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TENNESSEE

LAND life & Science

VOL. 2/NO. 1 • UT INSTITUTE OF AGRICULTURE

Inside this issue
emerging **MARKETS**
value in **GOOD** genes
SONGBIRDS as
indicators



Tennessee **AGRICULTURE** in a **GLOBAL MARKET**

A FOCUS ON AGRICULTURE AND NATURAL RESOURCES PROGRAMS

THE UNIVERSITY of TENNESSEE

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Dear Friends,

This issue of *Tennessee Land, Life & Science* explores globalization of agriculture. Globalization of agriculture continues to be one of the most important changes in our world. We depend on the global marketplace to sell agricultural and forestry commodities and finished products. Worldwide demand for US agricultural products is strong, as evidenced by the US agricultural commodity price index reaching record highs this spring.



We depend on global trade to supply us with fresh fruits, vegetables, flowers, and other products that may be out-of-season in the US or not widely available from US sources. Our supermarkets are filled with diverse products from around the world, and much of our clothes and furniture is manufactured elsewhere.

We depend on migration and immigration for an ample workforce in our agro-forestry sector, and we depend on bright graduate students and scientists from other countries to keep our research and development programs moving ahead. More than ever, we are dependent on people around the world for our quality of life.

The Institute of Agriculture is fortunate to have faculty members and leaders who developed international programs several years ago to benefit our students, faculty, and constituents. As I write this letter, we are hosting students and faculty from Kasetsart University in Bangkok, Thailand for a month-long study-tour in Tennessee. By the time you read this, UT students will have spent a reciprocal month-long visit in Thailand.

We are also fortunate to have a number of faculty members whose roots are in other countries. These members of our team bring an international flavor to the UT campus every day, and they help us all understand that we have similar hopes and dreams, wherever we are from.

Jack H. Britt

UT Vice President for Agriculture

At top, a delegation from UT prepares to tour the Kasetsart University (KU) Tab Kwang Swine Research Facility in Thailand. Pictured above left, Dr. Britt and KU President Dr. Thira Sutabutra in 2000 after signing a memorandum of cooperation.

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JOIN us



The 23rd Milan No-Till Crop Production Field Day will take place Thursday, July 22, at the Milan Experiment Station. And throughout the summer and fall, field days and festivals will occur at UT Agricultural Experiment Stations across the state.

You can find a full listing of the events at the institute's Web site, <http://agriculture.tennessee.edu>, or by calling (865) 974-7105.



Celebrating spring GRADUATES

Smiles and celebration were the order of the day on May 8 when the College of Agricultural Sciences and Natural Resources hosted commencement for its spring graduates. More than 1,000 proud parents and guests attended the event.

This marked the first time that commencement was held at the college level. The smaller-sized ceremony, as well as a luncheon that followed, gave students and their families plenty of opportunity to linger with faculty members and friends and savor the occasion.



College Program Coordinator Theresa Cooper, right, with spring graduates Andy Holt of Knoxville and Ellie Anderson of Dresden.

For more about these and other developments, visit us on the Internet at www.agriculture.utk.edu.

A VOLUNTEER effort



The University of Tennessee has a rich and proud history of volunteer service. Now the Tennessee 4-H Youth Development Program is helping the university to become known for volunteerism in an entirely new way.

With 4-H's assistance, UT has been certified as a University of Promise. The designation is part of a national program, America's Promise—The Alliance for Youth, that seeks to coordinate efforts to aid children and teens. UT joins an elite group of universities and colleges that have made a commitment to fulfill five ideals associated with positive youth development.

15,000 beetles AND counting

By midsummer, institute entomologists will have released 15,000 or more Pt beetles in the Great Smoky Mountains National Park. The beetles are natural predators of hemlock woolly adelgid, an invasive pest that has decimated hemlocks in the Northeast and now threaten the park's stands of the majestic and ecologically valuable tree. Dr. Ernest Bernard and others associated with the



UT Beneficial Insects Lab are working furiously to breed more beetles for release this season.

"They are difficult to collect in the wild," Bernard said. "Breeding them in captivity is the best method to generate the needed populations."

