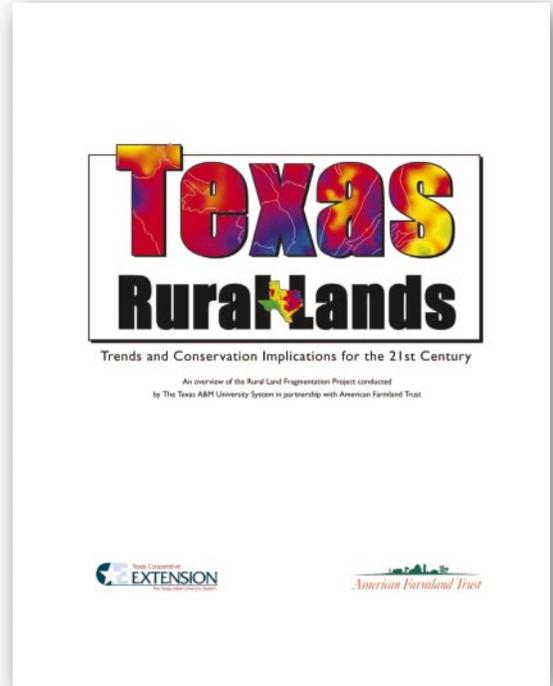




Impacts of Land Fragmentation on Texas Agriculture and Wildlife

A Summary Study from American Farmland Trust, Texas Regional Office

The Texas of legend, and of our memories, is a land of vast, wide-open spaces. The reality, however, is that over the past 30 years, the average size of land ownership – the average acreage of land holdings – in Texas has been shrinking dramatically. A March 2003 report from Texas Cooperative Extension of the Texas A&M University System and American Farmland Trust, entitled “Texas Rural Lands: Trends and Conservation Implications for the 21st Century,” assesses the extent of land fragmentation in Texas and identifies predictors that warn of areas around the state most at risk for fragmentation. The report also examines how effective a purchase of development rights program may be in stemming the tide of land fragmentation in Texas. This document summarizes some of the findings of that report by discussing the effects of land fragmentation on our citizens, wildlife, farming, ranching and water supplies. It also outlines recommendations made by American Farmland Trust with an eye toward conserving family lands and the Texas land of our memory.



Texas Cooperative Extension



Photo courtesy Texas Parks and Wildlife ©2003, Bill Reeves

“Now that all the world and the rest of mankind are coming to Texas, it behooves those who intend to remain here to look around them and see what portions of nature’s wide-spread bounties can be saved from the destructive tramp of immigration.”

DR. GIDEON LINCECUM
TEXAS ALMANAC

Dr. Gideon Lincecum wrote those words in 1861 to protest the plowing and fencing of his beloved Washington County, making him perhaps the original champion of the fight against the fragmentation of Texas lands.

One can only imagine what he would think of Texas today.

Texans are loving their land to pieces – literally. From the Piney Woods in the east, to the Hill Country in the heart of the state, to the rangelands of the Trans Pecos in the west, Texans are buying up land at a record pace.

However, even in the country’s second largest state, land is a limited resource. To accommodate new landowners, the



vast farms and famous Texas ranches are being rapidly splintered into smaller and smaller pieces. Each year since 1970, about 1,000 new farms and ranches have been established in Texas. At the same time, the total area devoted to agricultural uses declined by almost 3 million acres. That’s 33,000 more farms and ranches on 3 million fewer acres. This process is part of a trend known as land fragmentation.

To accommodate new landowners, the vast farms and famous Texas ranches are being rapidly splintered into smaller and smaller pieces.

Those new “ranchettes” are typically too small for traditional farming, ranching or forestry. But that’s fine with most new landowners who have limited interest in working the land. Instead, they want a place where they can escape the crowds and noise of urban life. They want to do a little hunting, explore the countryside, own a few cattle and reconnect with the spirit of the Old West. One recent survey of new landowners by Texas A&M University’s Real Estate Center found that 80 percent of buyers said that finding land for non-agricultural uses, like hunting, fishing and other recreation were “very important” motives for their purchase.

Sadly, this rush to embrace the land may be ruining it. Thousands of new “ranchettes” are gobbling up open space and degrading wildlife habitat, while at the same time depleting and polluting scarce water resources.

