

Summary of El Niño/La Niña Effects on the Central California Interior (Period 1951-2007)

From data compiled by Chris Stachelski, WFO San Joaquin Valley

Water Year vs. El Niño

Category	Fresno	Bakersfield	Grant Grove	Grant Grove Snowfall
Weak Events (#blo/#avg/#abv)	no correlation (5/0/5)	no correlation (5/0/5)	no correlation (5/0/4)	no correlation (4/0/5)
Moderate Events (#blo/#avg/#abv)	no correlation (4/1/2)	no correlation (3/2/2)	no correlation (3/1/2)	no correlation (4/0/2)
Strong Events (#blo/#avg/#abv)	abv avg (0/0/3)	Abv avg (0/0/3)	abv avg (0/0/3)	abv avg (0/0/3)

Water Year vs. La Niña

Category	Fresno	Bakersfield	Grant Grove	Grant Grove Snowfall
Weak Events (#blo/#avg/#abv)	blo to nr avg (5/4/0)	blo to nr avg (6/3/0)	blo to nr avg (4/4/1)	no correlation (6/0/3)
Moderate Events (#blo/#avg/#abv)	blo to nr avg (4/2/1)	blo to nr avg (5/2/0)	blo to nr avg (5/2/0)	blo to nr avg (4/2/1)
Strong Events (#blo/#avg/#abv)	no correlation (1/1/1)	blo avg (3/0/0)	no correlation (1/1/1)	blo to nr avg (1/2/0)

Average Winter Temperature vs. El Niño

Category	Fresno	Bakersfield	Grant Grove
Weak Events (#blo/#avg/#abv)	blo to nr avg (2/7/1)	nr to abv avg (1/6/3)	blo to nr avg (2/6/1)
Moderate Events (#blo/#avg/#abv)	nr to abv avg (1/4/2)	nr avg (1/6/0)	blo to nr avg (2/4/0)
Strong Events (#blo/#avg/#abv)	nr avg (0/3/0)	nr avg (0/3/0)	blo to nr avg (2/1/0)

Average Winter Temperature vs. La Niña

Category	Fresno	Bakersfield	Grant Grove
Weak Events (#blo/#avg/#abv)	no correlation (2/5/2)	blo to nr avg (2/6/1)	nr avg (1/8/0)
Moderate Events (#blo/#avg/#abv)	nr avg (1/5/1)	nr avg (1/6/0)	nr avg (1/5/1)
Strong Events (#blo/#avg/#abv)	blo to nr avg (1/2/0)	nr to abv avg (0/2/1)	blo to nr avg (2/1/0)

Number of 28° F or Colder Days vs. El Niño

Category	Fresno	Bakersfield
Weak Events (#blo/#avg/#abv)	no correlation (4/2/4)	no correlation (6/0/4)
Moderate Events (#blo/#avg/#abv)	no correlation (5/0/2)	no correlation (4/0/3)
Strong Events (#blo/#avg/#abv)	no correlation (2/0/1)	no correlation (1/1/1)

Number of 28° F or Colder Days vs. La Niña

Category	Fresno	Bakersfield
Weak Events (#blo/#avg/#abv)	no correlation (4/0/5)	blo to nr avg (6/2/1)
Moderate Events (#blo/#avg/#abv)	no correlation (3/0/4)	no correlation (3/2/2)
Strong Events (#blo/#avg/#abv)	no correlation (2/0/1)	no correlation (2/0/1)

Number of Foggy Days vs. El Niño

Category	Fresno	Bakersfield
Weak Events (#blo/#avg/#abv)	blo to nr avg (4/5/1)	no correlation (5/3/2)
Moderate Events (#blo/#avg/#abv)	nr to abv avg (0/3/4)	nr to abv avg (1/3/3)
Strong Events (#blo/#avg/#abv)	abv avg (0/0/3)	nr to abv avg (0/1/2)

Number of Foggy Days vs. La Niña

Category	Fresno	Bakersfield
Weak Events (#blo/#avg/#abv)	nr to abv avg (1/4/4)	nr to abv avg (1/4/4)
Moderate Events (#blo/#avg/#abv)	no correlation (2/2/3)	no correlation (3/0/4)
Strong Events (#blo/#avg/#abv)	abv avg (0/0/3)	nr to abv avg (0/1/2)

How to interpret these tables –

- The period of record covered is 1951-2007.
- Each table summarizes how a particular weather parameter compared to average during El Niño or La Niña events at specific locations in the central California interior.
- The El Niño or La Niña events are subdivided into weak, moderate, and strong categories.
- The values in parentheses are the number of occurrences of below-average, near-average, and above-average types.
- In an attempt to remove outliers, the value in an individual occurrence type must be at least 20% of the total for all occurrences to be considered significant enough to include in a trend for that location.

Example 1: In the Water Years vs. El Niño table, under the Moderate Events category for Bakersfield, the number of drier-than-average years is 3, the number of near-average years is 2, and the number of wetter-than-average years is 2, for a total of 7 occurrences. Because each of the occurrence types was greater than 20%, no correlation exists between moderate El Niño events and seasonal precipitation for Bakersfield.

Example 2: In the Average Winter Temperature vs. El Niño table, under the Moderate Events category for Fresno, the number of cooler-than-average winters is 1, the number of near-average winters is 4, and the number of warmer-than-average winters is 2, for a total of 7 occurrences. The 1 cool winter is only 14% of all occurrences and is considered to be an outlier. Therefore, winter temperatures in Fresno have been classified as near to above average during moderate El Niño events.