

to develop machinery that not only will cut but also will harvest the mesquite brush.

Interestingly, a whole lot of what the Oklahoma firm already does is clearing land for oil companies to make pathways through dense brush on ranches so the companies can set up oil drilling rigs or get their tanker trucks to storage tanks.

Frailey is usually running about 10 rigs to clear mesquite at any one time in such work.

In the Texas A&M work at Vernon, Frailey cuts through the mesquite with his Barko 775C. A Hydro Axe machine follows to collect mesquite biomass into its basket.

Frailey can cut a big swath of mesquite trees in 30 minutes.

Ansley figures it's costing from \$300 to \$500 per acre to harvest mesquite, depending on the situation. But it's still cost-effective if the refineries are small and located in small towns.

"The thing that will make this fail is if people think a bigger refinery in the big cities is better," Ansley assures. "That's where it will fail. The transport costs to get the feedstock to the refinery will kill you."

Each of the 400 small-town plants would employ about 30 people in well-paid jobs.

Mesquite patch recovers

Mesquite is drought-hardy, fixes its own nitrogen and resprouts quickly, Ansley points out. Each ton of mesquite will yield about 200 gallons of ethanol.

A State Energy Conservation Office grant has allowed Ansley's team to study regrowth rates, as well as work on developing the mechanized system to harvest mesquite.

In addition to cooperating with Oklahoma's Frailey, Texas A&M also is working with Pearson BioEnergy in Aberdeen, Miss., on the ethanol project because of Pearson's expertise and experience in converting cellulose products to ethanol.

"President Bush has said he is interested in the conversion of cellulose products into ethanol," Ansley notes.

Ranchers have long searched for ways to use the mesquite on their land.

Ansley says mesquite ethanol may be the answer to help ranchers reduce their dependence on foreign oil, and it would be a boon to little towns where refineries would be located. The Vernon work is getting attention from Texas and across the nation.

And while Ansley initiated the project, he is quick to note it's not a solo experiment but credits an entire team.

"There's a whole lot of other people involved in this project," he says.

Aldo Ranch's wildlife work earns honors

By J.T. SMITH

THE Aldo Ranch is in some of the most rugged country near Nolan, Texas. But Doug Stuart is painstakingly trying to improve the ranch — from plants to wildlife to water — with help from specialists and occasional advice from his dad, Al.

For Doug Stuart's efforts, Aldo Ranch was recently recognized as the Nolan County Soil and Water Conservation District's 2006-07 "Outstanding Wildlife Conservationist."

"The ranch management challenge is to balance over 1,000 acres of crop fields, Edwards Plateau range, waterways and wells with food plots and minimal supplemental feeding," says Stuart.

Blessed with water

Aldo Ranch is fortunate to have 13 water wells. It also has concrete tanks and earthen stock tanks. Large windmill-supplied tanks can use smaller concrete troughs to catch overflow. A series of underground pipe throughout the ranch also allows the windmill water to help replenish a network of streams. Electric

Key Points

- Aldo Ranch balances range, cropland and wildlife.
- Ranch seeds grasses and forbs to complement native plants.
- Multiple water sources bless deer, turkeys, quail and dove.

wells also are used.

"Stream corridors are only partially protected by naturally vegetated buffers," Stuart notes. That's one of the things he plans to improve with seeding vegetation.

Also, brush control has led to a resurgence in water, even during the severe drought. "A spring started running again in January 2005; it has slowed down but hasn't stopped," Stuart observes.

The area receives only 23.54 inches of rainfall in a good year. But this year, only 12 inches had come by late fall as the drought persists into this winter.

Managing plant life

While brush is removed to replenish water supplies, patterns of brush are left in strategic places for wildlife.

Stuart also seeds the range with Illinois bundle-



WATER WISE: Doug Stuart (left) and father Al check their overflow concrete tank, which catches overflow water from the much larger windmill tank behind them.

flower, Eldorado Engelmann daisy, Cheyenne indiagrass, Blackwell switchgrass, Kow big bluestem, Van Horn green sprangletop and tall dropseed.

The range also has its native grasses, such as warm-season Haskel side-oats grama (the state grass of Texas), and cool-season grass like Texas wintergrass.

Beyond range, there's 319 acres in crops, including 165 acres in wheat, as well as grain sorghum and haygrazer. If rains come and prices are good, the ranch may harvest wheat.

In 2005, the ranch got approval for acceptance in the Natural Resources Conservation Service office in Sweetwater, Texas, for the Environmental Quality Incentives Program. Fields have been grubbed and

spot-seeded with those mixtures of native, and warm- and cool-season grasses.

A grazing deferment also was initiated in January 2005, and all cattle were removed at that time. When the deferment ends, if Aldo Ranch returns to restocking cattle, the conservation plan calls for two-pasture rotational grazing.

Right now, controlling cedar remains the major goal.

"Aggressive control of cedar [aka juniper] is primary to vegetation improvement and management," Stuart assures. "Cedar limits other trees and grasses."

More information can be obtained about the ranch by e-mailing aldoranch@verizon.net or calling the ranch at (325) 798-3063.

Animals on ranch receive special attention

DOUg Stuart of Aldo Ranch aims to combine natural conditions with improved habitat to provide cover, nutrition and water for healthy wildlife on the ranch. The wildlife mix includes deer, wild turkey, bobwhite quail and dove.

Deer management

Stuart and his dad aim to maintain a 1-2 ratio of buck to does on the property through their deer management, while also increasing overall buck quality and ages.

White-tailed deer are free-range and low-fenced. Stuart keeps a plant inventory list and works with biologists from the Natural Resources Conservation Service and the Texas Parks and Wildlife Department.

"We do have corn in feeders, but only two," he points out. "I really want deer to favor plants on the range." Deer like a variety of plants, Stuart adds.

TPWD helped with census counts to determine deer harvesting needs.

Wild turkeys prolific

Rio Grande turkeys roost, feed, water and breed on the Aldo Ranch.

Part of their diet includes corn. "Turkeys are like vacuum cleaners for the corn," Stuart reports. However, the turkeys also enjoy the native plants on the ranch.

Hunters often get a chance to test their "turkey calling" skills. In Texas, either sex can be hunted in fall, but males, or toms, only in spring.

Bobwhite quail numerous

The bobwhite quail numbers are growing. Stuart counted 26 coveys on the ranch in 2005.



TURKEY TROT: Rio Grande wild turkeys are prolific on the Aldo Ranch, and they can skillfully hide or move pretty fast when needed. They offer hunters a challenge in doing their turkey calls.

The drought and unrelenting heat was tough on quail in 2006, but they survived.

The ranch attempts to control quail predators. Wild hogs, which can wreak havoc on quail nests and eggs, haven't been a big problem ... yet.

Part of that, Stuart guesses, may be due to the ranch being in one of the most-concentrated wind turbine distribution areas in the nation. The seemingly endless wind turbine construction may have dispersed feral hogs. The towering turbines are within a half mile of the eastern portion of the ranch.

Noting that turbines have changed the countryside dra-



FAVORITE FOOD: Sunflowers are perhaps the favorite dove food on the Aldo Ranch. These are at a water source, too.

matically, area rancher Roxy Whiteside says, "The income is probably a savior for some people now."

Extra help for doves

Stuart says doves are notoriously poor nesters, but he's built some nests with special cloth and other materials in an attempt to help nesting.

He's gone with a mix of 70% grasses and 30% forbs on the range for dove, including Maximilian sunflower, a favorite food.