The most vivid examples of this phenomenon can be found in the more populous eastern half of the state and on the outskirts of just about any major city. From 1992 to 2001, more than half a million acres of farm and ranchland in 25 Texas counties were converted to land uses other than agriculture. While this loss due to “urban sprawl” was primarily confined to the fringes of our major metropolitan areas, the fragmentation of agricultural lands into smaller ownerships has occurred in areas that have not been affected by urban sprawl. Fragmentation is starting to eat away at large ownerships even in such areas as the Trans Pecos and South Texas, which seem the very definition of “wide open spaces.” This fragmentation is likely to continue in some of the most rural areas of the state where natural amenities, such as recreation potential and scenic beauty, are in high demand.



Photo by Julie Stuchelford

Photo courtesy Texas Parks and Wildlife ©2003, (Bill Reeves)

A recent report, “Texas Rural Lands: Trends and Conservation Implications for the 21st Century,” by the Texas Cooperative Extension of the Texas A&M University System and American Farmland Trust, examined the issue of land fragmentation and its impact on land uses across the state and found that this phenomenon is rapidly transforming Texas. The changes often go unnoticed by the average Texan, but those close to the land see the consequences. Things are changing.

A New Breed of Landowner

For generations, land in Texas was a legacy. It was passed down from one generation of farmers or ranchers to the next. In today’s world, however, traditional farming and ranching have become questionable propositions. Fewer and fewer people are willing to take on the challenges of a life on the land.

A new breed of landowners, excited about staking their claim to a bit of Texas, is eager to step in. Younger, more educated and more affluent, the newcomers are quite different from their predecessors. For them a “farm” or “ranch” is not a place to raise crops or cattle, but a weekend retreat from the city or a place to raise a family in the country.

Unlike previous owners, they don’t need the large acreages of land required to make farming or ranching profitable. They merely want a place where they can hunt, fish and find a little solitude. Huge expanses of land aren’t required for such things.

The study found that such increases in “non-agricultural” values were a good early indicator that large farms and ranches would likely be divided into smaller ownerships.

As a result, prices aren't driven by what the land can produce, but rather by its scenic and recreational value. Those natural amenities have become precious commodities. In many counties across Texas they have pushed prices for land to record levels.

The fragmentation study found that while the average agricultural value of farm and rangeland grew only 4 percent between 1992 and 2001, there were 25 counties where the development and recreational value of land increased between 86 percent and 292 percent. The study found that such increases in "non-agricultural" values were a good early indicator that large farms and ranches would likely be divided into smaller ownerships. The study also revealed that this land fragmentation is often accompanied by changes in land use and fragmentation of wildlife habitats.

The researchers found that "mid-sized" family ranches of 500 to 2,000 acres were particularly susceptible to fragmentation. During the 1990s these properties disappeared at a rate of a quarter-million acres a year because families who had lived and worked on those lands for generations sold them and moved on. The decision to sell is often a matter of simple, heartbreaking economics. With developers offering far more money than they can make from the land by farming or ranching, landowners accept the offers, often reluctantly, and move on. As they depart, a major piece of Texas' rural heritage disappears. Rural economies are often left in shambles as stockyards, grain elevators, farm implement dealers and other ranch-related enterprises close their doors.



Photo courtesy Texas Department of Transportation



Photo courtesy Texas Parks and Wildlife ©2003, (Leary Williamson)



Photo courtesy Texas Department of Transportation

The Disappearing Family Farm

The Graff family has learned to adapt to changing times.

Since 1877, one generation of Graffs after another worked their family ranch near Hondo, just west of San Antonio in Medina County, Texas. For nearly all of that time they grew crops and ran cattle on their land, which is now down to 800 acres. It was hard work, but you could make a living at it.

At least you could until about 10 years ago, when the economics of ranching changed and those enterprises just weren't enough. Still, the Graffs didn't want to leave their family homestead, which now belongs to fourth-generation rancher Ralph Graff's family. Other Graff descendants have nearby lands in agriculture.

When Ralph Graff died in 1995, his wife Hazel (pictured below with family dogs) and their son Ken and his family looked for ways to diversify their operation, turning their 7A Ranch into a tourist destination. They started raising and selling grass-fed beef, free of synthetic hormones and antibiotics. Soon they built an open-air pavilion where people come by the busload during the spring and fall to enjoy barbecue and a relaxed evening of live Western music, trick roping and hay rides. In the fall, visitors explore a maze carved into several acres of cornfield.

The formula has worked well for them, allowing them to stay in business, but not so well that dreams of expanding can be easily realized.

