



# **Drought and Wet Cycles on the Central Coast and Risks for Livestock Production Systems**

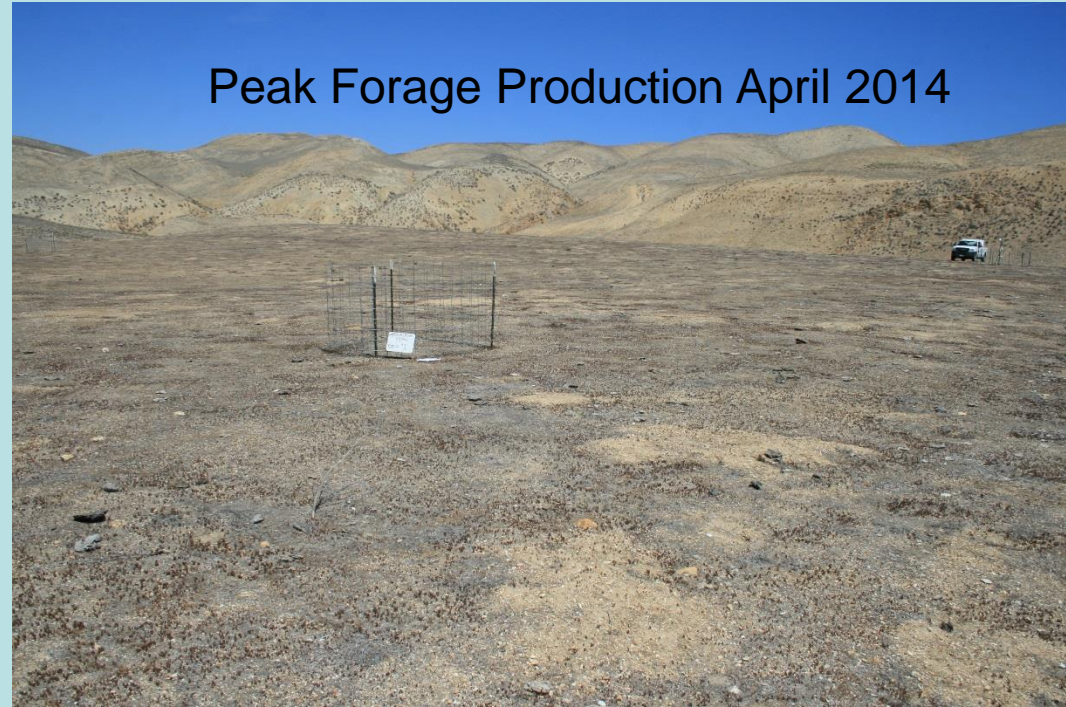
**King City  
August 16, 2017**

**Arroyo Grande  
August 17, 2017**

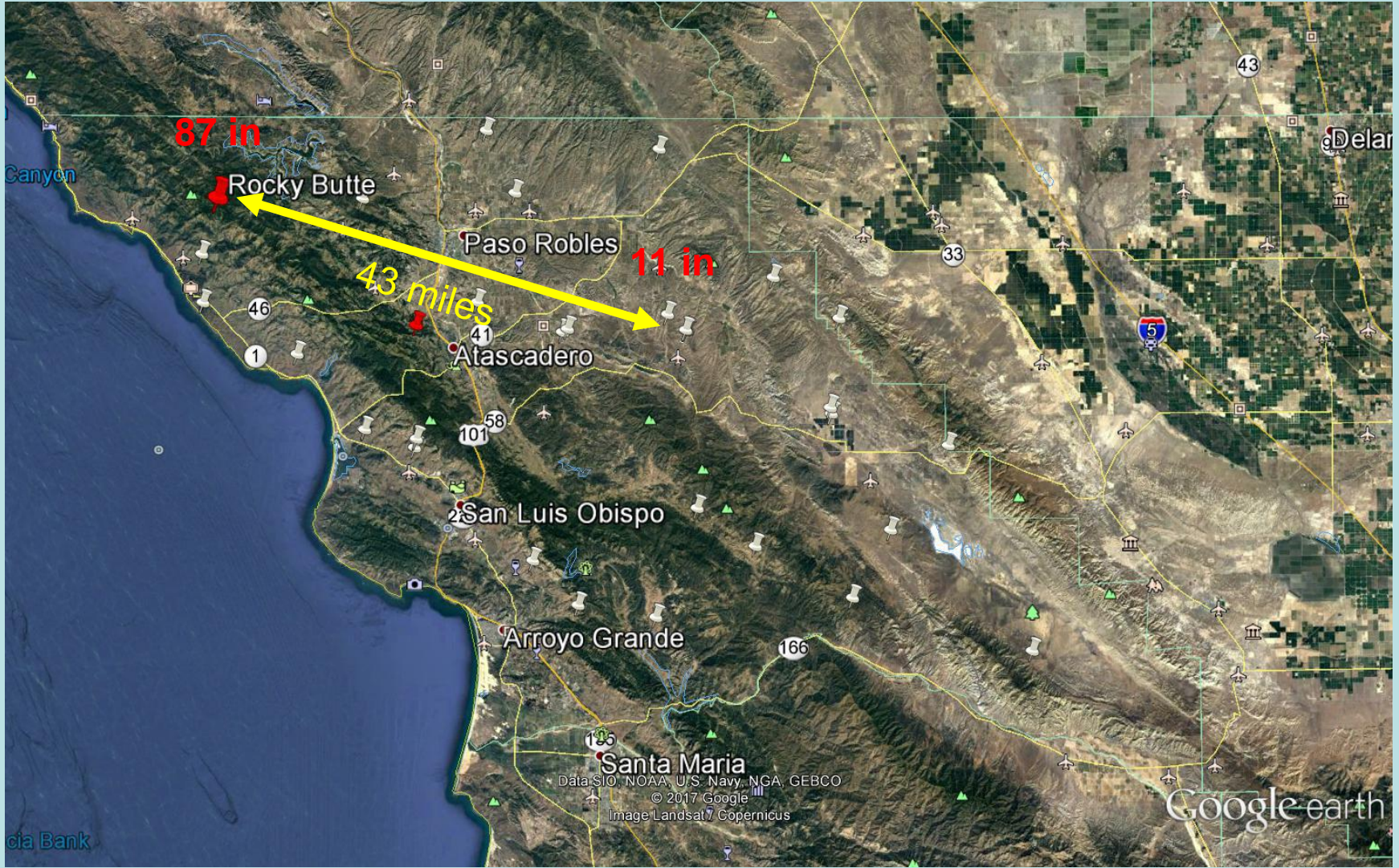
**Royce Larsen  
UC Cooperative Extension**

Phyllis Diller “We Californians are constantly accused of not having seasons, but we do”.

