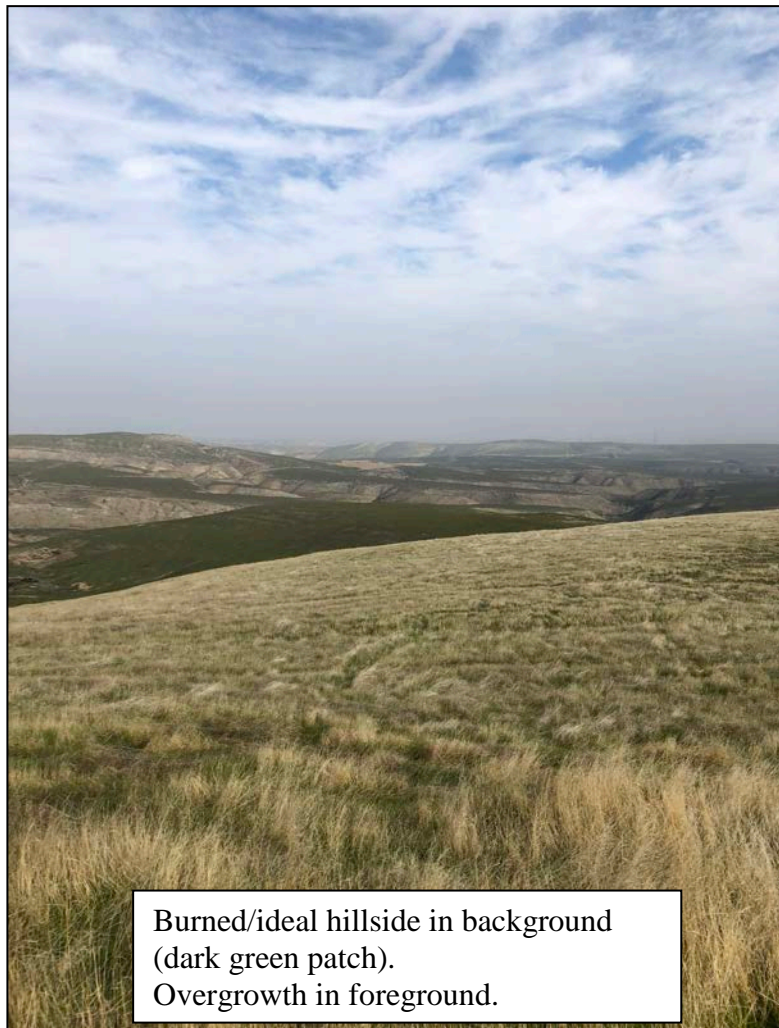
- http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

Fresno County/Kings County

- There are two scenarios to consider with respect to BLH habitat and population development.
 - The first scenario is where the previous year's old growth remains; vegetation was still abundant, limiting BLH habitat and host plant development in several historical treatment fields. Recent rainfall has allowed the winter grasses to dominate the hillsides. BLH counts in those areas were low, averaging 0-1 adult BLH per 10 sweeps. No nymphs have been observed.
 - The second scenario is within recently burned areas where the old vegetation growth was cleared, leaving bare ground. There were areas that burned in summer of 2017 (those fields were treated in spring 2018) and in summer 2018. Without the old growth and the recent rainfall, an abundance of filaree has developed. Some peppergrass and *Plantago* was observed toward the end of December. This situation

has created ideal BLH habitat. BLH counts were 1-6 adult BLH per 10 sweeps. No nymphs have been observed at this time.

- Numerous bee boxes have been placed and Program personnel are monitoring their locations and identifying bee brokers/owners.
- Program personnel will continue to monitor for BLH population development and host plant development.