In their part of the state, land prices are skyrocketing. Driving the prices is not what a rancher can scratch from the earth, but what urbanites, eager for a taste of country living, are willing to pay to claim a small piece of this picturesque part of Texas for their own.

The Graffs have dreamed of purchasing some nearby land to expand



Photo courtesy of Hazel Graff

their operation for years. However, like most small ranchers, they are land rich and cash poor. They might be able to afford more land if the price reflected its agricultural value, but the new economics make the dream of owning the additional land seem remote.

"I'd love to have those fields so we could continue to run cattle and expand our tour business. They would be ideal for a little campground," Hazel says with a sigh. "Aside from that, I don't want to look out the window and see people."

Should the day come that those lands are bought up and turned into ranchettes, she worries that the 7A would not be the peaceful place it is today. Or worse, she worries that the 7A would soon follow suit, becoming another family ranch that would fade into history, something all current family members are committed to fighting.

"When it gets to the point where people are offering you so much more money for your land than you could ever get out if it, it is kind of tempting," Hazel admits.

A strong private property rights advocate and skeptical of such things in the past, Hazel now says that if Texas had a purchase of development rights program in place, it would provide her family options that could allow them to stay on the land and in agriculture. She is currently gathering all the information she can about the pros and cons of a purchase of development rights option so that she and her family can make the decision that is right for them.

A purchase of development rights program would allow the family to sell the valuable development rights to their property while maintaining all other rights to the land. Such a transaction would limit the family's ability to subdivide and develop the property, but that would suit them just fine because her children and grandchildren want to stay in ranching. Should surrounding landowners follow suit, they, too, could sell their development rights and protect their land. If those properties ever came up for sale, the Graffs could consider purchasing those lands at a much more affordable price based on their agricultural value. Such purchases would allow them to expand their operation and operate more profitably.

Right now such a plan remains only a dream, but it is something worth dreaming about, Hazel says. "I want my family to be able to ranch this land for as long as they want. It is very important to us to keep this land the way it is. A family heritage of six generations and 116 years is hard to give up."

When Ralph Graff died in 1995, his wife Hazel and their son Ken and his family looked for ways to diversify their operation.



Photo courtesy Texas Department of Agriculture

More “Ranchettes,” Less Wildlife

The new landowners in Texas differ from their predecessors in an important way: They are typically two or three generations removed from any close ties to the land. Their values and ideas have been shaped by a lifetime in the city or suburbs. They may have little appreciation for how delicate their newly purchased hundred acres of heaven can be.

Many arrive with good intentions of doing some sort of wildlife management on their land. However, they often have little in the way of training or experience to back up those plans, and soon there is little wildlife left to manage. Sometimes it isn't what a particular owner does, but what his or her neighbor is doing that is the problem.

Much of the wildlife native to Texas requires vast areas of land to thrive, and the ranches of past generations provided suitable habitat. Cattle roamed relatively undisturbed lands eating what nature provided. Because ranches were surrounded by other ranches, most managed in the same low-impact manner, large tracts of native habitat were preserved.

As those properties are fragmented, that age-old pattern is disturbed, often with devastating results for wildlife. One owner may prefer a manicured setting, while his neighbor wants to let the land manage itself. Meanwhile, owners down the road may plant “improved” non-native pasture grass for their small herds of cattle or horses. Before long, what remains of the native habitat is splintered, and the animals that once thrived there die off or move on.

This process has taken a particularly heavy toll on Northern Bobwhite quail. In the United States, the Northern Bobwhite population has declined by 66 percent – an annual rate of decline of 3.8 percent – between 1982 and 1999. To thrive, these tiny birds need huge amounts of land. A sustainable breeding population of quail (at minimum about 800 birds) requires 5,000 acres of essentially unbroken rangeland. While the sustainability of this species in South Texas and the Rolling Plains appears promising – because these areas are dominated by land ownerships exceeding 2,000 acres each – such habitat has become hard to find in the central and eastern areas of the state. Most of the Pineywoods is composed of land ownership areas less than 100 acres, with remaining areas east of I-35 averaging 100 to 500 acres.

Data analyzed by Texas A&M researchers indicate that as the size of landholdings decreases, the amount of “improved” pasture (non-native,

About 67 percent of the state's 10 million acres of “improved” pasture lie in the eastern 25 percent of the state where grassland-dependent wildlife species, such as bobwhite quail, below, have declined the most.