**“We have fire, flood, mud, and drought”.**

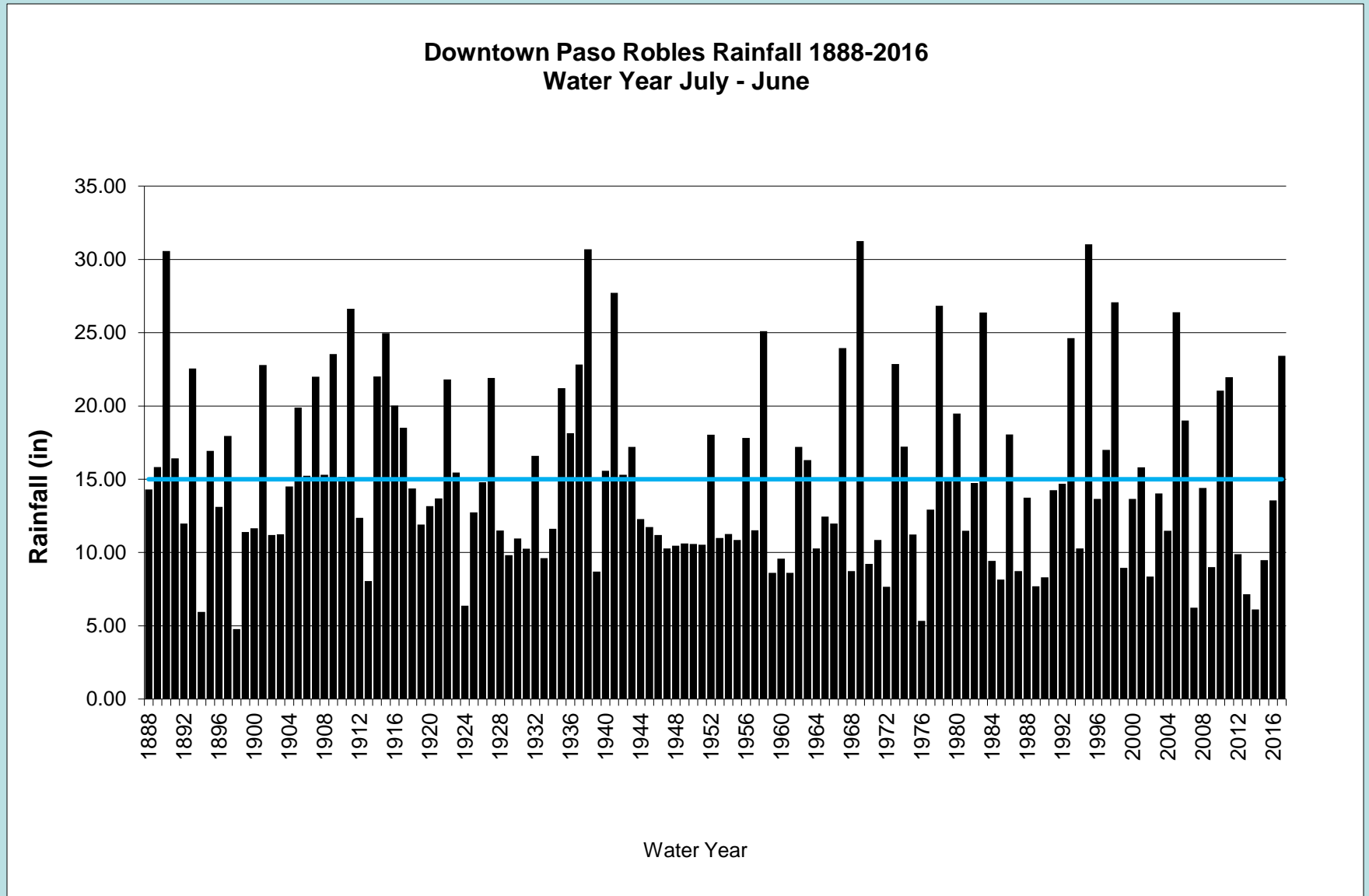


# Rainfall Extremely Variable from Coast to Inland



Rainfall SLO County 2016-2017

# Rainfall Extremely Variable from Year to Year



**October 20, 2005**



**January 31, 2005**



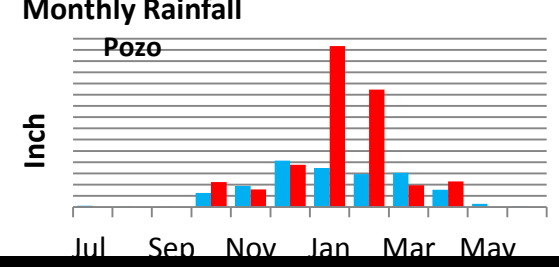
