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JUNE 2015

**Taking Care of Creeks  
and Streams**

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PUBLISHED IN SAN ANGELO, TEXAS, SINCE 1920





When bottomland creek areas are in good condition, water is stored in the riparian area which helps to sustain base flow.

# Taking Care of Your Creeks and Streams

**By Steve Nelle**

Retired NRCS Range  
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**R**ural Texas landowners appreciate their creeks. This is where the cows drink; this is where the fish live; this is where family picnics occur and where grandkids learn to throw rocks; this is where you go to see kingfishers, herons, wood ducks and many other kinds of wildlife. There is something mystical, intriguing and alluring about a creek. Creeks are very special places.

Sometimes creeks are also the cause of hardship and cussing. When water gaps wash out or when neighboring livestock mix, mingle and migrate up and down the creek. When hogs use creeks as travel corridors to invade and encroach into new

territory. When the creek gets on a big rise and washes out a 200 year old tree or caves off a high bank, it causes emotional trauma for landowners.

Although creeks and streams may be a mixed blessing for the landowner, most folks are glad to have a spring, creek or intermittent stream on their place, and especially a nice flowing creek. Even though people generally place a high value on their creek, most landowners will admit they don't know very much about how this complex and important part of the landscape works or how to best take care of it.

## Understanding Creeks

Creeks, rivers and the riparian bottomland areas that run alongside have a special and important place in the big picture of the land. Understanding how the creek

operates is fundamental to taking care of it. The creek includes more than just the water. The creek area includes the obvious parts such as the banks and channel, but also includes the adjacent floodplain, the deposited sediments and the shallow alluvial aquifer that feeds the creek. The high banks, low banks, sand bars, meanders, overflow channels, oxbows, sloughs, boulders, sunken logs and vegetation are all components of the creek that play important parts.

The active floodplain of the creek is especially critical. When enough rainfall and runoff occur to cause a rise in the creek, the waters fill the channel and then spill out into the overflow floodplain. The floodplain acts as the pressure relief valve for the creek—where high energy floodwaters are spread out wide and shallow, reduc-





Livestock grazing can be compatible with good riparian condition when done properly. Short graze periods followed by long recovery periods are the key to maintaining good vegetation.



This creek in Gillespie County is fenced. This allows the owner to graze the creek pasture periodically, but not overgraze it.



ing their energy. The floodplain is where sediments and nutrients are deposited, thus creating a very productive strip of land.

Another important function of the floodplain is the recharge of shallow alluvial aquifers. Perennial and seasonal creeks have a shallow water table immediately beneath them, and this underground water is what sustains the normal base flow of the creek. During runoff events, when water spills into the floodplain is when large volumes of water are recharged back into these shallow aquifers. The water that is put back into the ground during flood events is what sustains the creek during the dry times.

The job of vegetation on the bank and floodplain is to dissipate and slow down the energy of floodwaters. When the force of water is interrupted by trees, shrubs, large grasses and other plants, the erosive power of the water is reduced. Below ground, the root systems of riparian and creek bottom plants help hold the soil in place. Some riparian plants have 10 to 20 miles of roots within every cubic foot of soil which help reinforce and bind the soil.

### How to Fix the Creek

Many Texas creeks have incurred unintentional damage and degradation over the past 100 years. Some creeks have been damaged by excessive erosion, channel alterations, and lowering of the water table. The discipline of creek hydrology and riparian management is relatively new, and we are just now discovering how important it is to understand and take special care of creek areas.

Fixing a damaged creek is usually

### Practices That Promote Creek Recovery

- Create a wide buffer of protection
- Maximize dense native riparian plant growth
- Restrict grazing to short periods
- Aggressive harvest of exotics and hogs
- Eliminate or reduce mowing or spraying
- Retain fallen logs, dead trees and woody debris
- Do not pump from shallow alluvial aquifer
- Restrict and manage recreational impacts
- Eliminate or restrict driving
- Eliminate or restrict burning



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This creek has been severely damaged by high number of exotic deer and unregulated grazing.



The active floodplain of a creek or river is where floodwaters spread out and where sediment is deposited.

easier than you might think. In fact, in most cases the creek will tend to fix itself through natural recovery if it is given a chance to heal. In most cases, if the landowner ensures the normal growth of good, dense, native riparian vegetation, the creek area will begin to stabilize. As the velocity of floodwater is slowed, additional new sediment is deposited, forming new banks and rebuilding the floodplain. Creek and riparian areas usually respond quickly to improved vegetation and improved management. However if poor management continues, the creek will never recover and will get even worse.