Photo courtesy Texas Parks and Wildlife ©2003, (Bill Reeves)

exotic grasses, such as coastal bermuda) increases. About 67 percent of the state's 10 million acres of "improved" pasture lie in the eastern 25 percent of the state where grassland-dependent wildlife species, such as bobwhite quail, have declined the most. More than 20 percent of the Blackland Prairie, which was once prime quail habitat, is now "improved" pasture, mostly on small landholdings. During the 1990s the Blackland Prairie lost an additional 180,000 acres of land to urbanization. Further east, in the Pineywoods, the amount of "improved" pasture grew by 425,000 acres – a jump of 30 percent in one decade. Those carpets of short, green grasses may be attractive to humans but have little to offer quail and other wildlife. Certainly, islands of good habitat remain in those regions and small populations of birds have hung on, but they are much more susceptible to being killed off by drought, predators and continued habitat degradation.



Photo courtesy Texas Department of Transportation

Today, east of I-35, the call of the quail has all but gone silent. Two dozen other species of grassland birds – including the Eastern Meadowlark, Bachman's Sparrow and the Loggerhead Shrike – are also being driven out, along with many species of small mammals. Horned lizards, box turtles, various insects and many other creatures are also gone or disappearing. In many parts of that region, the delicate ecosystem that existed in balance for ages is lost.



Photo courtesy Texas Parks and Wildlife ©2003 (Paul Montgomery)

New Neighbors, New Challenges

Dr. Wallace Klussmann recently got new neighbors – 14 of them to be exact. Those families are spread across what used to be a 1,100-acre ranch next door. While that may seem like a small number of families, life sure has changed.

“Two years ago we never heard dogs barking, we didn’t have noise from four-wheelers and I didn’t have a neighbor accidentally setting fire to the range,” Klussmann says wryly. “But those things are just part of having more people around.”

Klussmann, who recently retired after 30 years as a professor in the Wildlife and Fisheries Science Department at Texas A&M, knows that going from one neighbor with 1,100 acres to 14 neighbors with 50- to 100-acre parcels creates a whole new dynamic for his own land, and that could affect his income.

Klussmann (pictured below leading a tour), who lives on 570 acres in Llano County, raises some cattle, but the real moneymaker on his land is wildlife. Each year he sells hunting leases for deer, turkey and quail, activities that yield four times as much income as his livestock. He is hardly unique in that regard. In a time of lagging prices for agricultural commodities, for many ranchers, income from hunting can mean the difference between turning a profit or not.

The viability of such operations, however, can be hurt by what happens on neighboring properties. In Klussmann’s case, some of his neighbors want to raise horses, some want to establish wildlife preserves and others want to run some cattle. Such a mixed bag of uses could upset the balance that has existed on this land for many, many years.

“When you have different landowners with different objectives, those objectives don’t always mesh,” Klussmann explains. With large ranches across the state being carved up at a record pace, many who lease their lands for hunting are confronting this reality.

Landowners aren’t the only ones who stand to lose. For Texas, with more hunters than any other state, hunting is a major economic engine. According to the International Association of Fish and Wildlife Agencies’ “2001 Economic



Photo courtesy Wallace Klussmann

Importance of Hunting in America” report, Texas’ 1.2 million hunters accounted for \$1.76 billion in retail sales in 2001, generating \$93 million in sales and motor fuel taxes. Their activities created more than 31,000 jobs, which generated nearly \$865 million in salaries. Taking into account the multiplier effect of that spending, hunters pumped \$3.6 billion into the Texas economy in 2001.

Such spending is a vital part of many rural economies. A recent survey of Quail Unlimited members in Texas found that the average quail hunter spends \$10,000 a year on the sport, with 65 percent of those dollars spent in the counties where the hunt occurs. Hunting licenses are also the primary source of revenue for the Texas Parks and Wildlife Department. They account for 26 percent of that agency’s total budget, and almost all of the revenue it uses to fund fisheries, wildlife and law enforcement activities.

All of that spending, Klussmann points out, is dependent upon the existence of good habitat for wild game. If the habitat is carved up and disturbed, the wildlife disappears, and that spending with it. “The bottom line is that hunting equals habitat, and habitat equals the economy that is related to it,” he says.

Because Klussmann lives in an area that is considered the “Deer Capital of Texas,” he is optimistic that his operation will continue to thrive for now, but not without changes.

“I’ve got one deer blind about 150 yards from one of those new houses,” he says. “I’m going to have to move it. Hunters want to feel like they are on a ranch, not in the city.”



