



Livestock, Range & Watershed

Division of Agriculture & Natural Resources

Counties of San Luis Obispo and Monterey

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Announcements

- **RIA Annual Meeting and BBQ**

The San Luis Obispo County Range Improvement Association will be holding their Annual Meeting & BBQ on Wednesday, March 24, 2004. This will take place at the historic Loomis Families Tar Springs Ranch, off Huasna Road, in rural Arroyo Grande. Social Hour begins at 6:00 pm. Dinner will be \$10 and \$3 for annual dues. Please contact Jean Rotta 489-2512 for further information. Please RSVP by Friday March 19 at 781-5940.

- **Ranch Water Quality Short Course**

There will be a Ranch Water Quality Short Course held in the Live Oak Room, Centennial Park, 600 Nickerson Drive, Paso Robles, CA. It will be from 6:00 – 9:00 pm, on Tuesday April 6, Thursday April 8, Monday April 19 and Tuesday April 20. There will be a field trip with the class, the time and place will be determined at the first meeting. *Please see flyer insert for details.*

Bovine Spongiform Encephalopathy

Wayne Jensen

In light of all the recent news regarding the Bovine Spongiform Encephalopathy or BSE (I prefer not to use the other name used by the press regarding this disease) I thought it appropriate to provide the following update developed by the State of California, Department of Food And Agriculture, Animal Health and Food Safety Services, Animal Health Branch. It provides a good overview of the disease and the actions taken to prevent this disease from occurring in California

What is Bovine Spongiform Encephalopathy?

Bovine Spongiform Encephalopathy (BSE) is a fatal neurological disease of cattle first recognized in the United Kingdom (U.K.) in 1986. This disease is a transmissible spongiform encephalopathy similar to scrapie in sheep and goats, chronic wasting disease in elk and spontaneous Creutzfeld-Jacob disease (CJD) in humans.

A new human disease known as variant CJD (vCJD), first diagnosed in the U.K. in 1996, has claimed 153 human lives to date. Most scientific evidence supports that vCJD is caused by the same agent that causes BSE. Evidence suggests that the BSE agent may have been transmitted from cattle to man through the consumption of products contaminated with the infectious agent.

As a result of BSE, more than 5.8 million cattle have been diverted from the human food chain into rendering and incineration in the U.K. BSE has affected over 200,000 cattle in 24 countries to date. Recently, BSE has been diagnosed in one beef cow in Canada and one dairy cow in Washington State.

In the U.S., BSE has led to a ban on non-ambulatory disabled (downer) cattle and specified risk materials (from cattle over 30 months of age) in human food. Furthermore, BSE has severely affected export markets for beef and beef products, and dramatically affected consumer confidence.

What are the Signs of BSE?

BSE has an incubation period of 2 to 8 years. Signs begin with changes in temperament, such as nervousness or aggression. Cattle become progressively uncoordinated and lose condition despite continued appetite. There is no treatment; affected cattle die 2 weeks to 6 months after the first signs.

What Causes BSE?

The agent causing BSE is not fully characterized, but most evidence suggests it is an abnormal protein known as a prion. This agent is smaller than most viruses and is very resistant to heat, ultraviolet light, radiation, and disinfectants. It causes no detectable immune or inflammatory response.

How is BSE Spread?

The BSE agent spreads among cattle principally through feed containing meat and bone meal made from rendered ruminant products from infected animals. The U.S. and Canada banned these products in ruminant feed in 1997 to prevent BSE transmission.

Preventing the Entry of BSE

The United States Department of Agriculture (USDA) banned importation of live ruminants and most ruminant products from BSE affected countries in July 1989. In December 2000, the USDA banned the importation of all rendered animal products from Europe, regardless of species. If you have knowledge of the illegal importation of animals or animal products or the feeding of prohibited materials, please call the appropriate numbers listed on this brochure.

Surveillance for BSE in the U.S.

Surveillance began in 1990 and consists of examining brain tissue from cattle showing neurological signs and a targeted sample of high risk cattle. More than 2,200 brain samples from

California and 20,526 samples nationwide were examined for BSE during 2003.