Exploring food SAFETY

Writers representing national news and media organizations took part in a fellowship program on the agricultural campus in May. The journalists learned about new forms of preservatives and improved food processing technologies, the transfer of food-borne illness, and antimicrobial resistance in bacteria. The program was endorsed by the Council for the Advancement and Support of Education, and hosted by the UT Food Safety Center of Excellence, and the institute's Marketing and Communications Services unit.

Teachers take to the LAB



Benefiting Tennessee's K-12 students: That's the goal of an outreach program that has high school science and vo-ag teachers from across the region returning to the lab to learn some lessons of their own. Teachers isolate DNA from tobacco, ivy, and lily plants and prepare DNA to run on electrophoresis gels to uniquely identify the plants. They also use molecular biology to solve a 'murder mystery' and experiment in adapting the genetics of rose plants.

Biotechnology workshops organized by Drs. Bob Trigiano and Bonnie Ownley of the Department of Entomology and Plant Pathology guide teachers in hands-on activities to increase their knowledge and skills in molecular biology, genetics, and biotechnology. The aim is to give Tennessee students an edge in mastering concepts in advanced science.

"I have students who are going on to compete in the international science fair as a direct result of what I learned in the program," says Jan Coley, AP biology teacher at Jefferson County High School. "The workshop is so critical because it enables teachers to pass on knowledge as well as hands-on experience in molecular aspects of biology."

The material, Coley adds, wasn't even in the curriculum when many of today's teachers were in college. The one-year program is funded by the Tennessee Higher Education Commission.



Competing Globally

Our students tell us that study tours to Thailand, Mexico, Jamaica, Brazil, Germany, Japan, and other countries provide a "life-changing" experience as they learn firsthand about people, cultures, and agricultural programs around the globe. International experience helps our students understand what they will need to do as employees of Tennessee companies to make our state's businesses competitive in a global marketplace.

—Jack H. Britt,
UT Vice President for Agriculture





Thinking Globally

Learning from Each Other

"Other countries look at the world in a way different from our own," says Dr. Robert Orr, international programs coordinator for the institute. "Problems in daily life often have different solutions than the ones we're accustomed to."

Collaborations built up over time have enabled UT researchers involved with small-scale freshwater prawn production to study operations in Thailand, the largest prawn exporter in the world. "We don't want to start from ground zero, because that's not efficient," Orr says. "This broadens their experience and gives them a different scope." In exchange, Thai researchers have come to UT to earn degrees in natural resource management. Mutually beneficial exchanges are also occurring in precision agriculture, food safety, and forestry.

Veterinary medicine and plant pathology are areas of future collaboration. Exotic pests and diseases such as avian flu aren't so exotic in other places, Orr notes, "and we can learn from the work others have already done."



Tennessee's Assets in Trade

Tennessee's location and infrastructure give it unique assets in exporting goods to global marketplaces. Six interstates, major rivers, international airports, and extensive railways position us to ship anywhere in the world.

From its hub in Memphis, Federal Express connects markets that comprise a large portion of the world's economic activity in just one to two business days.

Commerce flows on the state's waterways. Over 250 million tons of goods pass through the Memphis District's boundaries on the Mississippi River, ranking the city's port 38th in the nation in water-borne tonnage. The Tennessee River is an integral part of the nation's inland waterway system.

On land, Tennessee's extensive highway network provides for efficient transport within the state as well as for direct routes to and from major population centers in every part of the United States.

These connections support Tennessee exports of hardwood lumber, cotton, tobacco, soybeans, corn, and other commodities. They also offer opportunity for exchanges of value-added products and niche-market crops—areas of promise for Tennessee producers.



NAVIGATING THE GLOBAL MARKETPLACE

by Kris Christen



Science

Because of global increases in disposable incomes and population figures, the demand for American food products is at an all-time high, creating opportunities for Tennessee producers.

Those looking to sell internationally, however, must keep in mind that simply complying with U.S. regulations doesn't always suffice. According to Dr. David Golden, associate professor of food microbiology, producers must be aware of food safety standards, as well as packaging and labeling requirements. Producers also need to ensure that they are following the agricultural or manufacturing processes mandated by the countries to which they are exporting, Golden notes. For example, cattle feed sold in the U.S. cannot contain cattle waste byproducts, a requirement that was ushered in as a result of bovine spongiform encephalopathy (BSE) outbreaks in other parts of the world. BSE has also made recordkeeping and traceability measures, such as electronic identification tags, all the more important, he added.