**April 6, 2005**



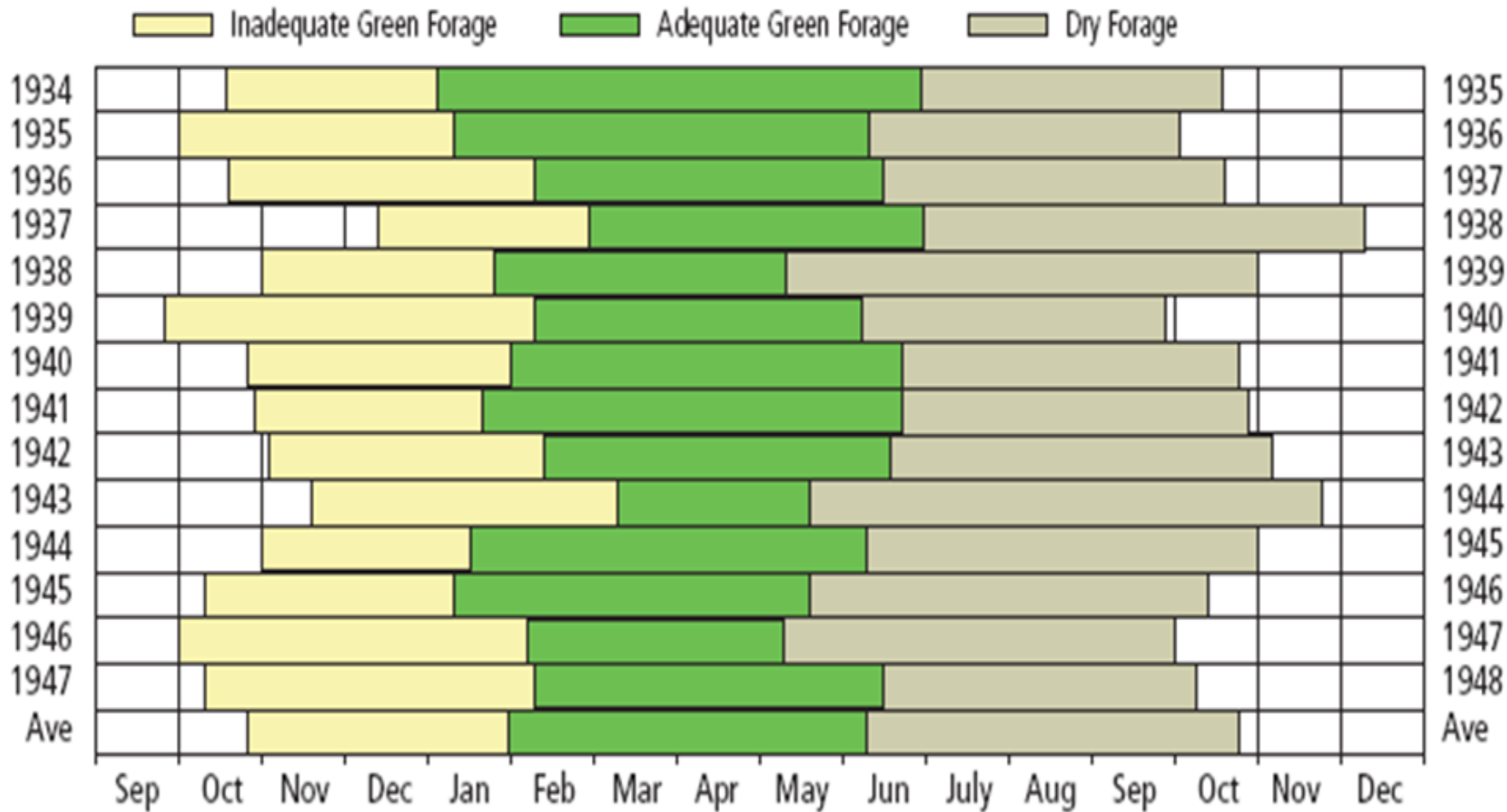
**In general:**

- 1 inch rain to germinate
- No growth, < 40° F
- Slow growth 40° F - 50° F
- Rapid growth 60° F - 80° F

36.5 in.



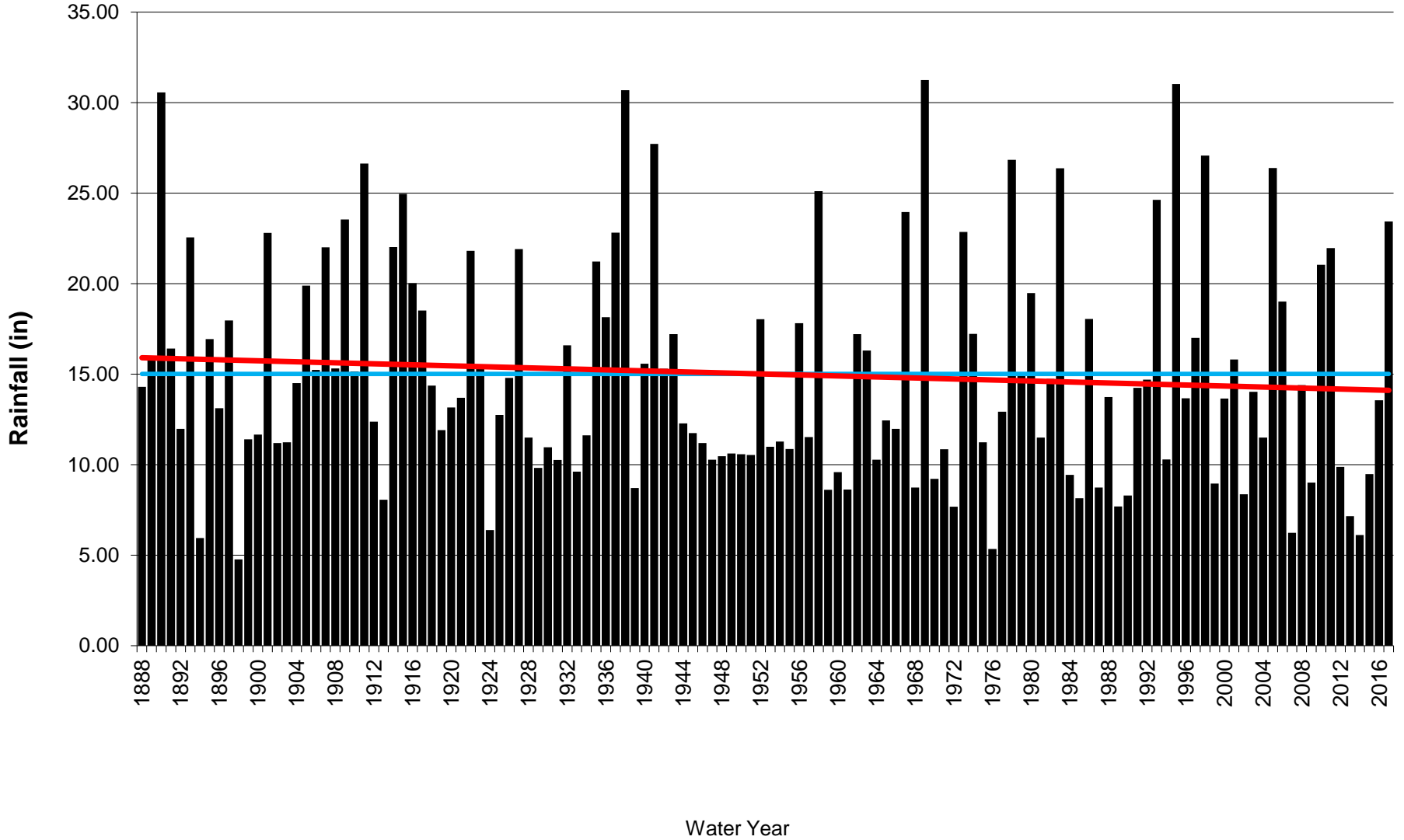
Filaree 7%, Bur Clover 11%, Soft Chess 35%, Foxtail 9%, Annual Fescue 30%, Ripgut 4%, Bulbous Bluegrass 3%



