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Habitat Restoration and Enhancement of the Middle Rio Grande Basin

Habitat restoration and enhancement are becoming more and more popular in New Mexico as demonstrated by Senator Pete Domenici's support for the Middle Rio Grande Bosque Initiative. The Initiative was begun as a multiagency initiative to describe the Middle Rio Grande ecosystem. As a consequence of the coordination, a report was completed entitled, *Middle Rio Grande Ecosystem: Bosque Biological Management Plan*. The goal of the Initiative is to sustain and enhance the biological quality and ecosystem integrity of the Middle Rio Grande bosque. To achieve this goal, a full-time coordinator is in place with the Fish and Wildlife Service. In addition, as recently as 1999, Pete Domenici also obtained funding in the amount of \$2,000,000 for restoration in the Middle Rio Grande.

The priority for the Fish and Wildlife Service for habitat restoration is an ecosystem approach so that habitat for many species can be restored and a functioning, self-sustaining environment can be achieved. Beyond that, our priorities are endangered species, and restoration of wetland and riparian habitats. These habitats have decreased significantly—over a 90 percent loss in the Southwest.

In some cases, restoration requires the removal of exotic vegetation before desirable vegetation can be established. A root rake can be dragged through the soil to remove the roots of undesirable vegetation (Figure 1). To plant vegetation, such as cottonwood poles, holes can be drilled in the soil, with screw-type augers or water-pressure hoses. In soils that are free of large rocks, hand augers can be used to drill holes (Figure 2). Planting trees using cottonwood poles is a good method of stabilizing stream banks (Figure 3). Pole planting accelerates revegetation because the plants are large from the beginning. Planted vegetation should be protected with wire to prevent damage from rabbits, rodents and livestock.



Figure 1. Vegetation can be removed with a rootraker.



Figure 2. An auger creates a hole for a cottonwood pole.



Figure 3. Cottonwood poles can stabilize stream

The Fish and Wildlife Service, Ecological Services, has two restoration programs. One program is limited to the Middle Rio Grande under the Middle Rio Grande Initiative. The Service administers contracts for habitat creation, such as development of wetlands. The second program is called the Partners for Fish and Wildlife Program. This program is a cost share program with nonfederal entities and can occur anywhere in New Mexico.

Wetlands are very desirable for restoration or creation because they support a unique assemblage of species not found in other habitats and because wetlands are scarce in the Southwest (Figure 4). Wetlands can be created through proper landscaping and hydrology using heavy equipment. Wetlands can often be created near water courses. One simple method of restoring wetlands and riparian habitats, is to reduce grazing or exclude livestock. For example, livestock have been excluded at one location for seven years in the San Francisco River in New Mexico with dramatic results (Figures 5 and 6). The project was very simple, it only involved construction of fences. To ensure higher wildlife values near water courses, upland areas should also be properly managed. At successful restoration sites, we encourage field trips to demonstrate restoration and at the same time educate others concerning the environment.

Currently, there are many lawsuits in New Mexico concerning endangered species. The water management community is protecting their existing uses, and other agencies are attempting to recover endangered species. For example, there are at least four potential lawsuits concerning the Rio Grande silvery minnow. Lawsuits require an enormous amount of time and funding. Instead of devoting valuable, scarce resources to this activity, the citizens of New Mexico would be better served by a cooperative approach to environmental issues. Let's use these resources for habitat restoration, because it will benefit all components of the ecosystem, including the human population.



Figure 4. Wetlands support an abundance of wildlife.



Figure 5. The San Francisco River in poor condition.



Figure 6. The San Francisco River after livestock exclosure.