

Second, is the absence of fire in controlling the growth of woody plants. An early account (1528) by the shipwrecked Cabaza de Vaca would suggest that Indians routinely and indiscriminately used fire as a management tool in Texas prior to European settlement. From his diary comes this quote: (Nunez 1905)

“The Indians go about with a firebrand, setting fire to the plains and timber so as to drive off the mosquitos, and also to get the lizards and similar things they eat, to come out of the soil.”

As the result of this human activity as well as fires set by lightning, a vegetation dominated by mid and tall grasses extended over vast areas of Texas. In the hill Country

the cedars, which were easily killed by fire were limited to steep canyons. Liveoaks were scattered as large trees surviving the fires or in mottes, resprouting following burns. Other woody plants including mesquite, were restricted to areas in the canyons and along streams or in clusters of sprouts in an open grassland. As woody plants, especially cedar and mesquite increased, increased, less water moved into the underground aquifers to recharge springs..

The third reason for the loss of our springs in the loss of better grasses which allow more water to infiltrate into the soil. Heavy grazing by livestock has caused the replacement of mid-grasses with more resistant short grasses, woody plants, weeds, and occasionally, bare soil. Infiltration is best where the soil is covered with deep-rooted grasses such as Little bluestem, Big bluestem, Indiangrass, Switchgrass and Sideoats grama. As these plants are replaced, the water more readily moves over the ground surface instead of moving into the soil. Without vegetative cover the soil surface can heat up 30-50 degrees hotter than shaded ground to disrupt life in the soil and promote soil erosion when rain occurs. Loss of vegetative cover due to excessive grazing, drought, or fire results in increased erosion and sedimentation in rivers and lakes. As the amount of erosion increases the amount of water that infiltrates into the soil decreases. This in turn decreases the number of animals the land will support.

THE SOLUTION:

1: Manage woody plants and restrict cedars by using the technique called **“brush sculpting”** to increase forage for livestock, assist wildlife, care for endangered species, protect riparian areas and reduce soil erosion..

2: Do not overgraze. Reduce livestock numbers and **rotate livestock** among pastures and develop a good range. Use the rule of thumb of **“grazing half and leaving half”** when it comes to forage and provide an extended period of rest to allow plants a time to mature and strengthen its roots.

3: Be wise water users. Xeriscaping will reduce water and pesticide usage; Reduce the size of turf in the landscape and increase natural or **“wildscape”** areas; conserve water usage in and outside the home; and, use rainwater and gray water in supplementing the needs.

4: Teach others to be wise water users and good stewards of our natural resources. It takes an average of 500 years to rebuild 1" of soil so the things we do will have a long lasting effect. Be a