Photo courtesy Texas Parks and Wildlife ©2003, (Terri Nottingham)

Water Worries

In many Texas counties, particularly those of the much-coveted Hill Country, fragmentation of land is causing or worsening problems with water supplies – both in quantity and quality.

Like most of Texas, those counties have survived one drought cycle after another over the centuries, and they have managed just fine. However, as more homes are built and more wells drilled, water becomes increasingly scarce. It’s a simple matter of supply and



Photo courtesy Texas Parks and Wildlife ©2003, (Leory Williamson)

demand: The more straws you have in the ground, the quicker the water disappears. An aquifer that was more than adequate to serve a single rancher and his 1,000 acres of land is often unable to meet the daily needs of the 100 or more families that might soon inhabit the property.

Because of the strong connection between surface and groundwater, particularly in the Edwards Plateau region, the draw down of an aquifer by continued development can decrease the water flow in streams and rivers. Wildlife, rural land values and tourism – all closely tied to the presence of water in the Hill Country – will likely suffer if water flow in rivers and streams is diminished over time.

As human populations grow, pollution of the water table is also a serious concern, especially in areas with shallow aquifers that recharge quickly, hydrologists say.

On the large ranches of old, pollution was of little concern. Traditional cattle operations created few inputs to the land, and those that were produced were usually organic and easily absorbed. Humans are much tougher on the land. Their homes and the roads to reach them reduce the amount of land available to absorb precious rainfall. Furthermore, those roads and driveways become collection points for oil, gasoline and other automotive fluids that can be washed into the aquifer. Perhaps the most underestimated threat to the water supply, however, is the acres and acres of lawn that many new owners plant. Those thirsty green yards require lots of fertilizer, a good deal of which finds its way into the groundwater, contaminating it for years to come.



Photo courtesy Bandera County Visitors Center

It's a simple matter of supply and demand: The more straws you have in the ground, the quicker the water disappears.

A Purchase of Development Rights Program: One Solution

The Texas A&M research clearly demonstrates that the strongest factor driving the fragmentation of Texas land is economics. Specifically, where the recreational and development value of land escalates, the size of the average landholding quickly shrinks. This suggests that some fragmentation might be avoided by offering landowners financial incentives not to sell or subdivide their lands.

The state officially recognized the gravity of this problem in 2000 when



Photo courtesy Texas Parks and Wildlife ©2003, (LeRoy Williamson)

then-Governor George Bush's Task Force on Conservation concluded that the fragmentation of large family-owned farms and ranches poses the "greatest single threat to wildlife habitat and the long-term viability of agriculture in Texas." The task force recommended that Texas initiate a statewide private lands conservation program called a purchase of development rights (PDR) program.

PDR programs buy development rights from willing landowners, thus compensating them for conserving wildlife,

agriculture, water and open space, rather than selling lands for development. Under a PDR program, willing landowners are paid for the development value of their land, either in perpetuity or for a term of years. The landowner retains all other rights of ownership, including the right to use the land for agriculture or hunting; to prevent trespass; and to sell, bequeath or otherwise transfer the land to others. The agency or organization purchasing the development rights then has the right and responsibility to limit subdivision and development of the property as described in provisions of the agreement. They do not acquire the right to develop the land themselves.

Such a program is especially well suited to Texas, where 84 percent of all rural land is in private hands. It is completely voluntary and allows landowners to reap the benefit of their rising property values, while still keeping their land in production or in its natural state.

The fragmentation study developed a simulation model to test several possible PDR program scenarios for Texas and found the following:

- A PDR program can attain the greatest success if efforts are focused on areas where large ranches are still the norm, but where evidence of mounting pressure for fragmentation exists. Such a strategy protects the greatest acreage. From a biological and agricultural diversity perspective, however, a PDR program would be remiss in ignoring ecoregions characterized by smaller land holdings. A two-pronged approach addressing conservation of large acreages and consolidation or cooperative



Photo by Cliff Stuckelford

Some fragmentation might be avoided by offering landowners financial incentives not to sell or subdivide their lands.



Photo by Julie Stuckelford

management among landowners of smaller acreages is advised.

- A PDR program should begin immediately in Texas. All else being equal, waiting five years to begin the program decreases the possible acreage protected by 60 to 75 percent by the end of 10 years.

- A five-year delay in implementing a PDR program would be more harmful than cutting any funding for such a program in half. With reduced funding and immediate implementation, 82 percent more land in large ownerships would be conserved than with a five-year delay in the program.