Fortunately, America's traceback plans are solidly in place and help to maintain confidence with our foreign consumers. The U.S. Animal Identification Plan, only a couple of years away from complete implementation, will have the ability to do an electronic traceback in 48 hours—some tracebacks will be possible in only two hours.

The way consumers buy food is in transition all over the world. The proliferation of global markets, specialty shops, and gourmet stores is translating into new opportunities for niche products. According to Stanley Trout, chief of marketing services with the Tennessee Department of Agriculture, catering to different markets is a great opportunity for Tennessee producers. "For example," Trout says, "Tennessee's soil and climate are well-suited for specialty peppers, and growers can use a significant portion of crop production for value-added food processing, creating niche products like relishes, salsas, chutneys, and even various types of flavored vinegars."

The UT Institute of Agriculture offers a number of educational programs that can assist farmers and producers in targeting potential export markets. They range from training on pesticide application practices and use of organic fertilizers to crop variety recommendations that improve yields and quality. Institute researchers are also working on edible film treatments for fruits and vegetables to give them a longer shelf life, as well as new methods for removing pesticide residues and bacteria from produce.

Story was written with assistance from Leslie Ogle.



For more information, visit the following Web sites:

www.fas.usda.gov

www.agriculture.about.com/cs/importexport

www.export.gov/regulationsandstandards.html

www.tennessee.gov/agriculture

www.foodsafe.tennessee.edu

Tennessee farmers
act on trends in the
global marketplace.

EMERGING MARKETS



From raw products such as cotton, soybeans, tobacco, and wheat, to value-added products like cookies and potato chips, agricultural exports represent a major portion of Tennessee's total farm receipts. In 2002, Tennessee exported \$610 million in raw agricultural products alone, according to the

U.S. Department of Agriculture. The top five export markets are Canada, Mexico, China, Japan, and the United Kingdom.

The economic impact of value-added products is harder to measure. "In 2001 Tennessee exported \$12 million worth of cookies, \$132 million of whiskey, \$15 million of candy, and \$138 million of prepared potatoes," says Paul Nordstrom, international agricultural marketing coordinator with the Tennessee Department of Agriculture (TDA). "The total economic impact to the state is not reflected in the farm gate figures," he says.

Some nurserymen are exporting plants to Europe, and more nurseries could take advantage of the existing but underutilized market. "Hundreds of acres of nurseries in Tennessee can create hundreds of thousands of plants efficiently and economically. That opens a door to the European market, where plants such as dogwood, redbud, and Bradford pear are well adapted to the southern tier countries with a similar climate," says Dr. Stephen Garton, assistant professor and propagation specialist in the Department of Plant Sciences at the University of Tennessee's Institute of Agriculture.

In the dairy industry, where producers have bred for one trait, yield, Tennessee farmers are now using imported semen to improve other important genetic traits of dairy cattle. Dr. Gary Rogers, a geneticist and professor in the Department of Animal Science, is using robust Scandinavian breeds to improve disease resistance, longevity, and reproductive performance in Tennessee dairy cows. "If we have 80 thousand dairy cows in Tennessee, and death rates are 8 percent, that's about \$9 million in losses from death alone," he says.

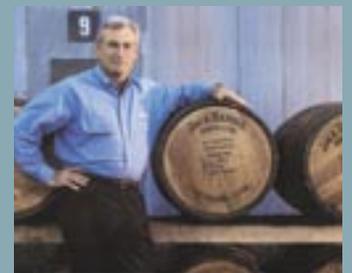
Tennessee farmers are also acting on a small surge in demand for ethnic vegetables, such as jalapeños. The TDA is working with the meat processing industry in Tennessee to develop local processing capabilities for goats at four plants across the state, says Joe Gaines, assistant commissioner in market development.



Dogwoods and other landscape and nursery plants produced in Tennessee are well suited for export markets.



by Elise LeQuire



Master Distiller Jimmy Bedford oversees production of Jack Daniel's whiskey in Lynchburg.



The Pringles plant in Jackson is Procter & Gamble's largest plant in terms of export volume.

