



The **Temperate Agroforester**

Volume 5, Number 2

April 1997

Agroforestry Practice and Potential in the Northeastern U.S.

By Louise Buck and Amy Waterman, Cornell University

Agroforestry practice in the northeastern United States is diverse, reflecting complex patterns of climate, topography, socio-economic development and land use within this 13-state region (including Virginia and West Virginia and all the states northward).

Patterns of land use in this predominantly metropolitan area are in a state of transition. With certain exceptions residential dispersal into suburban and rural areas is increasing, as the conventional agricultural industry declines and becomes consolidated into fewer and larger management units. The socio-economic characteristics and livelihood strategies of rural landowners therefore are becoming more diverse. The region is characterized by numerous local initiatives to re-

evaluate and re-orient agriculture to make its practice more socially and environmentally consistent with visions of sustainable development.

History of Agroforestry in the Northeast

Prior to the arrival of Europeans in New England, Native peoples in the region practiced various forms of shifting cultivation and fallow management. While certain groups were more migratory than others, many used controlled burning of the forest understory to enhance habitat for game animals, to clear fallowed sites for re-cultivation and to create favorable conditions for berries and other gatherable foods. They engaged also in



Forest farming enterprises, such as this combination of American ginseng and sugar maple, will be visited on the field tours during the 5th North American Agroforestry Conference in August. (Photo: G. Garrett)

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Cornell Announces Schedule for Agroforestry Conference

Cornell University is set to welcome AFTA members and the public to the fifth North American Agroforestry Conference, August 3-6, at Ithaca, New York. Two days of concurrent sessions featuring over 50 speakers, plus field trips to view local agroforestry projects, are planned. Registration and accommodation reservations are now open; current AFTA members will receive a discount on registration fees.

Theme

The fifth Conference on Agroforestry in North America is titled "Exploring the Opportunities for Agroforestry in Changing Rural Landscapes." The

changing nature of agriculture and forestry across North America is also changing relationships between rural and urban communities. As we adjust to the economic and environmental realities of the 1990's, a variety of agroforestry practices are emerging as viable alternatives to traditional land use practices. Nowhere is this more apparent than in the northeastern U.S. The conference theme will be addressed from various perspectives by plenary and contributing speakers, poster presentations, landowner presentations, and field trips. Concurrent sessions will focus

➤ **Conference, p. 3**

The Temperate Agroforester

ISSN 1084-5925

http://www.missouri.edu/afta/afta_home.html

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Mission Statement

The mission of AFTA is to advance the knowledge and application of agroforestry as an integrated land use approach to simultaneously meet economic, social and environmental needs. AFTA focuses on agroforestry in temperate zones, with an emphasis on North America. AFTA pursues its mission through networking, information exchange, public education, and policy development.

AFTA Membership Dues

Regular: 1 year \$25, 2 years \$45, 3 years \$60;

Student \$10; Sustaining \$50; Lifetime \$300.

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Send annual membership dues by check payable to AFTA in US dollars to: Dr. Deborah Hill, AFTA Treasurer, Dept. of Forestry, University of Kentucky, Lexington, KY 40546-0073, USA.

The Temperate Agroforester

Editor: Miles Merwin

Contributions related to agroforestry are welcome. Please submit items either on PC-formatted diskette, via e-mail, or typewritten. Deadlines for submissions are the 15th of March, June, September and December. Address all items to: Miles Merwin, The Temperate Agroforester, P.O. Box 266, Lake Oswego, OR 97034, Tel.(503) 697-3370, Fax (503)697-1767, e-mail mlmerwin@teleport.com

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President's Corner

By Gene Garrett, AFTA President

Greetings! It's only April but all the signs are there to indicate that 1997 will be another big year for AFTA. We kicked off the new year by putting the final touches on our National Report, "The Status, Opportunities and Needs for Agroforestry in the United States." We are in the process of having copies bound and you can expect yours in the not too distant future. On March 20th, several of us were invited into Washington to participate in a 3-hour live satellite broadcast on agroforestry sponsored by the USDA - another first! The goal was to reach professional advisors throughout the US who are being called upon by landowners to provide assistance in establishing agroforestry plantings. I was pleased with the willingness demonstrated by so many who took their valuable time to make the broadcast a success.