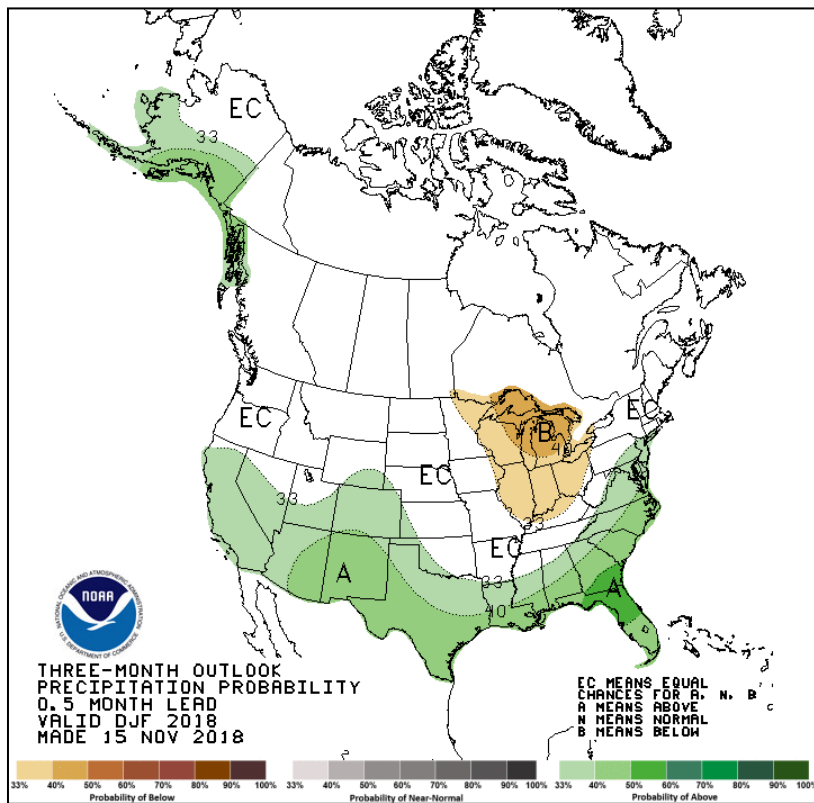
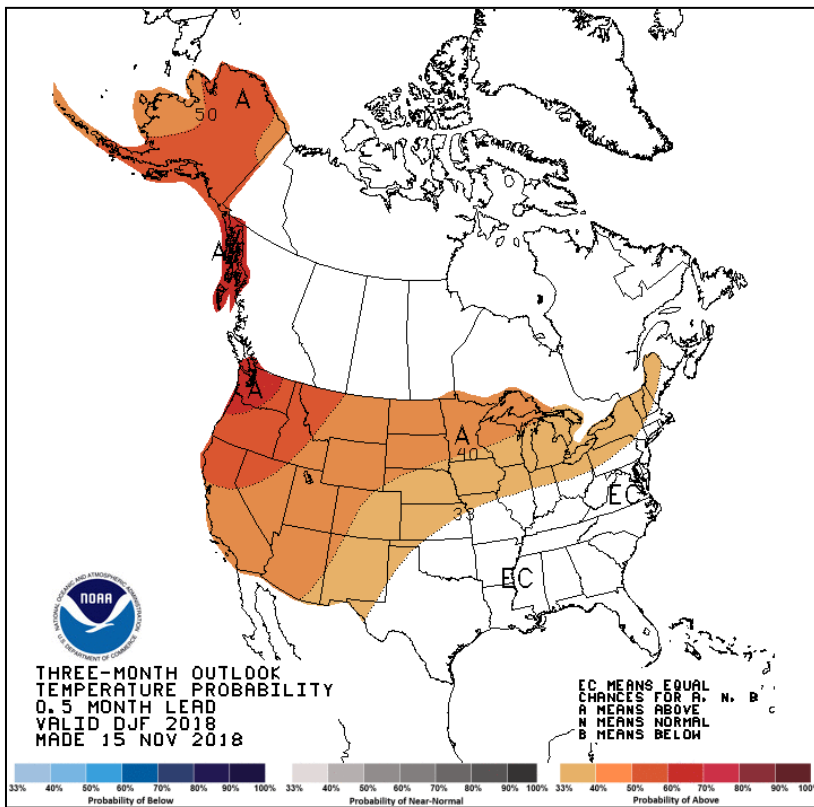
Burned/ideal hillside in background
(dark green patch).
Overgrowth in foreground.

Imperial/Riverside County

- Program personnel conducted surveys in Imperial and Riverside Counties the week of November 26, 2018. Roadsides were clean and mostly free of vegetation. BLH counts were minimal, with overall BLH counts less than 1 adult BLH per 10 sweeps. Host plants were scarce.

Kern County

- In Kern County, above average rainfall has favored widespread host plant germination. Filaree was the most abundant host plant. BLH counts were low at the beginning of December with counts of 0-1 adult BLH per 10 sweeps. By the end of December, counts had increased to 1-4 adult BLH per 10 sweeps. No nymphs have been observed at this time.



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