FROM LOCAL TO GLOBAL

International study tours are giving UT students an edge in the increasingly connected world of global markets.



With the help of the College of Agricultural Sciences and Natural Resources, 46 students and faculty have traveled to Mexico since 1999, and 129 have visited Thailand. A delegation left for Jamaica in May.

The tours give students and faculty a chance to see firsthand how other countries manage natural resources and develop agricultural markets. That international experience is important, says Dr. Clark Brekke, professor and assistant dean of the college. "All countries are affected by global events, and the tours give students an idea of the global agri-business economy. The tours also give students in different majors a chance to see things that, while not directly related to their field, may be helpful to them in the future."

Students have professional and personal reasons for going. Nathan Coleman, pictured above, is a native of the Totty's Bend community in Hickman County. His trip to Thailand in 2002 marked his first time on an airplane and his first experience in a new culture. "It was a great opportunity to see new things, do some traveling, and learn while doing it."

Coleman, a master's student in agricultural economics, says he came away with a new appreciation for what goes on in his own country. "I am a lot more interested in international affairs now and how one country's actions affect another."

Adriane Cannon says her 2003 trip to Mexico showed her a side of the food industry that she would not have been able to see otherwise. "Since I am a plant sciences major, I would not have been able to see the big companies such as Kellogg's and Coca-Cola," says Cannon, a native of Kingsport, Tenn. "In Mexico, I was able to tour their plants."

So, would Coleman recommend a study tour to someone else? He answers without even the slightest hesitation, "I would recommend this trip to *everyone* else."

Explore more about the institute's international programs at <http://ipanr.tennessee.edu>.



by Gina Fincher



LESSONS FROM ABROAD



by Kris Christen

As the world becomes more globally interconnected, no area of agriculture remains untouched by foreign influences, and the University of Tennessee's International Programs for Agriculture and Natural Resources office is working to capitalize on this development for UT faculty and students.

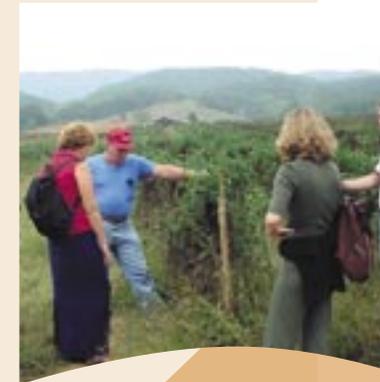
"It used to be that we had all the knowledge and wanted to help the rest of the world," says Dr. Robert Orr, the international programs coordinator. "But there's a lot of knowledge out there, and now, we also want to learn as much as possible from others to help us back here at home."

Since 2000, his office has shifted its focus to study-abroad programs for UT students in Mexico and Thailand, and, more recently, Jamaica, but hosting on-campus training programs for mid-level professionals from other countries remains important. Over the past 15 years, the office has sponsored seminars and workshops for participants from 47 different countries concerned with natural resource management, environmental protection, and rural or regional planning.

The courses combine interactive classroom instruction and discussion with field trips to area forests, parks, and scientific preserves to showcase both successes and failures in resource development and protection. A key theme, Orr notes, is the development of partnerships between parks and surrounding communities so that both sides can benefit from ventures such as ecotourism.

Spending time, too, at area craft shows, community kitchens, and small businesses, "we try to blend in as many ideas as possible so that the participants can take them back and work them into their own situations," says Richard Davis, international programs assistant coordinator.

In return, the UT faculty who teach these workshops and seminars receive exposure to other cultures and ideas in the process. "There's always an information exchange," Davis notes, adding that recent chamber of commerce estimates showed that these international participants also spend as much as \$350,000 annually while in Tennessee, benefiting businesses in the state.