One of the most gratifying aspects of my job as your President is to have the opportunity to interact with so many individuals that are committed to seeing agroforestry achieve success. With a membership such as ours, we are destined to experience many successes. Speaking of members, our membership drive is in full swing and since January we have picked up 8 new members. Keep up the good work! As many of you are aware, your leaders are currently wrestling with the question of reorganizing AFTA as a nonprofit organization. Members will be asked to make the final decision through a special ballot later this year. Along with the reorganization of AFTA, I have recently asked Joe Colletti, our President-Elect, to chair a special committee to pursue the formation of Regional Working groups within AFTA. It is our desire to be able to bring recommendations to you during our biennial conference to be held in Ithaca, New York during the first week of August. Any suggestions that you might have for this committee should be directed to Joe Colletti, Forestry Department, Iowa State University, Ames, Iowa 50011. □



We welcome your ideas for our

New AFTA Logo

The prize of life membership in AFTA can be yours! See the January issue for contest details.

► Conference

on fundamental processes in agroforestry systems, characteristics of agroforestry practices, socio-economic viability of agroforestry, institutional development of agroforestry science, and policy and practice.

Hosts for the conference, in the Cornell College of Agriculture and Life Sciences, are the Department of Natural Resources and the Cornell Agroforestry Working Group (CAWG). The conference coordinators are James Lassoie, Louise Buck and Barbara Cliff. Current co-sponsors include the Association for Temperate Agroforestry (AFTA), the International Union of Forestry Research Organizations (IUFRO), and the National Agroforestry Center (NAC).

Conference Schedule

On Sunday, August 3, registration will begin in the afternoon. Early conference arrivals will have the opportunity to visit the Cornell Plantations. The welcome reception will be held that evening, featuring Dr. James P. Lassoie, Chair, Department of Natural Resources Cornell University, New York Congressman Maurice D. Hinchey, and Dr. Brian Chabot, Associate Dean, Cornell College of Agriculture and Life Science.

The first full day of the conference, Monday, August 4, will begin with opening remarks from each of the sponsoring organizations. Keynote addresses will be delivered by Dr. Fee Busby, Deputy Chief for Science and Technology, NRCS, and Dr. Rob Myers, Director, USDA Sustainable Agriculture Research and Education (SARE). That evening, there will a poster session and presentations by New York state agroforestry practitioners.

Concurrent sessions scheduled for Monday morning and afternoon (as of April 4) are as follows:

Session 1A INSTITUTIONAL DEVELOPMENTS

Historical institutional development of agroforestry. Dr. James P. Lassoie, Cornell Univ.

State agroforestry legislation. Agus I. Rahmadi, Univ. of Missouri - Columbia

The dynamic emergence of agroforestry in Minnesota. Scott J. Josiah, Center for Integrated Natural Resources and Agricultural Management, Univ. of Minnesota

Session 1B INSTITUTIONAL INCENTIVES

Economic and environmental benefits of agroforestry in agriculture. David Pimentel, Cornell Univ.

Poplar agroforestry in "temperate" Asia. Dr. Steven M. Newman, Biodiversity International Ltd.

Implications of tree tenure for agroforestry: A case study. Steven Olson, Univ. of Idaho

Session 1C COMMUNICATION AND ADOPTION

Catalyzing large-scale agroforestry adoption: Expanding the

program outreach of agroforestry extension organizations. Scott J. Josiah, Univ. of Minnesota

Opportunities and barriers in adopting agroforestry and other integrated land use practices. Jan Joannides, Center for Integrated Natural Resources and Agricultural Management, Univ. of Minnesota

Methods for effective communication of agroforestry principles and practices. Barbara A. Cliff, Cornell Univ.

