

# FOREST STEWARDSHIP BRIEFINGS

Timber ◇ Wildlife ◇ Water Quality ◇ Soil Conservation ◇ Best Management Practices ◇ Recreation ◇ Aesthetics

## TREE POWER-FUTURE ENERGY SOURCE?

by Robert Burns, Extension Communications Specialist, Department of Agricultural Communications, Texas A&M University System, Agricultural Research & Extension Center, Overton, TX

For more information:

- <http://www.afandpa.org/PressRelease/SubscriptionRedir.cfm?ID=642>

A wood-fueled electricity generating plant may be in your future. In fact, the future is 'now' in some Scandinavian countries, said Dr. Darwin Foster, Texas Cooperative Extension forestry program leader.

"In Sweden, they're already bundling up what we're leaving in the forest after a timber harvest and using it as bio-fuel," Foster said.

"Bio-fuel" is an all-inclusive term that includes any renewable resource used to generate energy. As with ethanol distilled from small grain byproducts and methane from animal-waste, wood refuse is another renewable energy source.

Using forest bio-mass - limbs, bark, tree tops - as a bio-fuel is not unheard of in the United States. Forest product manufacturing concerns already burn wood residue in steam boilers. The steam is used to drive electrical generators and supply part of the energy needed to run the plant. Other mills use "black liquor" - the lignin-rich residue of the pulp and paper industry - for heat, steam and electric power generation.

But currently, in both examples, the residue used is created at the plant during the manufacturing process, not recycled from the harvest site as many European countries do, Foster said.

The use of forest bio-fuel is not limited to energy production of forest industry plants. With prices of natural gas, crude oil and other non-renewable sources rising, scientists are looking at using bio-fuels for residential consumption, Foster said. At least one company in Texas, Green Mountain Energy in Austin, has turned this from science fiction into science fact. Green Mountain uses wood residue to generate a part of the electricity it produces and sells to Austin area

clients. "The potential is huge," Foster said.

In the United States and many other countries, tree tops are left at the harvested sites. Though the tonnage is huge, these tops are considered "unmerchantable" and are left where they fall to bio-degrade or are burned or chipped to speed up the process.

Science and preliminary economic studies say forest residue can be an economically viable energy source. What's required is for everyone involved in the forestry industry - foresters, plant operators, forest landowners, energy producers and educators - to rethink how they do things, Foster said.

Armed with a \$500,000 grant from the U. S. Department of Agriculture, Foster and his colleagues in Extension Forestry and the Texas A&M University department of forest science plan to develop education modules on forest bio-fuel production, harvest and utilization. Foster expects the modules will be comprised of materials such as brochures, handbooks, Web pages and multi-media CD-ROMs and DVDs.

One common concern, Foster said, was that harvesting forest residues could cause nutrient deficiencies and retard future reforestation efforts. But studies have shown, residues can be harvested without loss of re-growth productivity as long as a few simple precautions are taken, he said. These precautions include not taking 100 percent of the residues, avoiding harvesting on sensitive sites, and not removing residues after every harvest. In some areas, returning most of the nutrients as ash to the harvest site might be possible, he said.

"The whole point of this program is to work to reduce our dependence on non-renewable fossil fuels," Foster said.

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## MANAGEMENT CONSIDERATIONS FOR OAKS

### Regeneration

Oaks regenerate naturally from seed (acorns) and from stump sprouts. Large acorn crops occur every two to five years or more. Most acorns remain directly beneath the crown of the tree where they fall, although a few are spread by animals.

Fallen acorns deteriorate rapidly if not protected from drying. Leaf cover provides some protection, but several inches of mineral soil cover is even better for keeping the acorns moist and minimizing damage by insects and other animals.

Acorns begin germinating in the fall immediately after the acorns drop or may germinate the following spring depending on the species. During germination and first-year growth, seedlings can survive in low light. Thereafter, they need more light to survive.

The ability of oaks to produce vigorous to stump sprouts after drought, fire or other damage gives the oaks a distinct advantage over other hardwoods. This ability varies by species, age, diameter, and site quality. In general, red oak species sprout most readily. Sprouting declines as trees grow older and as tree diameter increases. Few oaks larger than 17 inches in diameter will sprout. Oaks are more likely to sprout on good-quality sites than on poor sites.

### Site Quality

The relative abundance, quality, and growth rates of oaks depend on site quality. Oaks survive better than most other tree species on dry sites, but they do not produce much merchantable timber on such sites. On the best sites there is fierce competition among tree species, so oaks are difficult to regenerate there.

### Shade Tolerance

Oaks are only moderately tolerant of shade, and young oaks need full sunlight to outgrow their competitors. This means that in oak stands that have a dense overstory and understory, there will be few oaks in the understory. When overstory trees are harvested or die of natural causes, the understory trees (called advance reproduction) are released to grow, creating a stand of shade-tolerant tree species and a few oaks that originate from stump sprouts.

### Harvest

If you want to perpetuate oaks, a carefully planned harvest will provide the sunlight and space oak seedlings need to survive. Oak stands are ready to be harvested and regenerated when trees are economically mature, when large numbers of oaks are dying from any cause, or when a stand is stocked with poor-quality or undesirable trees.

*adapted from "Woodland Owners' Guide to Oak Management," a 2005 publication by Melvin J. Baughman, Extension Specialist, Department of Forest Resources, University of Minnesota, St. Paul, MN; and Rodney D. Jacobs, Forestry Consultant, U.S. Forest Service, retired.*

*For more information:*

- <http://www.extension.umn.edu/distribution/naturalresources/DD5938.html>

## THE DEGREE CONFLUENCE PROJECT

The Degree Confluence Project was established to document change that occurs on the face of the earth over time and see how man and nature impact our landscape. The goal of the project is to visit each of the latitude and longitude integer degree intersections in the world, and to take pictures at each location. The pictures and stories are then posted on the website. This is an opportunity to get an "organized sampling of the world."