life

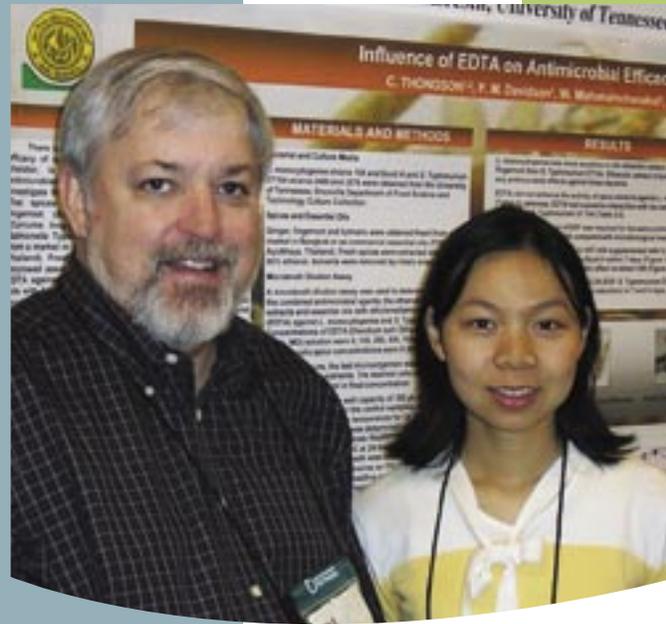
LAND

SHIFTS IN IDEA FLOW

For decades visitors from other nations have toured US farms and production facilities to learn from our operations. Today there are also good reasons for us to visit other countries to find ideas for our own operations.

“I witnessed firsthand how agriculture operates in a global market,” said Extension Agent Ken Goddard, summing up his 2001 trip to Thailand. “We visited a young farmer who had recently set up a neighborhood cooperative to produce asparagus, aloe vera, baby corn and other produce and ship them to Japan. That same day we visited a biotech research center where all equipment was purchased from monies supplied by Japan for GMO testing.”

At a confinement swine operation, Goddard saw how a bacteria solution injected into the pigs’ drinking water virtually eliminated odor in the facility. “What an impact this process would have if perfected and used in animal agriculture throughout the world. There are so many ideas like this to share with one another—to benefit everyone.”



COORDINATED ACTION

Collaboration is the key to competing more efficiently. “Alliances in general are a way to capture value-added

aspects of your products,” says Joe Pearson, director of commodity activities for the Tennessee Farm Bureau Federation. “A major emphasis of marketing right now is an effort to move up the chain in terms of the consumer dollar.”

Drawing upon the positives of the beef cattle alliance in the Giles County area with strong producer and UT Extension support, the Farm Bureau is working to launch similar alliances in the Upper Cumberland region and eventually throughout the state. The teamwork adds value to beef cattle and helps build Tennessee’s reputation for quality cattle—goals that are shared by the statewide Tennessee Beef Cattle Improvement Initiative.

Exploration of new export markets is also an area of coordinated action. “So much of trade negotiation is based on personalities and relationships that it takes time to secure agreements,” Pearson says. “First, we’ve got to build relationships.” Efforts continue to open markets in Cuba and China and to capitalize on the positives in recent trade agreements and treaties.



Stephanie Tarwater of Bakers Creek Honey Farm in Maryville fields questions about beekeeping and honey production from Thai students visiting this spring. In 2000 Tarwater and other UT students traveled to Thailand. “I was big eyed the whole time I was there. It’s different than what we have in the states. It hit me just how different the minute I got there. I learned a lot about the agricultural products they have, ones that are so different from those in the US.”

life

GLOBAL SOLUTIONS

In 2001, UT and Kasetsart University jointly hosted a food safety workshop in Bangkok. “The benefits of the exchange of information and expertise were many,” says animal science professor Dr. Alan Mathew. “The problems we face in safeguarding our food supply cross international boundaries, and the US economy benefits in a large way from viable export markets for our agricultural products. If we can demonstrate to the international community that we are proactive in identifying and developing strategies for control of foodborne hazards, through workshops and collaboration, we can help promote confidence in our export products.”

Professional contacts that Dr. Michael Davidson, professor of food science and technology, made in Thailand led to a doctoral research internship for Thai student Chitsiri Thongson, who spent six months in Knoxville researching antimicrobial activity of spices against food poisoning bacteria. The work has been presented at two national meetings and submitted for publication.



Science

DEMOGRAPHIC INFLUENCES

About half of Tennessee’s Extension agents report businesses in their counties are targeting Hispanic customers. Opportunities exist to market products and services to the state’s growing number of Hispanics, just as the US’s growing Asian population and growing Asian markets abroad are driving changes in the marketplace.