The U.S. Feed Ban

Since August 1997, the Food and Drug Administration has prohibited the use of protein derived from mammalian tissues (with certain exceptions including milk, blood, porcine and equine products) in ruminant feed. Ruminant means any animal that has a four-chambered stomach, including cattle, buffalo, sheep, goats, deer, elk and antelope. Feed manufacturers are required to label any feed that contains prohibited materials with the statement, "Do not feed to cattle or other ruminants".

Compliance within California

All feed-manufacturing facilities in California have been inspected and are compliant with the feed ban. As of December 2003, 99% of the feed-manufacturing facilities in the U.S. are in compliance with these requirements.

However cattle producers are key in preventing BSE in the U.S. by ensuring that feed containing rendered mammalian tissues is NOT fed to ruminants.

Protecting California Consumers

As of December 30, 2003, Non-ambulatory disabled cattle (downers) are not permitted to enter the human food supply. Specified risk materials; the skull, brain, trigeminal ganglia, eyes, vertebral column, spinal cord and dorsal root ganglia from animals over 30 months old are prohibited in the human food supply. The small intestine and tonsils from cattle of any age are also banned from the human food supply. Scientific evidence shows that muscle meat and milk from these animals is safe. For more information regarding how this will be implemented at time of slaughter you can access the website of the Food Safety and Inspection Service (FSIS) for current information at <http://www.fsis.usda.gov/oa/topics/bse.htm>.

What Should Producers Do?

Comply with the feed ban - ***do not feed products containing prohibited materials to ruminants.*** Be diligent that commodities you feed do not contain any prohibited materials (e.g., salvaged pet foods).

Keep copies of all feed records – invoices and labels – for one year, and have them available for inspection. Farm inspections help ensure that prohibited materials are not being fed to ruminants, and regulatory action can be taken under the Federal Food, Drug and Cosmetic Act. Establish an individual animal identification plan for your herd, and maintain accurate records when animals enter and leave the herd.

Report cattle with neurological signs to your veterinarian

Humanely euthanize non-ambulatory cattle. Guidelines are available from CDFA and I have copies of this information here at my office. Dispose of carcasses appropriately, such as with a licensed renderer (if possible) or use other legal methods. Ensure that unsafe meat does not enter the human food chain. ***For BSE concerns and questions, call: CDFA Animal Health Branch. The office nearest to us is in the Tulare District (559) 654-3500.***

What Should California and San Luis Obispo County Expect When West Nile Virus Gets Here?

Richard Little, Deputy Agriculture Commissioner, San Luis Obispo County Agriculture Department

Since the summer of 1999 when West Nile Virus (WNV) was found in New York City, New York, the Center for Disease Control (CDC) has reported more than 13,400 clinical (symptomatic) cases. About five hundred persons have died from the disease.

WNV is a virus that is usually transmitted by mosquitoes. Most people who are infected with the West Nile Virus will not have any symptoms of the illness. It is estimated that 20% of the people who become infected will develop West Nile fever. Mild symptoms include fever, headache, body aches, and occasionally a skin rash on the trunk of the body and swollen lymph glands. The symptoms of severe infection (West Nile Encephalitis or Meningitis) include: headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and in some cases resulting in death.

All residents of areas where virus activity has been identified are at risk of contracting West Nile Encephalitis, although persons over 50 years of age have the highest risk of this severe disease.

How can you protect yourself from WNV?

Minimize exposure to infected mosquitoes. Take protective actions such as wearing long-sleeved shirts and long pants when outdoors. Other measures are staying indoors at dawn, dusk, and in the early evening, which are peak mosquito biting times. Install or repair window and door screens so that mosquitoes cannot get indoors. Help reduce the number of mosquitoes in areas outdoors by draining sources of standing water. In this way, the number of places mosquitoes can lay their eggs and breed is reduced. At least once or twice a week empty water from flower pots, pet food, and any other water dishes, such as birdbaths, swimming pool covers, buckets, barrels, and cans. Check for clogged rain gutters and clean them out. Remove discarded tires, and other items that could collect water.

Be sure to check for containers or trash in places that may be hard to see, such as under bushes or under your home.

Another personal preventive measure that you and your family can take is to apply insect repellent containing DEET sparingly to exposed skin. The more DEET a repellent contains the longer it can protect you from mosquito bites. A higher percentage of DEET in a repellent does not mean that your protection is better, but does offer a longer protection period. A repellent with a DEET concentration higher than 50% does not increase the length of protection. Choose a repellent that provides protection for the amount of time that you will be outdoors. Repellents may irritate the eyes and mouth; avoid applying repellent to the hands of children. Remember whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product label.