Session 2A FOREST FARMING

Forest farming with ginseng: A study of ecological, medicinal, and market relations. Louise E. Buck, Cornell Univ.

Farming forest mushrooms. Deborah B. Hill, Univ. of Kentucky

American ginseng cropping within maple forests as an alternative land-use system for maple syrup producers in Quebec. Alain Oliver, Universite Laval

A strawberry-sugar maple agroforestry system. Steven H. Emerman, Ashland Univ.

Session 2B RIPARIAN BUFFER STRIPS

Improving soil and water quality with riparian management systems. T.M. Isenhardt, Iowa State Univ.

Effectiveness of multi-species buffer strip for sediment and nutrient removal. K. Lee, Iowa State Univ.

Evaluating soil quality changes in a riparian buffer strip system using particulate organic matter. O. Marquez, Iowa State Univ.

Fine root dynamics, coarse root distribution and soil respiration rates in a multi-species riparian buffer system. A. Tufekoitoglu, Iowa State Univ.

Session 2C ALLEY CROPPING & SILVOPASTURE

Crop production in an alley cropping demonstration. W. Geyer, Kansas State Univ.

*Effects of cattle grazing in established black walnut (*Juglans nigra*) plantations: Assessment of heifer performance utilizing continuous or rotational grazing management.* Jeff W. Lehmkuhler, Univ. of Missouri

Effect of grazing on wood quality in slash pine. Bruce E. Cutter, Univ. of Missouri

Silvopastoral management in commercial loblolly pine plantations. Terry R. Clason, Louisiana State Univ. Agricultural Center

Session 2D WINDBREAKS

An assessment of windbreaks in central Wisconsin. C. A. David, Univ. of Wisconsin

Cherry Valley school wind protection system -development and implementation. Daniel Morgan, Otsego County SWCD

Living snow fences for drift control in Cortland County, NY. Amanda Barber, Cortland County SWCD

The use of deep rooting woody perennials for capture of leaching nitrate in cash grain fields. Dean Hively, Cornell Univ.

Session 3A MODELING INTERACTIONS

Modeling light, water, and nutrient allocation in a silvopastoral system. P. Mou, Virginia Polytechnic Institute and State Univ.

Shelterbelt Agroforestry Modeling System (SAMS): Present

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Field Research on Alley Cropping in Southeastern Iowa

By Ronald D. Snyder, Geode RC&D, Burlington, Iowa

Geode Resource Conservation and Development, Inc. has three different projects related to agroforestry which began in 1991. These projects consist of growing trees and agronomic crops together to provide an increased diversification of operation; for example, multi-cropping black walnuts and oaks with crops such as corn, soybeans, oats or wheat.

Geode RC&D is located in southeastern Iowa, bordered on the east by the Mississippi River. The topography is gently rolling in the northern part of the district, and more hilly in the south. Corn and soybeans are the major crops. The agroforestry projects are located on Class III and IV soils.

Geode RC&D's first multi-cropping project was on privately owned land in Des Moines County, Iowa. The corn patterns included 4, 8 and 12 rows of corn between one row of trees. To achieve a closed tree canopy in the shortest possible time, the 4 row pattern is best. However, if corn production is desired for a sustained period, then wider spacings have a definite advantage.

This project had the best chance of short and long income because corn was an immediate money crop and in 40 years there would have been veneer-grade logs to be harvested. Actual yield was approximately 95 bushels per acre and showed potential economic advantages. The project was terminated prematurely in 1994 at the request of the landowner.

The RC&D, in cooperation with Iowa State University at Ames, is involved in a second project called Natural Terrace. Our concept is to show that erosion can be reduced on many highly erodible acres using contour strip-cropping with trees. The project is on the Iowa Army Ammunition Plant.

