

5. MULTIPLE USE

Healthy rivers and riparian ecosystems are vital resources for countless native plant and animal species in the southwest, and sources of beauty and joy for us humans, as well. They are ecologically indispensable, but that does not mean they can never support any other uses, with a little care and attention.



5.a] Recreation is an important use of riparian areas.

Grazing management

A healthy bosque can certainly be used by grazing animals, but both the *timing* and *duration* of grazing have to be managed carefully. In this regard grazing in riparian areas is no different than grazing anywhere else in the southwest: grazing animals have to be controlled and managed, not just turned loose. As with river channel restoration, grazing management is a vast subject that is well beyond the scope of this booklet to consider in full, but there are some considerations about grazing in riparian areas in particular that should be given some attention.

New vegetation is extremely vulnerable to grazing damage in a way that more mature plants, with more developed roots, are not. With this in mind, all grazing animals should be kept out of newly-restored sites (where additional plants, shrubs, or trees have been seeded or transplanted) for at least one full growing season, perhaps longer. It is important that the new plants have all had time to become well-established and able to withstand grazing pressure. Grazing in the first year is likely to just pull up most of what you have planted, roots and all. It is a good idea to avoid grazing in any riparian area, restored or not, in the spring when newly-emergent plants along river banks are at their most delicate and vulnerable. Even if they are not actually grazed, they are much more easily damaged by trampling than they will be later in the season.

Many ranchers have found that grazing riparian areas during the dormant season is the best option. During the late winter a number of bosque plants still offer animal nutrition. They are finished storing nutrients and carbohydrates for the next growing season but are not currently flowering or producing seed, so their reproduction is not affected. If there are (as we hope) seedlings of willows or cottonwoods, they will not have leaves during the winter and will be less attractive to grazing animals. There are anecdotes of ranchers who have managed summer riparian grazing successfully, but the timing and intensity of animal access would have to be controlled more precisely and the effects of grazing monitored more carefully and frequently to ensure that growing-season grazing was not damaging a riparian area in ways that may not be apparent at first.

To be sure that grazing is not damaging a riparian area, you should pay special attention to the most palatable plants—the ones livestock eat first—and the plants most sensitive or vulnerable to grazing pressure, like new woody seedlings and other emergent vegetation. The rule of thumb that grazing animals should not remove more than 40 or 50 percent of any plant's biomass over the course of a year is generally appropriate in a riparian as well as in a rangeland setting, but it is important to be sure that you do not miss over-utilization of favored plants in all the profusion of growth in a healthy bosque.



5.b] Dormant season grazing generally causes less riparian disturbance

Other principles of managed grazing, like keeping animals in a relatively small area and moving them frequently, leaving adequate time for re-growth, and minimizing opportunities for invasive plants in areas of high use, are just as important in riparian areas as anywhere else.

5. MULTIPLE USE (continued)

Recreational use

Recreational use of riparian areas does not usually cause much trouble, so long as people do not let fires get out of control, or trample the same small area constantly. Both of these potential problems can be addressed fairly easily.

One of the best ways to minimize the chances of starting a bosque fire is to avoid building any fires during the springtime when the soil and dead vegetation are dry, and conditions most likely to be windy. It is also common sense to keep any recreational fires within prepared fire rings, and clear any brush, weeds, and dead vegetation away from the fire ring to prevent a “fire ladder” situation. Shovels, buckets, and fire extinguishers are good things to keep handy in the bosque, as in any outdoor places that get recreational use.

In areas that get walked on heavily enough to keep grass and other plants from growing, it is a good idea to protect the ground surface. This not only reduces erosion and mud, it minimizes opportunities for invasive plants to get established. One simple way to do this is to install geotextile or landscaping fabric over the soil in high-traffic areas and trails, and cover it with at least a couple of inches of gravel or mulch to keep it out of the sun. The gravel and landscaping fabric will support foot traffic, keep your feet out of the mud when it is wet, and make it more difficult for weeds and invasive plants to get started. You should be aware, though, that landscaping fabric will break down and probably have to be replaced after five to ten years.

There are other ways to provide mechanical support in areas that get a lot of use, even including vehicle traffic. These are erosion control paving products and involve various kinds of permeable plastic, metal, or concrete grid that provide support but still allow natural vegetation to grow through the grid and water to infiltrate into the soil. They are more expensive and require more effort to install, but last a long time and may be worth installing in heavily used areas, roads or vehicle access points, or places where a level surface is needed. Many kinds can be found in a web search for “erosion control paving”.