Need Supplement

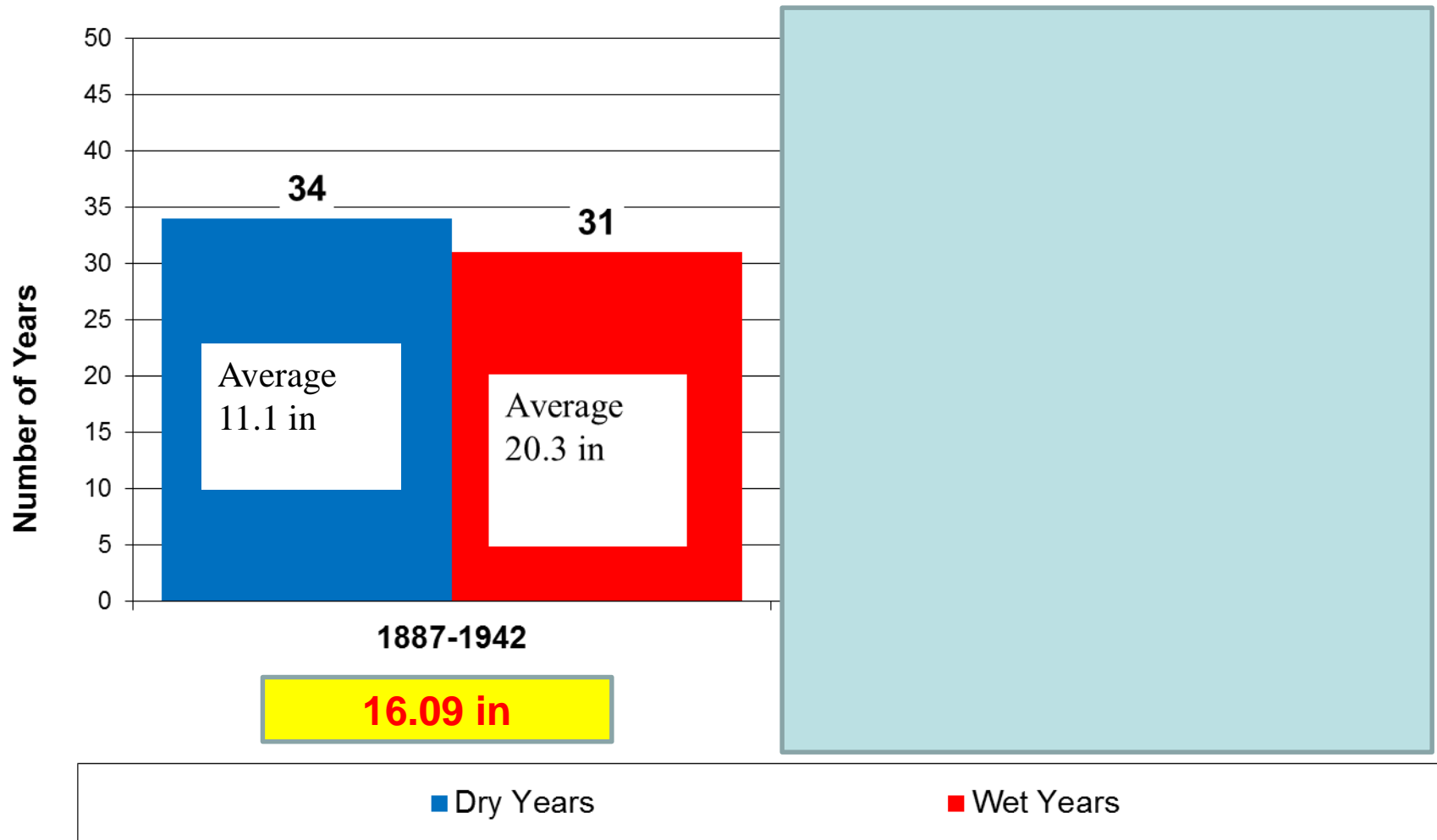
Need supplement

Downtown Paso Robles Rainfall 1888-2016  
Water Year July - June





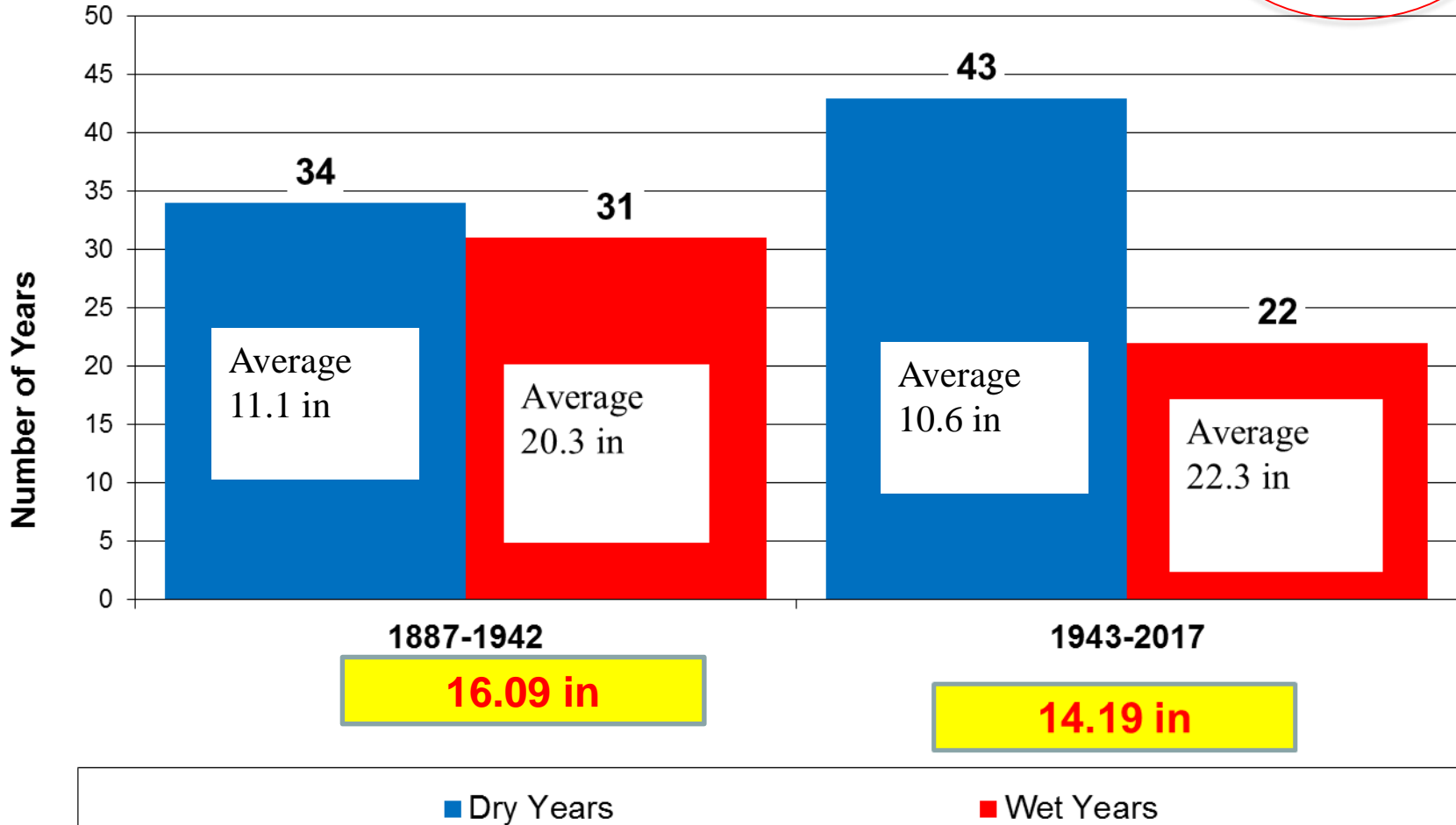
## Downtown Paso Robles Rainfall Information Dry and Wet Years from 1887-1942 and 1943-2017



