

## *The Values of Wise Land Use in an Agricultural Landscape*

"Maintenance of game on farmlands is closely tied in with the nature and intensity of farming. Intensive use of large areas for the production of a single kind of crop is unfavorable to game, and in the long run to land health. A diversified agriculture favors an abundance of game and more stable populations. Good soil conservation practices on farmlands, which usually include crop rotations and diversification, not only take care of the land but favor wildlife as well".

...from R. F. Dasmann in the book Wildlife Biology, 1964

Federal agriculture policies have significant effects on both the quality and quantity of our state's natural resources, including air quality, groundwater, surface water, wetlands, wildlife habitat, and aesthetic beauty. Modern farming practices, while generating unprecedented yields of products, exact a toll on our natural resources. Associations among agricultural practices and effects on fish and wildlife habitat surface water and groundwater quality, and loss of wetlands is well-documented (Wisconsin DNR, 1990). The 1985 Food Security Act included resource protection as an objective, while previous federal farm programs often encouraged practices that were incompatible with our natural resources. A new direction has been signaled, i.e. that farm policy and conservation of natural resources are mutually supportive. Permanent vegetative cover afforded by the Conservation Reserve Program is a prime example of wise land use in rural Texas, and is providing numerous benefits to our state.

Permanent grass-legume cover on fields, odd areas, and along road rights-of-way greatly reduces airborne pollutants (notably in the High and Rolling Plains), resulting in improved air quality.

Texans rely heavily on groundwater. Our agricultural, governmental, commercial, and industrial activities depend on high quality groundwater to operate and survive. Hundreds of thousands of Texas's farmland acres are irrigated with groundwater. In the Playa Lakes Region of our state, over 19,000 shallow basins serve as recharge zones for the Ogallala Aquifer. According to recent studies by the U. S. Department of Agriculture, the Conservation Reserve Program may generate an estimated \$3.5 billion to \$4 billion in water quality benefits (throughout the nation). Per-acre water quality benefits from CRP are likely to be seven times greater than those from traditional soil conservation practices because highly erodible lands were taken completely out of production.

Surface water quality is dramatically impacted by agricultural practices. Physical, biological, and chemical impacts to surface waters occur from soil erosion, sedimentation (playa lakes), continual livestock access (riparian areas) causing physical destruction of stream courses, animal waste runoff, and fertilizer and pesticide runoff. However, permanent vegetative cover programs such as CRP provide an opportunity to link farming practices with strong conservation measures. Protected buffer zones around playas in the High Plains and along stream courses in the Rolling Plains protect surface water quality, improve aesthetic value of the land, benefit wetlands and wildlife habitat quality for numerous species, and best of all, are compatible with farming and ranching operations in the region. Nationwide, CRP has saved more than 700 million tons of topsoil annually by reducing erosion rates of 22 tons per acre per year to only 1.7 tons.

Wetlands are of great social, economic, and environmental value. They function as a vital component of a healthy ecosystem that benefits human populations: recharging groundwater, trapping sediments, reducing the severity of pollutants, and providing fish and wildlife habitat. Fortunately, many of our playa wetlands in Texas are interspersed with Conservation Reserve Program lands, and as such, are protected from agricultural impacts. Most playas, by nature, are seasonally flooded shallow basins, receiving their water from rainfall or snowmelt. Over time, moisture either evaporates or filters through the soil to recharge the aquifer. When playas are wet, they provide food, shelter, and loafing areas for waterfowl and neotropical migratory birds. When dry, they host small mammals, nongame birds, and ring-necked pheasants, provided they contain ample amounts of native vegetation such as smartweed, curly dock, barnyard grass, kochia, and cattails. Protected playas generally harbor the greatest variety of plant species and produce the most invertebrates that are important as waterfowl foods (DU Habitat Series #561, 1991).

Wildlife abundance and distribution is a function of habitat quality and quantity. Conservation Reserve Program lands in Texas, properly interspersed with farmed acreage, are beneficial to early successional species such as pheasants, quail, rabbits, doves, and grassland passerine birds, as well as to white-tailed and mule deer, because of providing needed loafing, nesting, and escape cover, primarily associated with edges. Woody plantings in CRP provide needed diversity within grass-legume cover areas beneficial to quail, pheasants, and songbirds. Incorporation of legumes into grass mixtures helps fix nitrogen in the soil, beneficial to nutrient content of forage for wildlife and future livestock grazing use. The use of prescribed fire under proper conditions to manage permanent vegetation contributes to plant vigor, recycling of nutrients in the soil, and is highly compatible with future livestock grazing by increasing the percent of crude protein and palatability in forage. In turn, this enables profitable use of livestock as a wildlife habitat management tool.

In summary, wise land use employing sound soil and water conservation practices, including multi-year land retirement programs (CRP cover), improves air quality, water quality, wildlife habitat quality, wetlands, curtails soil erosion, and adds to aesthetic value of the landscape. Landowners are urged to consider long-term benefit factors prior to wholesale conversion to cropping systems.

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