In San Luis Obispo County we do not presently have a mosquito control program and we are one of two counties in this area of California that does not have a program. Why is this important now? At the National Conference on WNV held a couple of weeks ago in Colorado it was stated, "When WNV occurs in the region, residents living outside of

those areas that have a mosquito control programs were 40 times more likely to become infected with WNV than those residents who lived within those areas having control programs.”

The County Public Health Department, Environmental Health, and the Agriculture Department will be making a proposal to our Board of Supervisors to start a mosquito control program. We believe the best way to protect the residents of SLO County is to be prepared to engage in mosquito control when we find the WNV and to educate the citizens on how to protect themselves from mosquitoes that can carry WNV. We understand the serious budget and economic situations we all face while asking for funding to do this program, but the health and safety of our community is foremost.

Fire in California’s Oak Woodlands

Royce Larsen

The following article is a summary taken from a draft paper by Doug McCreary, Integrated Hardwood Range Management Program, University of California, Berkeley.

Everyone who lives in California is aware that fires regularly occur in our state and can have devastating consequences. This past year (2003) we were again reminded by the fall fire storms in Southern California that despite all of our long-standing efforts to suppress and control fires, we are still at the mercy of the Mother Nature and during extreme fire weather, there is little we can do to prevent, or even contain, fires that do start. Three quarters of a million acres had burned and nearly 4000 homes were destroyed. Though many vegetation types were burned, oak woodlands and coastal sage scrub communities were some of those most affected.

We have seen many fires on the Central Coast such as the disastrous “Highway 41 Fire”, which consumed over 50,000 acres of oak woodland-chaparral habitat between Morro Bay and San Luis Obispo, and burned 37 homes, 50 other buildings, 51 cattle, 48 motor vehicles, nine boats, 14 trailers, and seven tractors.

Natural Fire Frequency

Native California oaks evolved in a Mediterranean climate where natural fires burned regularly, every 40-100 years. In central and southern California coastal shrublands, fire frequencies prior to the arrival of Europeans were more frequent than would have occurred naturally, presumably because Native Americans regularly used fire to convert shrublands to grasslands, and in the 1800s, European settlers continued this practice.

Ecological Role

Fire is viewed as an essential element of oak ecosystems. However, since the early part of the 20th century, fires have been aggressively suppressed in California, resulting in far fewer fires. The significant reduction of fire as an ecosystem process had significant consequences, allowing an accumulation of fuels that had previously been consumed during regular, low-intensity fires. In addition to a build up of woody vegetation in the understory, the suppression of fires also promoted an increase in tree density, and some open, savannah-like woodlands converted to vegetative communities with a greater shrub component. In some locations, there were significant increases in dead and down woody material and an increase in “ladder” fuels connecting ground vegetation to the tree canopies.

Fire effects on Oaks. Unlike most conifer species, oaks have evolved mechanisms to survive periodic burning. Moderate and even low-intensity fires can scorch all the leaves on woody plants. For most conifers such damage is usually lethal. Oaks, on the other hand, suffer little long-term damage from the burning of their foliage. If the fire happens early in the growing season, the trees may re-grow new leaves before autumn and, by the end of the year, it may be difficult to tell which trees were scorched in the fire. If fires occur in the summer, the oaks usually do not produce a complete crop of new leaves until the following spring. While some new foliage growth may occur in the summer or early fall following the fire, the soil is generally too dry to support wide-scale foliage growth at this time of year.

Following such fires, the trees usually appear dead, since all leaves are brown and brittle and the boles may be blackened. But many of these trees will survive and it is important that landowners

understand this, since some may want to cut these trees down, believing they will not recover. It is therefore generally a good practice to wait at least a year after the fire to determine if a tree has been killed and should be removed.