“There’s consideration of markets that are no longer local,” says Rob Holland, Extension specialist with the Center for Profitable Agriculture. “People around the globe are audiences for our products.”

“We’ve seen niche market opportunities for more flavorful, spicy foods, hot salsas, and different cuts of meat,” Holland says. “Ethnic communities and markets may provide new opportunities for some Tennessee products.”

VALUE IN GOOD GENES

The increasing trade in animal genetics helps Tennessee producers improve their herds. The trade also creates opportunity to boost farm income by selling advanced genetics to the market.

In the 1960s, flow of genetics was mostly to the states. Cattle producers brought in Simmental, Chianina, Limousin, Gelbvieh, Salers, and other continental breeds as genetic alternatives to the French Charolais that had been brought over in the 1930s, to increase growth traits and improve carcass traits.

“Those cattle and the newly established composite breeds they helped to create are now an accepted part of Tennessee herds, in both crossbreeding programs and purebred operations,” says Dr. David Kirkpatrick, animal science professor and beef cattle breeding specialist.

Today exchange is more likely to occur through male breeding stock marketed through artificial insemination (AI) companies. Charles Steer of Sunbow Jersey Farm in Henry County finds a growing portion of his farm’s profits in selling male breeding stock to an AI company that distributes to producers across the US and around the globe. “There has been tremendous growth in the recent years,” Steer says. “It’s the easiest way to tap into the genetics that this country and others have.”

Tennessee’s poultry industry is small compared to other states, yet two poultry companies here are doing a brisk business in selling breeding stock. “There are only about five very large broiler breeding companies in the world, and two of them are operating in Tennessee,” says poultry specialist Dr. Charles Goan.

Hubbard Farms in Bledsoe County sells chicks domestically and to markets in Mexico, South and Central America. Aviagen is a Scottish-based multinational and the world’s largest poultry breeder. In Crossville, the company produces breeding stock that is sold domestically and to the export market all over the world.

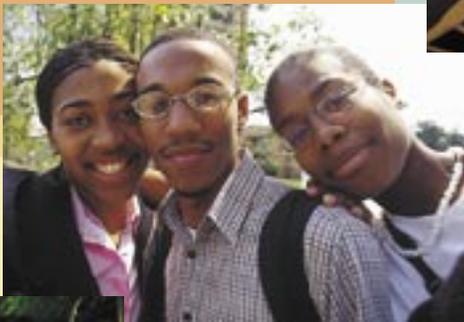
“These firms generate a substantial amount of the tax base for their counties,” Goan says. “Hubbard is one of Bledsoe County’s largest employers and has 45 or more farm families there and in Rhea County making a living with breeder chickens producing eggs for the company. Aviagen has 15 company-owned farms and more than 100 employees.”

ROBUST STUDENT SCHOLARSHIPS

by Elise LeQuire



*Awards
that aid
students
benefit all*



On an early spring evening in April, more than 300 students, faculty, parents, and donors gathered in Hollingsworth Auditorium for a festive event. They were there to attend the

College of Agricultural Sciences and Natural Resources's 44th annual Scholarships and Awards Banquet. The event celebrated outstanding students and also the strides the college has made with its scholarship program.

This academic year the college offered scholarship awards totaling more than \$800,000. The college has seen an 87 percent increase in scholarships awarded annually over the past five years. The generosity of donors has led the college to be rated first among southern region land grant universities for its scholarship program.

While the scholarships assist financially challenged students, they also attract topflight students whose presence benefits everyone. "As our awards program has become better known and the amount of money has increased, I have seen significant improvement, based on test scores and grade point averages, in the caliber of students entering our college," says Dr. Michael O. Smith, professor in the Department of Animal Science and chair of the scholarship committee. "Students are very appreciative of the funding they receive."

The Arch E. McClanahan Agricultural Memorial Scholarship alone, which is presented to outstanding students from Tennessee, offers an average of \$4,500 per student per year, helping to attract some of the most talented students in the state.

"The scholarships I received from the University of Tennessee made me decide to attend school here," says Erika Bible, a senior from Greeneville majoring in food science and technology who is also a Whittle Scholar. "It's great to be able to graduate without being in debt from student loans. This freed me to attend graduate school in the fall," she says.

