



Carefully planned prescribed burns are used to improve habitat.

Restoring Quail Habitat in the Coastal Prairie

A CASE STUDY

WHAT ABOUT MY PROPERTY?

The Texas Parks and Wildlife Department, along with other agencies mentioned previously, are ready to provide advice and potential cost-shared funding for similar efforts. Jim and John want to encourage others to emulate their success. To provide a source for assistance and guidance to other landowners in the local area, they co-founded the Wildlife Habitat Federation (WHF). Information about the Wildlife Habitat Federation can be found at their Web site, www.whf-texas.org.

WHF's aim is to provide individuals and wildlife associations with the facts on how, when, who (goods and service providers) and where to plan and implement wildlife habitat enhancement programs. WHF's specific objectives are (1) to restore and enhance contiguous tracts and corridors of native habitat in the Lower Colorado River Basin and adjacent areas, and (2) to provide educational opportunities to assist landowners in optimizing productive use of their resources while significantly enhancing habitat.



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AFTER



In 2000, Jim Willis and John Webb purchased a 225-acre ranch in Colorado County and named it WW Ranch. The property was primarily coastal prairie that was severely overgrazed and lacking in wildlife. They developed a wildlife habitat restoration plan, obtained an open space tax valuation for wildlife management and immediately began to restore the land. Just five years later, in 2005, WW Ranch was recognized by the Texas Parks and Wildlife Department as the Lone Star Land Steward Award recipient for the Gulf Coast Prairies and Marshes Ecoregion.

This is how they did it ...

BEFORE



VISION OF SUCCESS

Jim and John recognized that the ranch would not be wildlife-friendly if the primary vegetation continued to be the so-called "improved" grasses commonly planted in the area for cattle—coastal bermuda and bahia grass. They decided to restore all pastures with grasses historically native to the area and then added scattered patches of woody cover, such as native sand plum trees, for the benefit of upland game. In addition, they wanted to improve the habitat for ducks and water birds by providing more ponds with wetland vegetation.

Once the native grasses were re-established, cattle would be returned both to provide a sustainable revenue source and management tool to prevent the grasses from becoming too dense for quail and other desirable grassland species. Hoof action from cattle will also serve to plant the seed of beneficial native grasses and forbs (non-grass, flowering plants).

GETTING STARTED

Habitat restoration required a combination of fire, plow, hoof, herbicide and patience. Jim and John contacted the USDA Natural Resources Conservation Service, Texas Parks and Wildlife Department, U.S. Fish and Wildlife Service and Audubon Texas. A wildlife habitat restoration plan was developed that consisted of the following steps:

- Take the cattle off the property immediately, and let the grasses grow so that enough re-growth can occur to fuel a prescribed burn in the spring.
- Plow fire lanes around the perimeter of all fields. These strips also serve as food plots and take up very little area (an 8' wide plowed strip X 1 mile = only 1 acre).
- Conduct the prescribed burn under the supervision of a person with training and experience in conducting prescribed burns.
- Apply herbicide—in this case, Roundup (glyphosate)—when the “improved” grass is at its fastest vegetative growth stage (late spring/early summer), and conduct a second burn to remove the dead grass.
- Plant a variety of native grasses in late winter/early spring using a no-till seed drill. The seed bed must be firmed with planter press wheels plus a roller or cultipacker. Seeds from the local ecosystem are strongly preferred. At WW Ranch, little bluestem, switchgrass, sand lovegrass, Indiangrass, sideoats grama and eastern gamagrass were planted.
- Monitor the emergence of the native species and treat with sulfonylurea herbicide (e.g. Cimarron or Ally) in areas where bahia grass re-emerges. Glyphosates, such as Roundup, cannot be used at this point because they will kill native grasses.
- Be patient. Native grasses develop a root system first and may not emerge for a year or more.

The success of the program was a function of the weather, rainfall and soil variations on the ranch. At WW Ranch, results ranged from excellent to very disappointing, with overall results very satisfactory.

OTHER IMPROVEMENTS

At WW Ranch, 3,000 sand plum trees were planted, providing 20 areas of cover in addition to those already on the ranch. Jim and John moved too quickly in making this improvement, and overspray from herbicide treatments killed a number of trees. Learn from this mistake. Thankfully, enough trees survived to provide adequate wildlife cover.

With the assistance of Ducks Unlimited, a small shallow pond was enlarged to five acres and equipped with a variable weir to allow water levels to be dropped in summer. The removal of water allows for the growth of warm-season vegetation eaten by migrating ducks in the fall/winter after the pond is refilled.

Lanes are periodically plowed and disked throughout the property to promote forbs (particularly croton or “goat weed”) that produce seeds and attract insects, the primary food source for young chicks and laying hen quail. These strips also serve as wildlife corridors and future firebreaks.

After establishing native grasses, cattle were reintroduced on a rotational grazing basis. In addition to the direct revenue gained, the cattle serve to disperse seeds and provide wildlife trails through the grass fields; their hooves also replant seeds from native grass and forbs.

Sections of the ranch are re-burned on a three- to four-year schedule to retard growth of invasive species, eliminate thatch, invigorate new growth and provide more palatable and nutritious wildlife food.

Wood duck, purple martin and bluebird boxes were placed throughout the ranch.



Sand plums provide necessary cover for upland game.

THE RESULTS

There is a marked increase in the number of bird and other animal species on the property.

Quail counts increased from near zero to about one bird per acre. There was no attempt to restock—the birds came from the few on the ranch or nearby areas. At times, over 100 ducks have been seen on the new pond. Deer now bed down in areas with tall stands of grass and feed on forbs. The bird boxes, along with habitat improvements, attract a diversity of migratory songbirds and waterfowl.

Years ago, livestock in this area were sustained on relict coastal prairie perennial grass with no, or little, supplemental feeding. Unlike introduced, low-stature grasses which deteriorate during winter months, the restored native perennial grass on WW Ranch retains its upright structure. Due to this characteristic, native perennials provide standing thermal cover for wildlife and livestock, even when grazed. They also protect tender winter annuals and perennials.

The protection offered by native grasses encourages wildlife to concentrate here from less desirable habitat nearby.

Disked lanes stimulate growth of flowering plants and serve as firebreaks.

Habitat improvements such as the new pond attract ducks as well as migratory songbirds and other waterfowl.

THE COST

The cost of land restoration will vary depending on the amount of work done by the landowner, the use of government programs, the condition of the property and the desired timetable. John and Jim consider the cost of the restoration to be modest, particularly in light of the low ongoing cost to maintain the property, the improved winter grazing, and the pleasure that they, friends and family derive from the abundant wildlife.

The total cost at WW Ranch for native grass restoration was approximately \$100 per acre. A significant portion of this cost was covered by USDA Natural Resources Conservation Service (NRCS) cost-share programs, such as the Environmental Quality Incentive Program (EQIP) and Wildlife Habitat Incentive Program (WHIP). The cost of additional ponds was partially offset by NRCS cost-share programs including EQIP and WHIP, and the Texas Prairie Wetlands Program, a partnership of Ducks Unlimited, Texas Parks and Wildlife Department, NRCS, and U.S. Fish and Wildlife Service.

The ongoing costs of maintaining the habitat improvements are less than \$5 per acre and include periodic prescribed burns, plowing and disking and occasional herbicide application. Income from cattle grazing is used to pay maintenance costs. Although Jim and John do not lease the property for hunting, other landowners could lease their land to help pay the costs of land ownership.