More severe fires can kill the tops of oaks if the cambium has been heated to lethal temperatures. Even if an oak has been killed, most will sprout from their base the following year. Sprout-origin trees initially produce many new shoots. As these sprout clumps age, they thin out, although even mature trees that started as sprouts usually have multiple trunks. In general, live oaks are more vigorous sprouters than deciduous oaks, and smaller diameter trees are more likely to sprout than large diameter ones, although all California oak species will sprout. Oaks in moister areas also generally sprout better than those growing on dry sites. A Fire Effects Information Database is available online through the Rocky Mountain Research Station Web site: <http://www.fs.fed.us/database/feis/>.

Planned or Prescribed Fire

Some believe that extensive use of planned or intentional fires is necessary to reduce fuel loads to what they were in California prior to the arrival of Europeans and, consequently, the likelihood of large and destructive fires. Planned or prescribed fires are intentionally set so as to mimic what might naturally occur if fires were allowed to burn. However, they are set under very controlled conditions to minimize the chances of the fire escaping. In addition to reducing fuel loads, planned fires are also used to control noxious weeds, to open areas up so that forage growth is enhanced, and to promote the establishment of more desirable plant species.

However there are concerns (smoke, structure damage, etc.) about the use of prescribed burning. Therefore considerable effort currently goes into reducing fuels by means other than fire. Treatments such as hand clearing or mastication are commonly used, but these practices are generally more expensive than burning and there are risks associated with them as well (i.e. chainsaw injuries). The California Department of Forestry and Fire Protection (CDF) now treats almost as many acres using these practices as they do using fire.

The condition of oak woodlands today in terms of climate, fuel loads, and ignition sources suggest that large catastrophic fires will continue to occur in the oak woodlands of California. As stated before, it is not so much “if” as “when” these fires will take place. Wildfires are an inevitable, and ecologically important, process within oak woodland ecosystems.

Average Rainfall And Perennial Grass Seeding

Royce Larsen

We often show the annual rainfall of an area as an “average”. But is the “average” the best way to describe annual rainfall? Data from Paso Robles shows an average of 14.75 inches from 1931-2003, based on the water year July – June (**see figure 1**). The precipitation ranged from 5.35 to 31.25 inches during those years. As shown in Figure 1, there is a lot of variation with annual precipitation. The “average” should mean that half of the years are above, and half below 14.75 inches. However, the wet years tend skew the “average” upward. In Paso Robles, six out of ten years of annual rainfall were below the “average”.

The median value could also be used for describing the data. The median is the midpoint of all values (that is 50% of the years are above, and 50% are below). In this case the median equals 12.15 inches, which is significantly below the “average” of 14.75 inches.

So Why Be Concerned

This may be very important when it comes to planning, for example, a perennial grass seeding project. There is an interest in the Central Coast to establish perennial grasses to increase the green forage period. It is recommended to have 15 or more inches of annual rainfall to get most perennial grasses established. In the Paso Robles area, as well as many of our inland areas along the Central Coast, we only get 15 or more inches of annual rainfall 4 out of 10 years. This may greatly hinder the probability of perennial grass establishment for the other 6 out of every 10 years.

This does not mean that perennial grasses could not be established, but rather careful planning needs to occur to increase the probability of success.

Annual precipitation does follow cycles of wet and dry years. If you could predict when the wet years would occur, then the probability of establishing perennial grasses would be greatly increased. It usually takes 2-3 years to get perennial grasses established. Predicting rain is difficult at best, especially 2-3 years in a row with 15 inches or more.

Another way to improve the probability of success would be moisture conservation. Moisture conservation can be accomplished by fallowing for a growing season, hence increasing soil moisture the following year. Good weed control during the fallow period and post plant period can also help improve the success of a perennial grass seeding. Pre-plant weed control can be accomplished by either herbicides or mechanical means. Post plant weed control would consist of herbicide treatment for broad-leaved weeds. In short, taking 18 or more months of weed control, seedbed preparation and soil moisture conservation, may greatly enhance the probability of a successful perennial grass seeding in areas of limited rainfall.

Depending on ones willingness to take risks, perhaps other species than perennial grasses may be

Royce Larsen,
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San Luis Obispo and Monterey Counties

more desirable to improve forage on rangelands. For example some medics, sub clovers, and annual grasses do very well with only 10 inches of annual precipitation. Looking at the data from Paso Robles, 8 out of every 10 years would have an expected annual rainfall of 9.6 or more inches.

