

Wildlife Conflicts in Riparian Management: Grazing¹

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Abstract.--Grazing has a negative impact on riparian zones. These zones constitute a small but critically important part of the range resource.

The riparian types in southern Arizona have increased from what they were 100 years ago. The increase has occurred through stream eutrophication and is most noticeable where the streams pass through the grassland type.

Protection of the riparian type where grazing is an established use can only be effectively achieved through fencing.

Wildlife managers frequently express their concerns about the impact of grazing in the riparian zones and justifiably so. We have all seen examples of riparian types where there is virtually no reproduction or mixed age classes of the trees or shrubs. The type is dominated by mature and overmature trees. Trees growing in riparian sites are usually relatively short-lived. It is entirely possible for a riparian zone to completely disappear within a span of a man's lifetime where grazing use is prevalent.

Cattle exhibit a strong preference for the riparian zones for a number of reasons. Cattle prefer the quality and variety of forage available. Riparian forage is higher in palatability because it has more moisture in it whether it be shrubs, forbs, or grass. Moisture content, probably more than any other factor, influences palatability. A preferred species of forage growing on a dry hillside will not be nearly as palatable as the same species growing in a riparian zone.

Availability of water in most riparian areas provides a strong influence for livestock to frequent the area.

If the surrounding country is rough and rocky, livestock tend to concentrate along the

riparian areas just to give their feet a rest. In hot climates, livestock seek the shade available along the riparian areas. In cold climates, they seek shelter from the cold winds.

If livestock are left to their own preference the riparian zones get continued yearlong use with no respite from grazing. These critical zones represent a small but important percentage of the total range area. This is where the non-game birds and animals congregate unless it is totally devastated.

On the Coronado National Forest, approximately 20% of the grazing allotments have significant riparian zones. Southern Arizona perhaps is unique in that we probably have more riparian zones today than there were 100 years ago. The increase has been due to overgrazing during the 1890's and early 1900's.

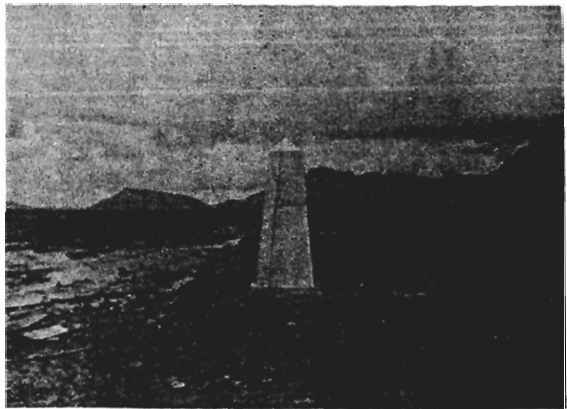


Figure 1.--Monument No. 98 on Mexican border. Located on west bank of San Pedro River. Photo taken 1892. Drainage virtually devoid of any riparian growth. San Pedro River was perennial stream with fish, frogs and turtles.

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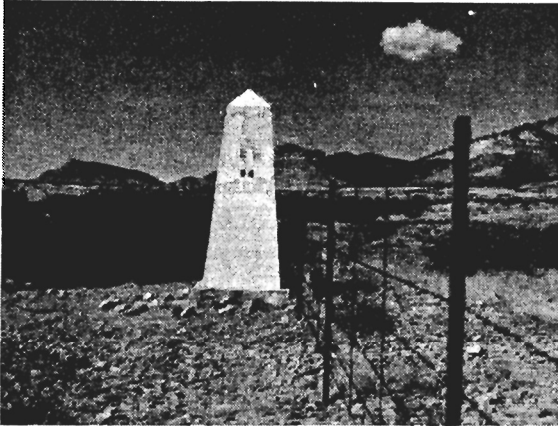


Figure 2.--1969 photo showing dense growth of mesquite. Entire San Pedro River has dense growth of mesquite and other riparian growth.

During this period, there was a continual buildup of cattle to a peak number of 173,000 head by 1900 in the area now encompassing Pima and Santa Cruz Counties. Needless to say, the country was devastated. During the rainy seasons, the runoff resulted in serious flooding causing gullying and heavy soil loss.

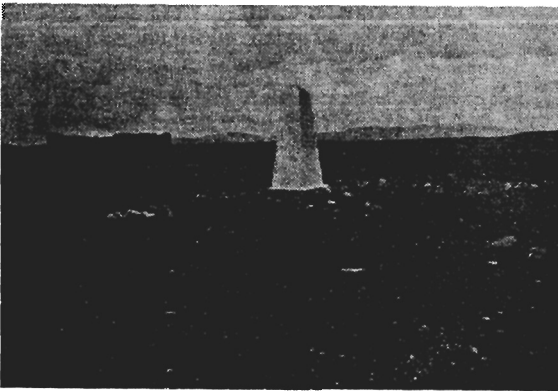


Figure 3.--Monument 111 where Santa Cruz River leaves U. S. No riparian growth showing along stream bank. Photo taken 1892.