In 1994, strips of agricultural crops were established with strips of trees across the face of the northern slopes. The crop strips are maintained as control

strips that can be easily farmed with standard farm equipment. As an alternative to terracing, this system integrates standard forestry practices with conventional farming techniques. The layout is 9 feet between rows and 4 feet between trees within each row. Minimum width is 33 feet to accommodate 3 rows of trees. Additional tree rows, or portions of tree rows, were added as space allowed to make strips conform to the natural variation in slope.

Two types of tree rows were planted, with pine rows on the outside edges of quality hardwood strips consisting of mixed black walnut, red oak and white oak.

Sediment deposition is being measured from the upper to the lower edges of the tree strips each fall. Geode RC&D is planning to extend this special project beyond the completion date of December 1997.

The third agroforestry project is located at the Des Moines County Land-fill near Burlington, Iowa. There are approximately



Rows of black walnut (some in tube protectors) were interplanted with corn in an agroforestry trial established in southeastern Iowa by Geode RC&D. (Photo courtesy Ron Snyder).

35 acres where the RC&D is demonstrating direct seeding of walnuts and acorns. All of the seedlings were direct seeded in the fall of 1993. Chemical usage included Roundup, Princep and Prowl at label rates. The trees were measured in the fall of 1994 using a ruler and a caliper to see what effect various levels of corn competition had on the growth of the seedlings.

Results showed that year-old direct seeded walnut seedlings were as vigorous and thriving in no till corn as those without corn intercropping. In 1996, the area was planted to soybeans between the tree rows. In 1997, corn will be planted.

Ron Snyder is Coordinator for the Geode Resource Conservation and Development Office, 3002A Winegard Dr., Burlington, Iowa 52601, phone 319-752-6395 or fax 319-752-0106. □

NRCS Launches National Conservation Buffer Initiative

The Natural Resources Conservation Service (NRCS) will encourage landowners to adopt conservation agroforestry practices through the new National Conservation Buffer Initiative (NCBI). The agency's efforts to promote NCBI will initially target landowners whose contracts under the Conservation Reserve Program (CRP) are due to expire later this year. Contracts on more than 20 million acres now in CRP will expire on September 30.

Conservation buffers are strips or blocks of trees and shrubs planted to protect the soil and water resources of crop and range land. Conservation buffers or "greenstrips" include practices such as windbreaks, riparian buffer strips, filter strips, contour strips, herbaceous wind barriers, hedgerows, grassed waterways and streambank protection.

NRCS will provide financial and technical assistance for the establishment of conservation buffers through several on-going programs, including CRP, Environmental Quality Incentive Program (EQIP), Wildlife Habitat Incentive Program (WHIP) and Wetlands Reserve Program (WRP). Landowners whose 10-year CRP contracts are due to expire this year will be encouraged to re-enroll part or all of their acreage under the new continuous sign-up provisions of CRP. The establishment of conservation buffers on land returning to crop production will help these landowners meet the compliance requirements of CRP or other government assistance programs.

Current estimates by NRCS have identified over 11.8 million acres of crop and range land nationwide which could benefit from "greenstrip" practices. Ripar-

ian buffer strips, windbreaks, grassed waterways and contour strips are needed on 4.6 million, 1.6 million, 2.6 million and 3 million acres, respectively.

Conservation buffers help protect water quality by slowing runoff, trapping sediment and filtering residues from fertilizers and other chemicals applied to adjacent cropland. Wind buffers such as windbreaks and herbaceous barriers reduce soil erosion and increase the productivity of crops and livestock. Periodic harvesting of forage or trees within windbreaks (as "timberbelts") or riparian buffer strips produces supplemental income while renewing the protective capacity of the buffer. All conservation buffers provide valuable habitat for wildlife.

Buffer strips are used along streams, on field margins and within fields and pastures. They are most effective when they are combined with other conservation practices as part of an integrated approach to land management. For example, to protect streams with active bank erosion, streambank stabilization by vegetative or mechanical methods is needed before establishing riparian buffer strips.