Recommendations

Everyone, it seems, wants to own a piece of Texas. To meet that demand, land is being divided into smaller and smaller pieces, or fragmented, at an alarming rate. A day will come in the not-too-distant future, however, when all the pieces will no longer add up to the whole of what Texas once was.

Ironically, the same love of the land that is driving that process is probably the best hope for saving it. Texans have a very strong connection to the land, something that we all point to proudly. Most Texans would help conserve the land if given the proper tools.

The following recommendations put forth options to slow the breakup of family lands in Texas caused by land fragmentation and ultimately to secure a strong future for farming, ranching and wildlife conservation in Texas. Underlying these suggestions is the reality that in order for agricultural landowners to stay on the land, the land must be profitable. Maintaining and enhancing the economic viability of agriculture – through tools to enhance productivity and diversification, direct marketing assistance and creation of a climate favorable to innovation – is critical to its future.

Land fragmentation is occurring, but it is not too late. By taking decisive action now, we can slow the fragmentation of our land and ensure that our water, wildlife and rural lands will be in good shape in the years to come. To sup-



Photo courtesy Texas Department of Agriculture

A day will come in the not-too-distant future, however, when all the pieces will no longer add up to the whole of what Texas once was.

port landowners in their efforts to stay on and keep land in private ownership and management, legislators and other decision-makers should:

1. Institute a funded, voluntary statewide purchase of development rights program for Texas now. Few tools are available to Texans interested in conserving family lands. A PDR program would provide an additional conservation tool to Texas landowners by buying development rights from willing landowners and compensating them for conserving wildlife, water, open space and Texas' traditional way of life rather than selling land for development.

2. Maintain agricultural, open space, timber and wildlife differential property tax valuation laws to ensure that qualification for these ad valorem taxes is not limited. Elimination or limitation of differential property tax assessment – which would change appraisal of lands to market value rather than keeping appraisals that recognize the lands' productive, open space or wildlife value – would have the immediate effect of rapidly fragmenting land statewide as individuals unable to pay higher property taxes were forced to sell.

3. Provide counties with greater ability to plan for and manage growth in unincorporated areas. Rapid growth in formerly rural areas surrounding cities has left counties with few means to assure sustainable, manageable growth or to protect the quality of life in these areas. Policymakers could encourage a better quality of life in communities statewide through a combination of strengthened ordinance-making ability, planning authority and local financial or tax incentives to conserve private lands for agriculture and wildlife.

4. Promote the use and benefits of native grasses rather than introduced grass species to enhance grazing and wildlife habitat. As wildlife, especially lease-hunting, becomes an increasingly profitable enterprise for private landowners, landowner advisors and agriculture agencies working with landowners should emphasize the benefits of native grasses. This will be most successfully accomplished when a clearer understanding of the economic benefits of native grasses to overall ranch operations is reached.

5. Promote the creation and enhanced role of land trusts and wildlife management cooperatives. These organizations and others like them can effectively counteract the negative impact of land fragmentation by unifying conservation and management practices across smaller properties.

6. Support meaningful estate tax relief that would help farmers and ranchers keep their land in agriculture and pass it on to other family members by raising the unified credit exemption amount for estate taxes and creating federal income tax incentives for farmers and ranchers to conserve their land. Currently, federal estate and capital gains tax provisions actually encourage the sale or conversion of agricultural land in urban areas to pay inheritance, estate and property taxes. Changes to the tax codes will facilitate the transfer of land to the next generation and slow the conversion of farm and ranch land to other uses.



Photo courtesy Texas Department of Transportation

“Going, Going, Gone” was prepared by AFT’s Texas Regional Office. For more copies or details on this study, visit the Texas Cooperative Extension of the Texas A&M University System’s Web site at <http://landinfo.tamu.edu/frag/>, visit AFT’s Web site at www.farmland.org or contact AFT’s Texas Regional Office at (512) 396-5517.



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American Farmland Trust is a national nonprofit organization that protects working lands, plans for growth with agriculture in mind and keeps the land healthy. AFT is the leading advocate for farm and ranchland conservation and the source of information that enables communities and individuals to save farms. AFT’s national office is in Washington, D.C.

In Texas, AFT promotes the protection of privately owned farm and ranchland by increasing voluntary conservation options for landowners. AFT’s Texas office is located at 101 Umland Road, Suite 205, in San Marcos. The phone number is (512) 396-5517. For more information, visit www.farmland.org.



Photo courtesy Texas Department of Transportation