Living with wildlife

Riparian areas are critically important to countless species of southwestern wildlife. There is a great variety of both plant and animal species, and many opportunities to see different birds, mammals, and other wildlife, in any healthy bosque. You can maximize the number of different wildlife species you see by encouraging habitat diversity, and you can minimize the chances of conflict with certain wild neighbors, if they turn up.

One of the best ways to see as many different kinds of birds and animals as possible in your bosque is to encourage variety in the kinds of micro-habitat possible in your particular situation, as discussed above. Water birds like ducks and geese need areas of open water for feeding and nesting, of course, ideally with some islands if space allows. Raptors, such as eagles, ospreys, and many hawks, need *snags* – tall, dead trees they can perch on with good

Minimizing recreational ground disturbance

Structural support products that allow natural vegetation to grow through can help prevent muddy, trampled areas and at the same time minimize the effects of heavy recreational use on native plant communities. There are concrete products as well as similar recycled plastic ones.

It can also be very helpful to build small bridges, boardwalks, or even decks (perhaps out of recycled plastic “boards”) in places where a raised trail or walkway would disrupt natural water flow patterns. These structures are sometimes more expensive initially than other kinds of trail, but may last longer and require less maintenance.



5.c] Concrete vegetation support blocks



5.d] Small bridge over wetland water channel



5.e] Beavers are important contributors to wetland and riparian ecology. They create open water and marshy conditions that would sometimes be very scarce without them. As their dams are built and then abandoned, they contribute to the ecological mosaic so important for healthy bosques, and help create the kinds of disturbances that allow new plants to grow and sustain the dynamic of ecological succession.

visibility—along with plenty of smaller mammals, birds, and fish as food supply. Songbirds and other smaller birds thrive in many kinds of localized habitats, from treetops through understory trees and shrubs of all kinds right down to grassland for ground-nesting birds like killdeer and quail. Deer are especially interested in shrub-level browsing, while elk tend to prefer grazing on grass and sedges. Both need dense brushy cover in addition to more open patches for grazing and browsing. Fish and muskrats rely on diverse aquatic habitat just as many young riparian and aquatic plants need variety and change in streambank and island habitats.

Occasionally, wildlife may present some challenges for us human neighbors. Beavers, for instance, are notorious for blocking culverts or irrigation ditches. However, many beaver problems can be fairly easily resolved by fencing around culverts or other places beavers want to dam in a way that makes it difficult for beavers to successfully back up water. These kinds of fences are called “beaver deceivers”, named by their inventor, wildlife biologist Skip Lisle. In some designs the fences are constructed to come to one or more sharp points upstream of the culvert inlet or spillway so that it is very difficult for beavers to pack sticks and mud against them. In other designs the wire-mesh fence is built trapezoidally, with the big side upstream

of the culvert. In these beaver deceiver designs, the fence is far enough upstream of the culvert that not only is it difficult to successfully build a dam against the fence, but the beavers feel less urge to build the dam at all because water is not flowing past the fence with any velocity. More information and several designs can be found with a web search for “beaver deceiver”.

Bears are not necessarily bosque dwellers, but they may occasionally turn up. Whether a bear visits your bosque is probably more related to hard times in its normal habitat than to conditions in the bosque, but bears tend to be very fond of ripe fruit. So, if there are wild plums, old apples, or apricot trees in the bosque, or domestic fruit trees near riparian areas, they may attract bears as the fruit gets ripe. If you live near a riparian area and are concerned about bears, or have seen bears nearby, there are bear-safety guidelines you can follow around your home. More information about living with bears can be found at almost any state wildlife department (the Colorado Division of Wildlife web site, for instance, is at wildlife.state.co.us/bears), but some of the key points for bear safety include:

- Use bear-proof trash and compost containers
- Remove bird feeders except when bears are inactive for the winter
- Store pet or other food, and BBQ equipment, inside a secure place
- Remove food, beverages, and scented items from cars
- Keep doors and windows closed at night and when you are away



5.f] Beaver deceivers need to include sharp angles that are difficult to build a dam against. They should also be far enough upstream of culverts that water is not rushing past the beaver deceiver, so beavers are less instinctively driven to build a dam.