The college's scholarships are awarded to undergraduate and graduate students and may be unrestricted or dependent on certain stipulations of the donors. "Some go to students from a specific county, or from a family involved in a certain segment of the agricultural industry, and some are wide open," says Dr. Mary Albrecht, professor and associate dean. "That flexibility enables us to serve a wide variety of students. Everyone benefits."



ON THE WINGS OF BIRDS

Songbirds signal ecosystem health and sustainability

What could connect such disparate locales as Ontario, Knoxville, and the Yucatan? They are joined together by the wings of birds, each place a point on the transcontinental migration route of many neotropical songbirds. It takes someone special to recognize this, to know that many of these bird species are declining, and to envision a multinational effort to reverse that trend—someone like Dr. David Buehler, professor of wildlife science in the Department of Forestry, Wildlife, and Fisheries.

Two years ago Buehler teamed up with Greg Wathen of the Tennessee Wildlife Resources Agency to submit a grant through the North American Bird Conservation Initiative. Their proposal was to pool the expertise of UT biologists with that of wildlife managers and researchers in Canada and Mexico. The goal was to find out just what is happening to the colorful, sweet-sounding warblers and other bird species that have long traveled the ancient migratory corridor that borders eastern Tennessee. The golden-winged warbler pictured above is one of the species under study.

Through funding from the Neotropical Migratory Bird Conservation Act, Buehler and other Tennessee biologists have established a partnership with the Mexican biosphere reserve, Sian Ka'an. There they have held workshops to develop a monitoring strategy and train staff and local supporters to gather baseline data on the birds as they overwinter in the sunny tropics. The underlying themes of this multifaceted project are echoed throughout Buehler's research: how can wildlife species coexist in a world increasingly dominated by human activity?

"What I do is develop research programs and research projects related to monitoring and managing wildlife population sustainability," Buehler said. "Where we really need some creative research and management ideas is in managed landscapes where we're trying to use natural resources to help support humanity but at the same time maintain functional ecosystems."

Buehler and his graduate students work in a wide spectrum of managed landscapes. Recent research demonstrating the agronomic benefits of flooding crop fields during winter has encouraged farmers in western Tennessee to implement this practice, thereby also providing habitat for overwintering waterfowl. Other research has looked at how to support species that favor mature forests, such as the cerulean warbler, while at the same time selectively harvesting some of the trees in those forests.

"My research program has been directed at using birds as indicators of ecosystem health and sustainability and then helping land managers create new ways of managing landscapes to, essentially, have their cake and eat it too," Buehler said. "We can actually use these resources in a wise way and yet maintain those elements of the ecosystem that are important to us."

Learn more about Dr. Buehler and his work at <http://fwf.ag.utk.edu/personnel/dbuehler.htm>.



by Mary Tebo



"A field class can bring out the wildlife enthusiast in just about anyone—even if it does require rising at the crack of dawn."

—David Buehler



HUGHES GIFT SEEDS TURFGRASS PROGRAM

Whether you are beautifying the yard, practicing your golf game, or enjoying watching the Vols beat Florida on football Saturday, hardly a day passes where we don't enjoy turf in some way. But along with the pleasure and functionality we get from well-manicured lawns, parks, and athletic fields,

grass can cause headaches, too. Weeds, fungi, insects, shade, and temperature extremes are the bane of homeowners, landscapers, golf course superintendents, and grounds managers alike. According to UT turfgrass expert Dr. John Sorochan, assistant professor in plant sciences, we have an even harder time here in Tennessee.



by Amy Jenkins

"We live in what's known as the transition zone," says Sorochan. "Our summers are too hot and humid for grasses like Kentucky bluegrass that perform well to our north, and winters are often too cold for grasses that do well farther south." The need for better management and hardier varieties extends beyond aesthetics and functionality. The turfgrass industry is estimated to contribute over \$1 billion to Tennessee's economy each year. That's not counting indirect revenues that come from turfgrass-dependent sporting events and recreational activities.

Recognizing the need to better serve the state's booming industry, UT's turfgrass team—Sorochan and colleagues Drs. Tom Samples, Scott McElroy, and Janice Zale—has been working on ways to improve turfgrass management in Tennessee. A major deferred gift from Jack Hughes, a longtime supporter and friend to agricultural programs at UT, helped seed the initiative and led to partnerships with UT Athletics and the Tennessee Turfgrass Association, providing even greater opportunities for teaching and research.