Each degree is approximately 60 nautical

miles (nm) apart. Latitude lines are always 60 nm apart; however, longitudinal lines converge at the poles, so they would only be 60 nm apart at the equator. Interestingly enough, "there is a confluence within 49 miles (79 km) of you if you are on the surface of Earth.

At the homepage (see sidebar), click on "United States" (or another country), then click on the state of your choice. You are then given specific locations and you can view the photos taken there.

*submitted by Joe Pase, Entomologist, Texas Forest Service, Lufkin, TX*

*For more information:*

- <http://www.confluence.org>

## OUTFOXING RABIES

A squadron of state-chartered aircraft flies a series of "bombing" runs across South and West Texas each January. Flying at 500 feet, they drop millions of cubes the size of "fun-size" candy bars over 40 counties.

Through the Oral Rabies Vaccination Program, the state has been fighting - and winning - the battle to prevent the spread of rabies into urban populations in South and West Texas. The program has been so successful that it has virtually eliminated the type of rabies spread by coyotes, which back in 1995 posed a serious public health threat to San Antonio. Rabid coyotes started cropping up in Atascosa County, just 45 miles from San Antonio.

The greatest fear was that the canine strain of rabies that coyotes carry would jump to the huge, free-ranging dog population in and around San Antonio. State health officials were anxious to avoid a repeat of a 1988 South Texas rabies outbreak that caused two deaths and 3,000 people to undergo rabies exposure treatments.

Casting about for a solution, state officials

focused on an imaginative idea that had proved successful with red fox rabies problems in Europe and Canada. Large animal populations could be inoculated against rabies by feeding them baits laced with vaccine. The only way to get the baits to animals ranging in some of the roughest country in Texas was to drop them from the air. The coyote bait drops started in 1995. Gray fox baits were added the next year because a fox rabies epidemic was rapidly spreading across the Edwards Plateau.

The health department reports that, because of the program, the number of canine-strain rabies cases decreased from 122 in 1994 to the last single case along the border in 2001. Gray fox variant rabies cases dropped from 244 in 1995 to 61 by 2003.

The baits themselves are 1 1/4 inches square by 3/4 inch thick. A plastic bag containing the vaccine is placed inside the bait and sealed there with wax. While eating the bait, the animal bites into and ruptures the plastic bag, completing its vaccination.

*by Steve Byrns, Assistant Professor and Extension Communications Specialist, Texas A&M Agricultural Research and Extension Center, San Angelo, TX*

*For more information:*

- <http://agnews.tamu.edu/dailynews/stories/WFSC/Dec1704a.htm>

## TEXAS BRIGADES CALLING FOR CADETS

Texas Cooperative Extension's Texas Brigades is sounding the call for cadets to participate in this year's summer camps.

"Our core curriculum for all the camps stresses leadership development and conservation of our natural resources," said Dr. Dale Rollins, Extension wildlife specialist and originator of the camps. "We fashion these skills into fun and interesting activities that focus on a particular game species at each camp, . . . which typically involves 30 youth ages 13-17 years old."

This year's camps are:

- "Bass Brigade," June 5-9, at McKinney Roughs near Bastrop.
- "South Texas Buckskin Brigade,"

June 12-16, at La Bandera Ranch near Carrizo Springs.

- "Rolling Plains Bobwhite Brigade," June 18-22, at Krooked River Ranch near Lueders.
- "South Texas Bobwhite Brigade," June 26-30, at 74 Ranch at Pleasanton.
- "North Texas Buckskin Brigade," July 17-21, at Stasney's Cook Ranch near Albany.
- "Feathered Forces Brigade," July 24-28, at Pineywoods Conservation Center near Lufkin.

Tuition is \$300 per cadet per camp; some financial aid is available. Applications are due by April 15 and are available at [www.texasbrigades.org](http://www.texasbrigades.org).

*by Steve Byrns, Assistant Professor and Extension Communications Specialist, Texas A&M Agricultural Research and Extension Center, San Angelo, TX*

*For more information:*

- Dale Rollins, (325) 653-4576, [d-rollins@tamu.edu](mailto:d-rollins@tamu.edu)
- Helen Holdsworth, (800) TEX-WILD, (210) 826-2904, [h\\_holdsworth@texas-wildlife.org](mailto:h_holdsworth@texas-wildlife.org)

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Editorial Board

- Dick Pike, TPWD, Lufkin, Texas
- Joe Pase, TFS, Lufkin, Texas

## FORESTRY LAW SEMINAR

Date: **Thursday, April 21, 2005**

Time: **8:00 a.m. - 4:30 p.m.**

Location: Arthur Temple College of Forestry & Agriculture Conference Center, Room 117, SFASU, Nacogdoches, TX

Contacts: Crystal Linebarger (936) 468-3301 or  
Frank B. Shockley (936) 468-2351

This one-day seminar is open to all and is designed for professional land managers, landowners, private consultants, bankers, industrial foresters, and realtors.

Six presentations by experts will cover topics such as title, access, purchase and sale issues, timber trespass, environmental issues, and contractual and liability issues. There will also be a presentation on the ramifications of the U.S. Patriot Act as it relates to forest landowners.

Cost of the seminar will be \$125 before April 14, 2005; \$150 after that. No refunds will be made after April 14.

Further details and registration form: <http://www.sfasu.edu/forestry/services/Forestry%20Seminar%20Brochure81.pdf> or [www.sfasu.edu/forestry](http://www.sfasu.edu/forestry) "Services" & "Conferences."



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