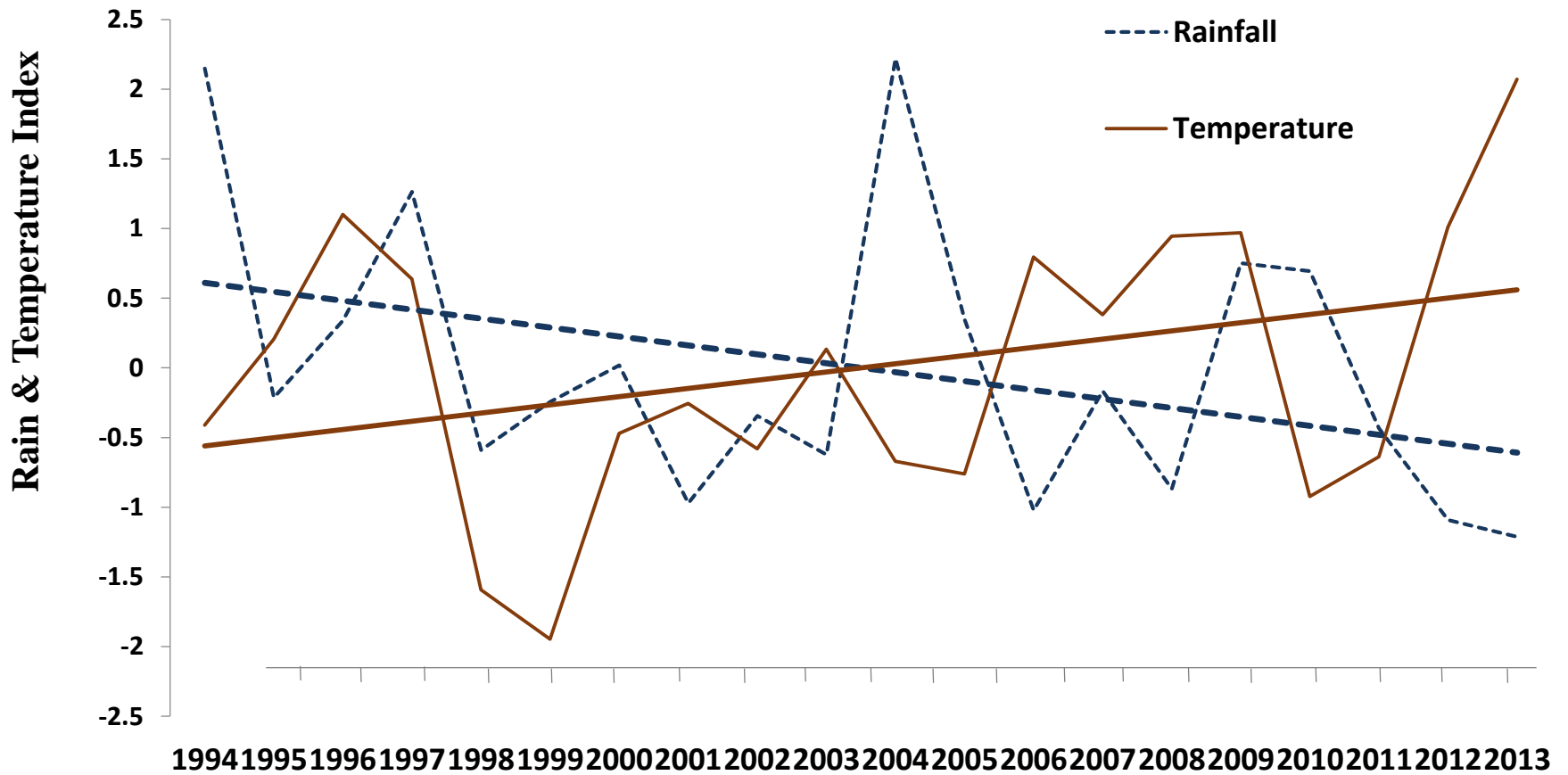
# Downtown Paso Robles Rainfall Information

