

Bluebonnet

Ellen and I have been trying to figure out a way to pass on information about plants and animals to our group. I am giving this a try. Remember, I am a teacher, so just telling you the name of a plant is not enough....I have to teach!!????



It was small, not big enough to attract much attention but it was the first bluebonnet I had seen this winter. There was a time when the end of January would be the middle of the season for bluebonnets. They used to begin blooming along the river in November. But those were moist years back then. This year, to see a blue bonnet in mid-January is uncommon.

According to Texas legend bluebonnets are the result of the sacrifice of a young Indian girl many years ago, when the Comanche rode over this land. The Comanche were among the fiercest warriors in the world but not even the bravest Comanche could defeat the drought that gripped the land. No rain meant no grass and the deer and other wildlife were starving, which meant the Comanche were starving, too. The medicine men called for prayers and sacrifices. The little girl watched as the desert and her people suffered. She

listened to the prayers and watched the sacrificial offerings were made. Then she sacrificed her most treasured possession, a doll her brother had carved from the heart of a cottonwood limb and decorated with colorful bits of cloth: blue, red, yellow, and white. To her, giving up this doll should truly bring the rain but she cried as she gave it to the priests for burning. Soon a gentle rain fell over the parched country and lasted for days. As the drought was broken the grass grew tall and wildlife became abundant. One morning thousands and thousands of bluebonnets appeared across the land. The people were amazed at the beauty of the flower and the little girl rejoiced: the colors of this new flower were the same colors of the doll she sacrificed. Now the doll was back but this time in the color of the thousands and thousands of the bluebonnet!

The legend has some basis in fact: the myriad wildflowers we see blooming after a drought has broken are a result of soaking rains. The seeds from one generation of some wildflowers, including the bluebonnet, can wait through desert droughts as long as 20 years. Bluebonnets, and a number of other desert wildflowers are called ephemerals, a Greek word meaning short lived. In durable seed form they can endure the extremes of a desert environment for long periods of time, seemingly unaffected by high temperatures and drought conditions. Only in favorable conditions do these seeds germinate, blossom, and produce the seeds for the next generation, sometimes within a remarkably short period of time.

Ephemerals can be divided into four classes depending on when they germinate and produce seed. There is one group that germinates and blooms after summer rains. These may appear within 3 days and are characterized by very rapid growth. They usually require high day and night temperatures. The winter group of ephemerals germinates after the winter rain but grows slowly and blooms in the late winter or spring. For the most part this group requires cool day and night temperatures, the opposite of the first group. Rarely will these two groups bloom simultaneously. A third group includes the bluebonnets; they will germinate after the summer rains but do not bloom until winter when temperatures are more moderate. The fourth group is pretty much of a catchall group, consisting of those independents that germinate and grow as long as the temperatures are favorable and there is enough water.

How do these flowers know when to bloom? About 40 years ago a researcher in California began unraveling some of the mysteries surrounding the ephemerals. One of the first things he discovered was that the plants practice a form of birth control! A chemical compound within each seed acts as an inhibitor to prevent germination. Until the chemical is removed the seed remains dormant. Rain seems to be the chief means of removing the chemical; enough rain washes the compound away. However, not just any old rain will lead to successful germination. While short showers may wash away small amounts of the chemical, the seed is capable of replacing it slowly. Enough rain must fall within a short period of time to remove all of the inhibitor. Torrential rains, a

regular occurrence in summer cloudbursts, do not necessarily trigger germination since most of that water falls too quickly to soak deep into the ground. The chemicals of some seeds may be removed by bacterial actions. Such a condition occurs only after prolonged soaking. There are still lots of ifs, ands and buts connected with understanding ephemerals, but the fact remains that in some years there will be a multitude of color in winter depending on what happened the previous summer and fall.

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