The probability of success with these species would most likely be better than for perennial grasses in the Paso Robles area. Other inland areas in the Central Coast would follow similar patterns, but amounts may vary. Each area should be checked for annual precipitation amounts.

Current Drought

Some years are much drier than others. So far this year we are way below “average”. There has been about 6 inches in Paso Robles through the time of this printing.

Normal precipitation through this time should be about 11 inches. Even though we only have about 50% on average, there is still time for more precipitation. March has generally been a wet month with an average of 2.2 inches, But there has been as much as 12.31, but also as low as 0.0 inches, (see figure 2).

Wayne Jensen,
Livestock & Natural Resources Farm Advisor
San Luis Obispo and Santa Barbara Counties



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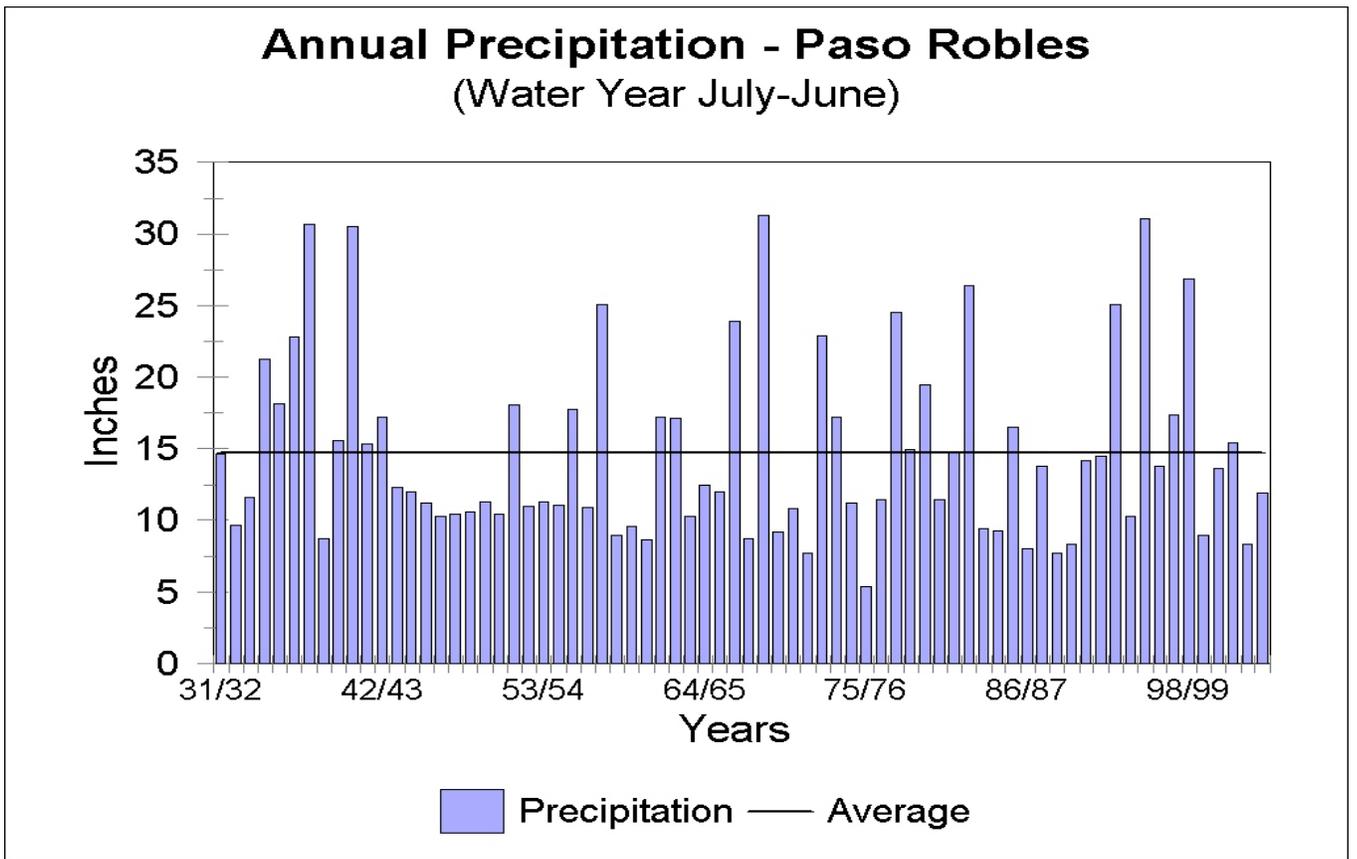


Figure 1. Annual precipitation at Paso Robles City. Based on the water year (July – June, 1931/1932 - 2002/2003).