### Cows and Creeks

It is no secret that cattle like to congregate and loaf in and near creek areas. Here they can often find clean water, green forage and shade. This creates potential problems with maintaining healthy riparian vegetation. Livestock that tend to hang out near the creek can easily overgraze and damage the vegetation. Many creeks have suffered from decades of overgrazing. Even when the ranch or the pasture is properly stocked, the tendency of livestock to concentrate in the creek area often causes localized chronic overgrazing.

One good solution to correct this problem is to construct fences to create smaller "creek pastures." Fences must be placed in logical locations so they do not wash out during floods. Generous financial and technical assistance available through USDA's Natural Resources Conservation Service can help landowners with riparian fencing. In some cases, ranchers choose to temporarily withhold grazing from the creek area in order to jump start plant recovery. In other cases, ranchers will allow cattle to graze the creek pasture for two to four weeks per year in order to take



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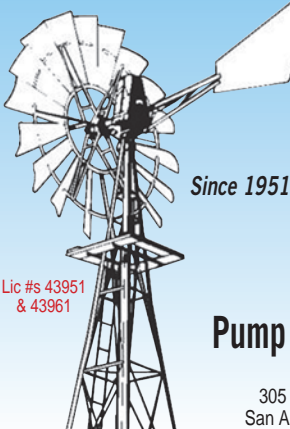
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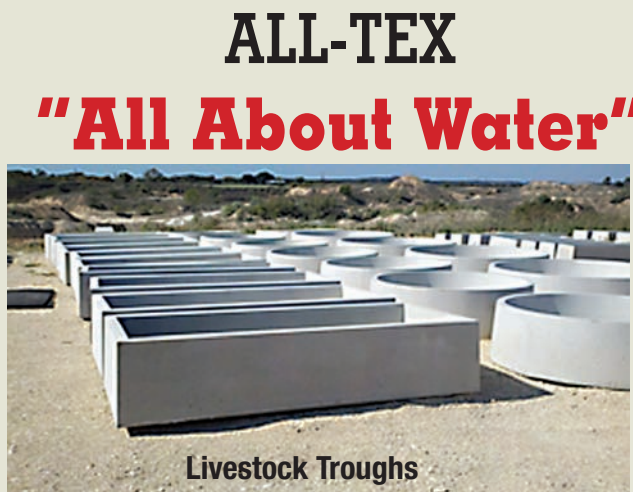


When small headwater creeks are properly managed, the beneficial results continue downstream.



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One important attribute of a healthy creek is an abundance of strong stabilizing riparian vegetation.



Continuous unmanaged livestock grazing in the creek area often results in overgrazing of important stabilizing vegetation.



This small creek in South Texas has healed up on its own after several years of good management.

advantage of the abundant and high quality forage. This is sometimes called “flash grazing,” where the whole herd is allowed to graze for a short time followed by a long rest and recovery period.

Many ranchers find it difficult to justify the expense of fencing of their creek, even with financial assistance. In some cases, less expensive electric fencing is a good cost effective alternative to permanent fences. Besides fencing, there are other ways to reduce grazing intensity in creek areas. Create new alternate watering locations far away from the creek to draw livestock away from riparian areas. Relocate salt, mineral, hay and supplemental feeding far away from creek areas. Utilize rotational grazing so that pastures that contain creeks will only be grazed for a portion of the year.

## Stewardship

Stewardship of natural resources is the concept that a person voluntarily accepts the responsibility to care for the land that is entrusted to him during his tenure of ownership. Stewardship involves an inner conviction which motivates and compels the landowner or manager to be a good custodian of the land, water, soils, plants and animals. The most successful farmers, ranchers and land managers have this attitude of ethical stewardship which guides their activities. Stewardship is a lot more than performing normal agricultural activities. It includes proactively preventing erosion, keeping a good cover of desirable grasses on pastures, maintaining wildlife habitat, conserving water and keeping watersheds and riparian areas in good condition.

Stewardship of creeks and rivers involves the notion that creeks are to some extent a shared resource. Even though the landowner may legally own the creek, he or she realizes that what is done there affects other people, even far downstream. The genuine land steward manages his activities not only for his own personal self-interest but also for the benefit of others. By taking care of creek areas, erosion is reduced, water quality is maintained, fish life remains healthy and the flow of the creek will be more sustained. All Texas citizens benefit when Texas landowners take good care of their creeks. ◇

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