## Dry and Wet Years from 1887-1942 and 1943-2017

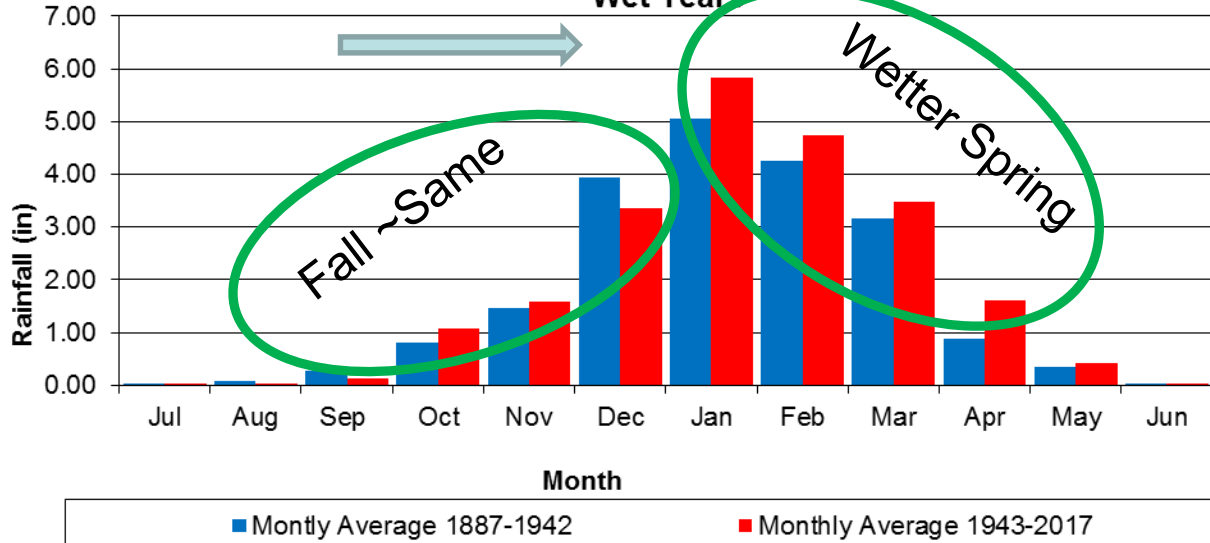
11 of last 16 years below average



# Annual averages for temperature and rainfall from 1994 to 2014 at the Paso Robles City Weather Station.



**Downtown Paso Robles  
Average Monthly Distribution of Rainfall  
Wet Years**

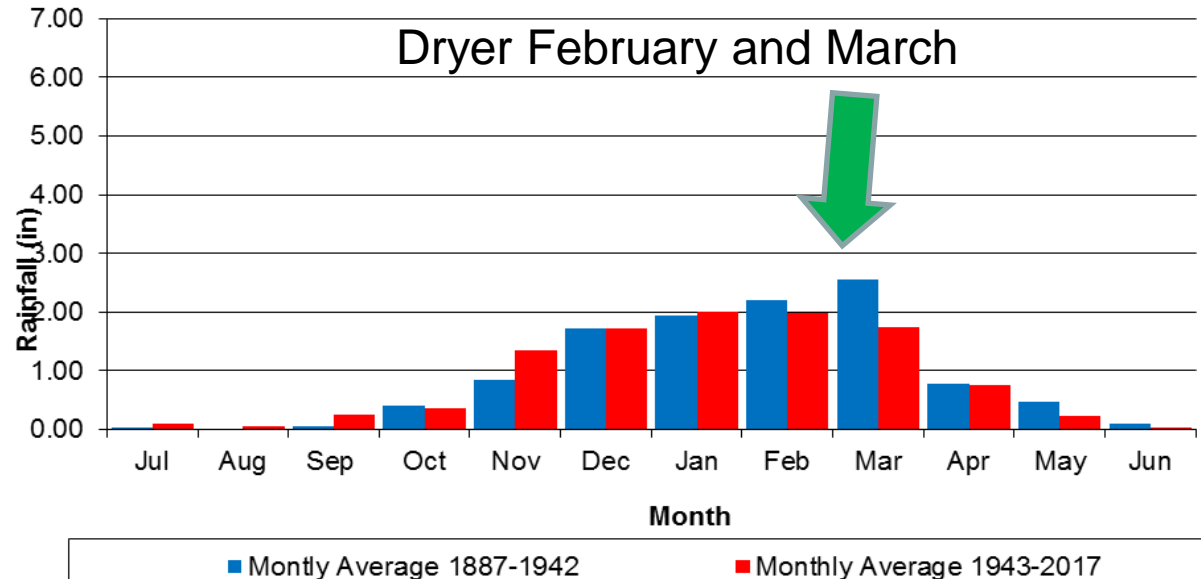


**Wet years are shifting towards a wetter spring**

No benefits of early germination!

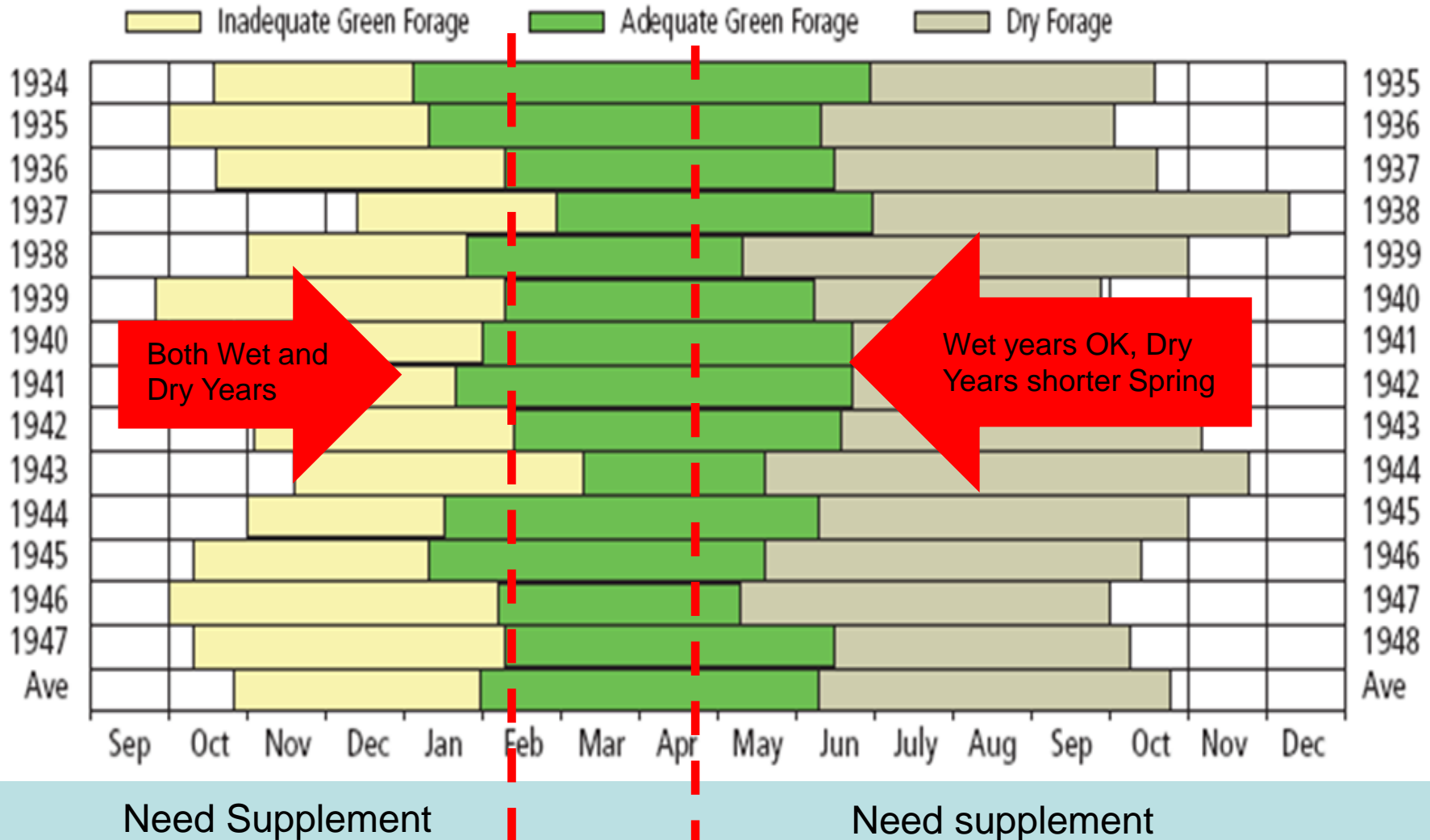
**Dry years shifting towards a drier spring.**