NEW CHAIR SOUGHT FOR GRASSLANDS CONSERVATION

At one time, North America was home to about 1.4 million square miles of prairies and savannahs. Now, native grasslands comprise some of the most threatened habitats in the United States. Wildlife populations that depend on grasslands have declined drastically. In many cases, land development and agricultural practices have contributed to native grassland loss.

The UT Department of Forestry, Wildlife, and Fisheries has committed to raising about \$2 million to establish the Chair of Excellence for Restoring Tennessee Grasslands. Solutions for conservation of quail, prairie songbirds, and other wildlife involve educating landowners, managers, and farmers. The chair would focus on habitat conservation through teaching and research, but would also work closely with Extension to assist landowners. A major goal would be to educate farmers about using native grasses in the warm season as a complement for cool-season hay and pasture programs.

For more information, contact Rhodes Logan in Development and Alumni Affairs at (865) 974-1934 or Billy Minser in the UT Department of Forestry, Wildlife, and Fisheries at (865) 974-7126.



Hughes is pleased to contribute to UT's turfgrass program when it has never been stronger. "I believe there is excellent potential to create an even greater academic team of researchers and students, while benefiting people of all ages and from all walks of life at the same time, particularly those who enjoy being outdoors and appreciate the natural beauty of our state."

Hughes gave a significant gift to the university with a full third going to support the turfgrass program. Associate Vice President for Development Buddy Mitchell says he's not surprised by Hughes's generosity. "Jack has supported UT for many years and has a deep appreciation for his years as a student here. We are grateful for his loyalty to his alma mater and for his continuing service on the Institute of Agriculture Development Board."

UPCOMING EVENTS:

The fourth annual *Leaders & Legacies* event will be held at the Knoxville Zoo on June 11. The event includes dinner and recognizes donors who have given \$50,000 or more to support programs within the Institute of Agriculture. Call Amy Jenkins for details at (865) 974-8622.

Agricultural Extension offices around the state are hosting *estate planning seminars*. The seminars are open to everyone. Please contact Dennis Jones in the Office of Planned Giving for more details at (865) 974-7396 or djones@utk.edu.



Ag Day, the Institute's annual homecoming event, will be held on Sept. 25 this year. Admission is free, and all are welcome. Call Amy Jenkins at (865) 974-8622 or visit the Web site at <http://agday.tennessee.edu> for details.

The Alumni Council recently partnered with the UT National Alumni Association to give ag grads the opportunity to benefit from established alumni association chapters throughout Tennessee. These **ag alumni events** feature faculty talks about new developments in agriculture and natural resources. Prospective students can also learn about the array of interesting programs offered by the college. Watch for notices of upcoming events, or contact Rhodes Logan at (865) 974-1934.



English Cranfield, John Mount, and Harold York

4-H EXPERIENCE LENDS A HAND

by Mary Elizabeth Taylor

English Cranfield, a sophomore in the Department of Food Science and Technology, has been named this year's Purity Dairies Scholarship recipient. Harold York from Purity Ice Cream in Knoxville presented Cranfield with a \$1,000 scholarship check.

Cranfield is from Decatur, Tenn., where she was very active in 4-H. According to Dr. John Mount, who serves on the committee that selected Cranfield, her 4-H dairy experience along with her academic performance at UT were major factors in her selection. Since 1981, Purity has contributed over \$45,000 to benefit programs within the UT Institute of Agriculture.

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A BLOOMING GOOD TIME



Join us on June 26-27 for the second annual Blooms Days Garden Festival and Marketplace. The marketplace, held in the UT Gardens on the Knoxville agricultural campus, will feature unique crafts and gardening goods, as well as specialty plants selected exclusively for the event. Adult gardening-related programs, activities for children, and live music are included in the admission cost. Admission

is \$10 for a one-day pass, with children under 13 free. Two-day passes are also available. Last year's event attracted 2,500 visitors and raised more than \$17,000 to benefit the gardens. For more information, contact Melinda Davis at (865) 659-9427 or visit <http://bloomsdays.utk.edu>.



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