Several private organizations and companies are partners with NRCS in the NCBI, including the National Corn Growers Assn., National Assn. of Farmer Cooperatives, National Assn. of Conservation Districts, and Monsanto.

Further information about conservation buffers and government programs that can provide financial and technical assistance is available through offices of the NRCS, Farm Service Agency and local resource conservation districts. □

EQIP Provides Cost-Share for Conservation Agroforestry

USDA announced a new program last October, the Environmental Quality Incentives Program (EQIP), that will provide farmers and ranchers cost share assistance to implement conservation measures. Some agroforestry practices such as riparian buffer strips and windbreaks will be covered under the program.

EQIP offers technical, financial and educational assistance to protect and improve soil, water, and related resources. The 1996 Farm Bill directs the USDA to provide EQIP assistance to address critical soil and water conservation needs in priority areas across the country. Local landowners will be involved with USDA agencies, lead by the Natural Resources Conservation Service (NRCS), in the process of designating

priority areas. Nevertheless, land outside the priority areas will still be eligible if it has significant resource protection needs.

Cost share rates up to 75 percent for approved conservation practices, such as grassed waterways, filter or riparian buffer strips, and wildlife habitat enhancement, can be provided to family-size farms and ranches. Furthermore, incentive payments covering 100 percent of the cost of eligible practices can be made to enable qualified producers to implement land management practices that would not otherwise be initiated without financial assistance. Total cost

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► **Northeast**

selective felling, planting and cultivation of trees for a range of products that contributed importantly to their subsistence, particularly nuts and maple sugar. Traditional linkages are apparent between *shifting cultivation* and *forest farming* in the Northeast.

During the period of initial settlement, plentiful forestland was viewed as an obstacle to agriculture, a challenge to overcome. Within a comparatively short time span however, extensive forest clearing led to shortages of important tree and forest products. Within this context of private property and rampant deforestation, farmers began to demarcate and develop *woodlots* to assure their households a continuous supply of energy and building materials. An early form of *zonal agroforestry*, it became common in some areas for farms to maintain woodlots that might average some 20 percent of the farm's total land area.

During the early part of this century, following the peak of agricultural expansion when forestland was in its most reduced state, a substantial portion of farm woodland area in the New England and mid-Atlantic region was classified as woodland pasture. *Woodlot grazing* as a form of *silvopastoralism* remains only a minor activity in these states, where deciduous hardwood forest prevails. This is a function of widespread perceptions that the carrying capacity for cattle in such environments is very low due to the negative impact of trampling on the regenerative capability of hardwood root systems.

As alternative, commercial fuels and building supplies began to penetrate rural markets during the last century, the critical economic role of woodlots to the farm enterprise diminished substantially. Nonetheless, woodlots have remained a common feature on Northeast farms through the present. While comparatively few have been managed for optimal productivity, to many farmers they provided a "living bank account". They can be harvested to meet anticipated large expenses such as college tuition, weddings, or retirement, or to generate cash for emergencies. Many landowners produce a regular supply of non-timber products from their woodland resources. Historically, maple syrup has been the predominant *tree crop* produced from farm woodlots in the Northeast.

As farming throughout much of the region has declined in recent decades, farm woodlots have given way to rural woodland parcels which may not be associated directly with a farm enterprise. For decades the comparative economic value of these woodland re-

sources declined, and often were considered not worth the cost of management. More recently, as a function of changing development patterns in the region as well as shifts in national and international timber markets and supplies, the economic value of the eastern hardwood forest resources are improving. In turn, incentives for management are changing. In this environment, farm woodlot owners face new economic opportunities.

During the 1930s in this region, as elsewhere in the country, small tree plantations began to be established on a large scale, initially on public lands. As efforts to mitigate soil erosion from runoff and wind through public tree planting programs expanded, and to improve the economic value of abandoned farmland, farmers and other landowners were provided incentives to develop *protective tree and forest plantations*. Today however, many of these plantings in the northeast are in a state of decline, and possess little economic value.