**Downtown Paso Robles  
Average Monthly Distribution of Rainfall  
Dry Years**

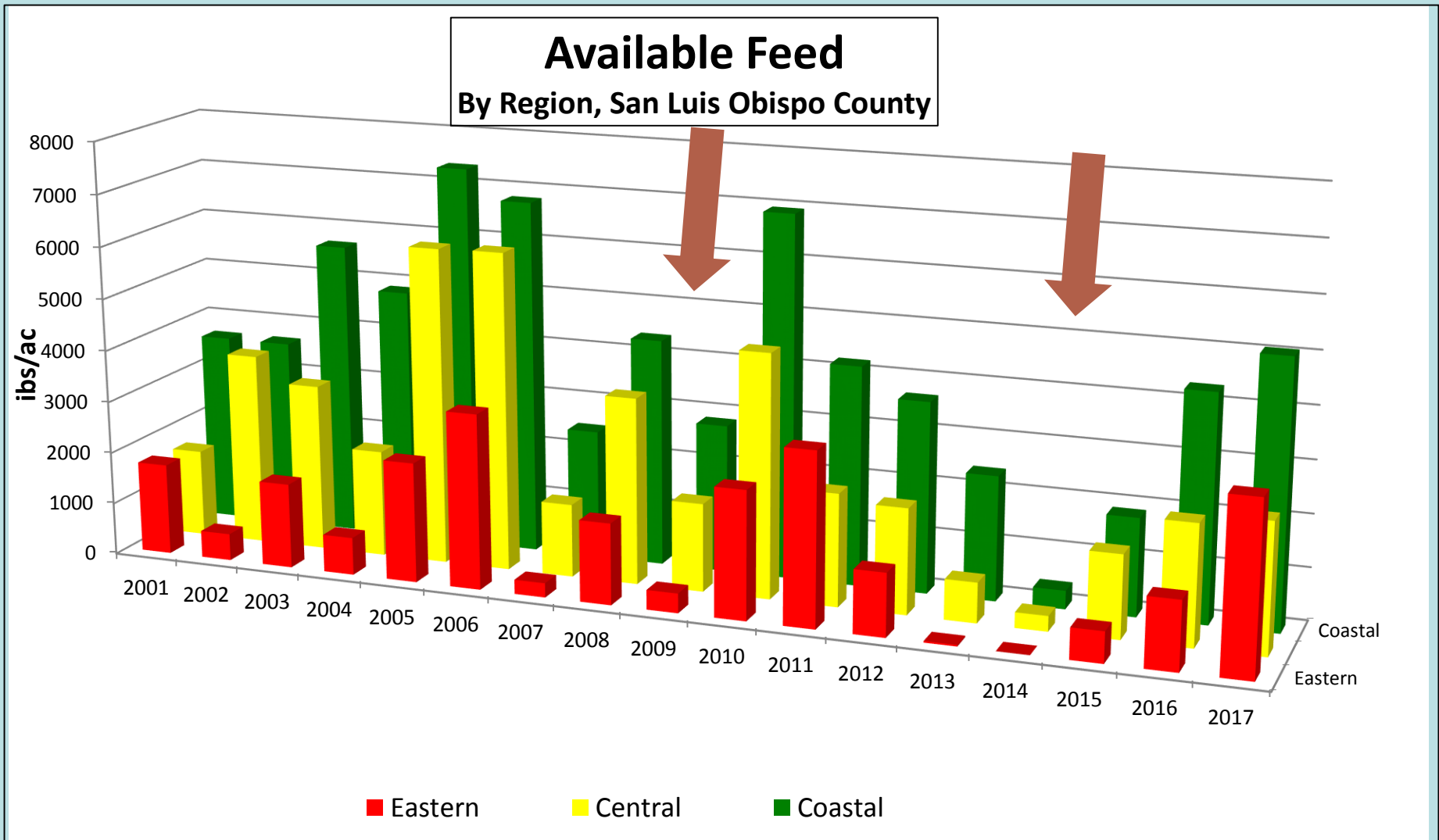


# Livestock condition varies with quality of feed

## Amount of Rain, Timing, Temperature



# Stocking Rates?



60-70% of Livestock Sold or Moved in 2014

Stocking Rates Changing – Available Feed Highly Variable

## Mixture of Forbs and Grasses



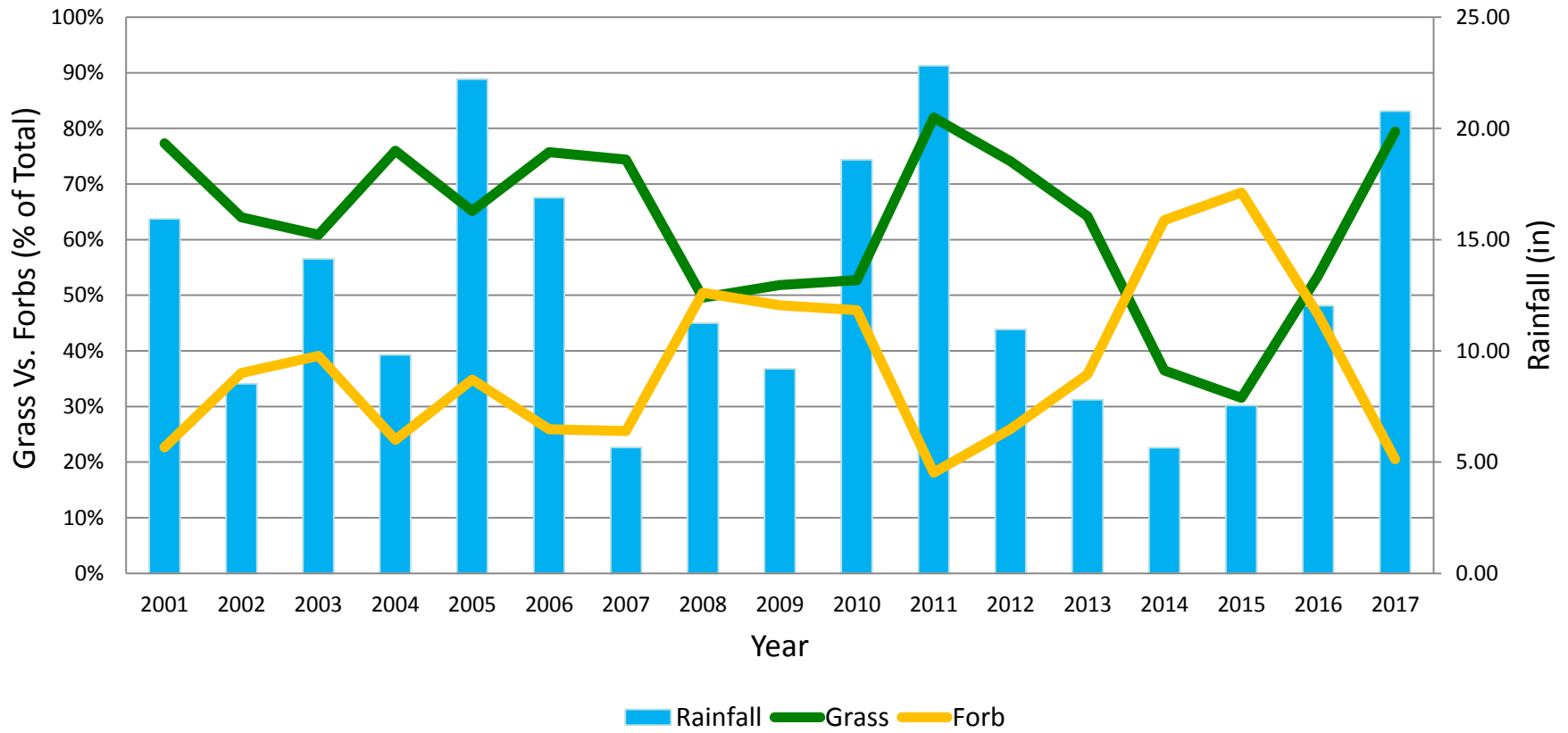
Filaree  
Clovers  
    Sub Clovers  
    Medics