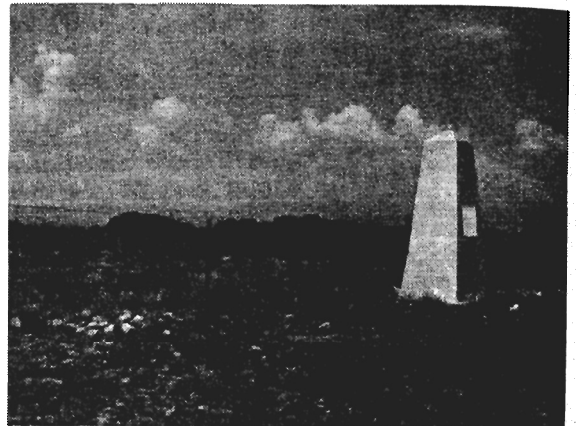


Figure 4.--1969 photo shows heavy riparian growth along water course.

Prior to this period, the San Pedro and Santa Cruz Rivers were perennial streams inhabited by fish, frogs, and turtles.

The resulting accumulation of silt in the stream with the soil nutrients provided the seedbed for the riparian growth now so prevalent along these streams. This process is called eutrophication.

A recent example of this is along the Santa Cruz River where the Nogales Highway was washed out in the 1967 flood. This occurred about 20 miles north of Nogales. The resulting silt bed formed in the bend of the river produced a dense stand of cottonwood trees now 30 to 40 feet high.

The riparian types in the mountain areas of the Coronado have probably remained fairly stable with little change through the years. The increase of this type has occurred by extension through the grassland type by the stream eutrophication process.

In general, it would seem we can conclude that riparian types undergo change. They recede in some areas and increase in others.

It is a well established fact that we are in trouble trying to retain riparian zones in a reproductive condition. The question arises - what can we do about it?

First of all, I believe we need to do an intensive classification job on our riparian types. These would logically fall in two categories: threatened and unthreatened. Of those

in the threatened category, select the key areas. These would be the zones determined to be essential to keep. They may be critical habitat for rare and endangered species. Therefore, reproduction of the tree and shrub species must be ensured.

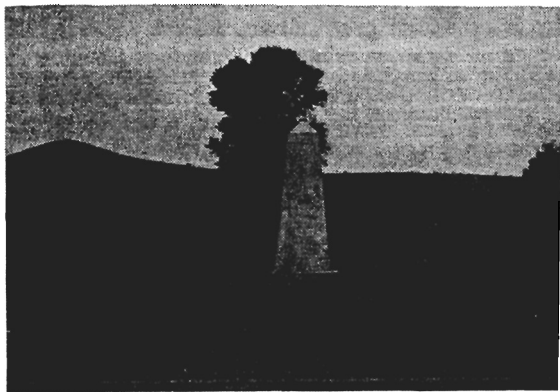


Figure 5.--photo of Monument 118 where Santa Cruz River comes back into U.S. Note limited scattered growth along water course.

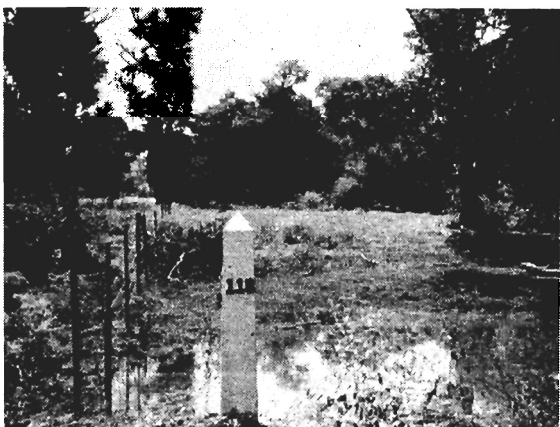


Figure 6.--1969 photo shows a veritable jungle of heavy riparian growth. Original masonry monument washed out in flood in 1914 and replaced with steel monument in 1917.

It has been our experience on the Coronado Forest, that there is no known system of livestock management that will give adequate protection to a riparian zone. Even short term use or seasonal use is inadequate. Because these areas are usually extremely narrow and linear in character, grazing for only a few days can seriously impair its reproductive capability. It's like having the milk cow get in the garden for one night.

The only way we have been able to ensure adequate protection of our riparian types is by fencing them out from livestock use. This, of course, is coordinated with the livestock management plan to provide for watering places and logical pasture divisions.

We have initiated a riparian fencing program of our key drainages with excellent results. One in Parker Canyon has been fenced for nearly 2 years. The response here has really been encouraging. We have another currently in progress of being fenced which we hope will be equally productive.