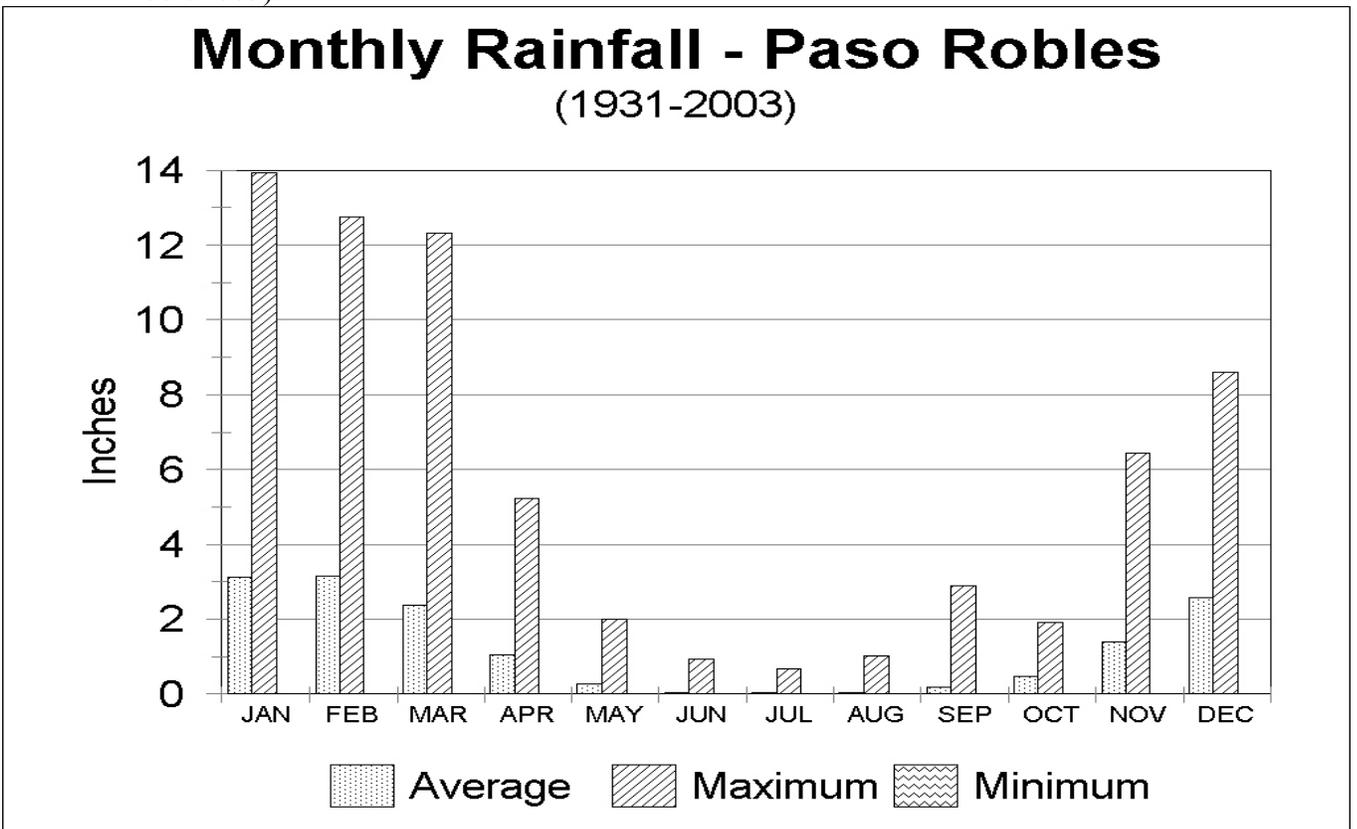


Figure 2. Monthly precipitation from Paso Robles. Average, maximum and minimum recorded between 1931 and 2003. Note, there has been zero precipitation recorded for every month.

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Livestock, Range, and Watershed



Pulling together when the chips are down