Soft Chess Brome  
Annual Fescues  
Wild Oats  
Ryegrass  
Few Perennials

- **Rainfall Main Driver**
- **Proper Grazing Levels (RDM) to 1) protect soil, 2) improve production and quality of forage and 3) grass vs forbs ratio**

# Nutrition Level Also Changing – Forbs Vs Grass, Forb and Grass Species Changes

## Dominant Forage Average of All Monitored Sites



Forbs dominate during dryer years, while grass dominates during wetter years.



*Stocking Rates Changing – Available Feed Highly Variable*  
*Nutrition Level Changing – Forbs Vs Grass, Forb and Grass Species Changes,*

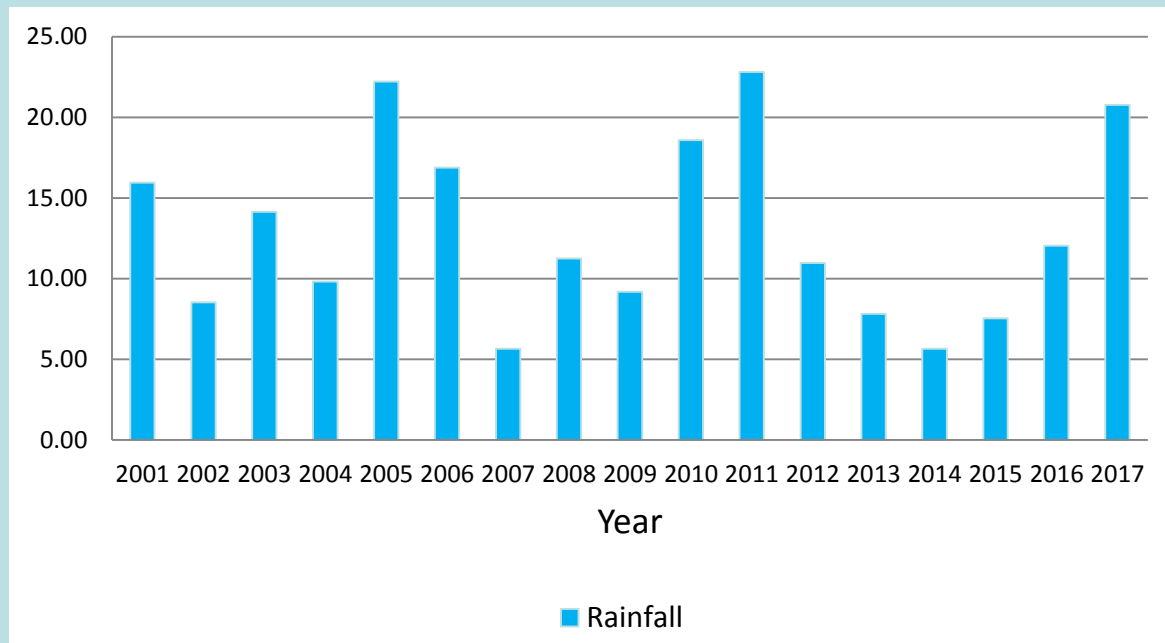
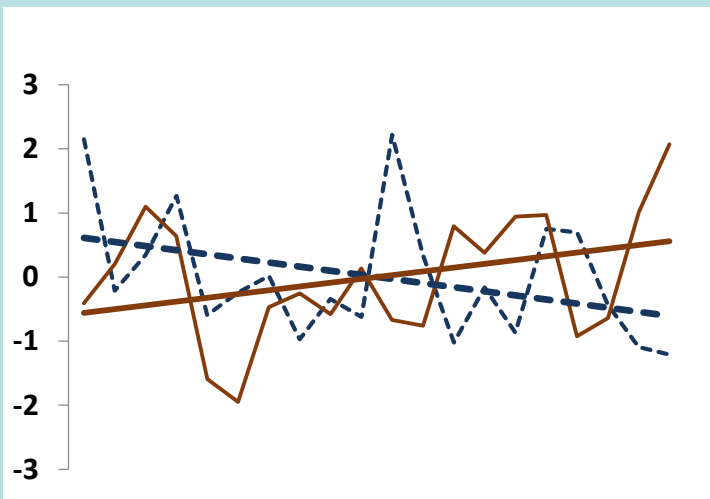
Seeing a lot more of: Red Brome, Ripgut, Foxtail, Black Mustard, Thistles (YST), Fiddleneck, Lupine, Astragalus spp., and Medusahead is coming, others (two seeded milkvetch, peppergrass, tansy mustard)?



**Future: Wet Years Wetter, But  
Less of Them**

**Dry Years Drier, And  
More of Them**

**Temperature Increasing**



# Implications for Ranch Management:

**Cow-Calf, Stockers, or Combination?**

**Variable Time For Marketing Calves?**

**Change Breed, or Kind of Livestock?**

**Alternative Feed Sources During Dry Years?**

**Drought Plan Needed**



**Thank you!**