Fruit orchards and vineyards have long been an important feature of the Northeast's agricultural landscape. These may be classified as a *tree crop-based agroforestry* practice when small fruits are intercropped between rows of fruit trees, or when protective windbreaks are established in association with the orchard. While neither of these practices is widespread in the region, both have been in evidence for many years.

Presently a new type of zonal agroforestry is emerging in the region in the form of *riparian buffer strips*. While to date they have been applied on a very limited basis, the potential economic value of these primarily protective plantings has been the focus of analysis from the outset and is an important factor in their design.

Current economic trends and social-environmental values are giving rise to a number of more integrated agroforestry systems which involve closer plant associations. A rapidly growing *forest farming practice* involves the cultivation of ginseng as a high value understory crop in managed woodlands. A number of maple producers in the Northeast have established ginseng gardens in their sugar bushes, providing for two high value cash crops from a highly managed woodland. Shiitake mushroom production on carefully selected small hardwood logs that are undesirable for timber production can produce a food product for profit while improving the vigor and appearance of the woodlot.

Efforts to convert abandoned pasture and cropland to forestland more efficiently and profitably have generated *intercropping* initiatives, involving the cultivation of comparatively high value walnut, oak, cherry or maple hardwoods. On occasion these are interplanted with nurse tree crops. Black locust (*Robinia pseudoacacia*) is valued for this purpose as a nitrogen-fixing tree that produces excellent fenceposts. Various herbage or forage crops might be intercropped with the trees during early years of establishment.

As the sustainable agriculture movement in the region gains ground, increasing numbers of growers show interest in managing complex arrangements of fruit and nut producing trees and shrubs in close association with herbaceous crops. There are also increasing efforts by growers to improve the value of their farm enterprise by making more direct economic use of woodland resources through the cultivation of high value understory crops, regular harvesting of wood products, or leasing of woodlands for recreational uses. Examples of these highly variable *mixed zonal and intercropping* systems are numerous. No particular form of the system appears to prevail however, and the number of landowners engaged in such practice is still very limited.

Opportunities and Needs

Agroforestry is not a widely known or used concept in the Northeast, although it is beginning to “catch on” among landowners and resource management agency officials. As it does, it assumes various meaning within different zones of this diverse region and within different organizational and agency cultures. For example, *forest farming* is most applicable in the Appalachian region, and falls primarily in the domain of the forestry sector. *Riparian buffer strips* are most widely used so far in the coastal flats area and also in Vermont, which exhibits comparatively progressive environmental and land use policies. Intercropping, silvopastoral systems and shelterbelts are more prevalent in the rolling hills where conventional agriculture tends to maintain a comparatively strong foothold in the region. Each of these systems rest more within the domain of the agricultural sector.

Most agroforestry practices have arisen spontaneously as a function of demographic and market forces which shape land use patterns. Comparatively little agroforestry practice in the northeast stems from public cost sharing and technical assistance programs.

Comparatively dense networks of mixed urban and rural land uses in many parts of the region create

needs for “environmentally-friendly” buffering. Agroforestry-based landscape features are arising in response to this need.

Similar close interaction between environmentally and socially conscious agricultural producers and urban consumers give rise to farmers markets, green markets, community supported agriculture, and other locally-oriented mechanisms. These provide opportunities for marketing a number of agroforestry “specialty” products which tend to be grown on a relatively small scale and sometimes irregular basis.

There is significant unmet potential within the region to expand agroforestry knowledge and practice, to address an array of development and environment needs. As the idea becomes more widespread, it appears to generate strong interest and support by producers, consumers, and agency representatives.

There is significant scope for advancing the process of agroforestry technology development and adoption within the region through efforts to coordinate and focus the expanding interest and appeal among innovative landowners, consumers, agency representatives, and academic practitioners. Enthusiastic, agency and academic participation in the emergent Northeast Agroforestry Consortium attests to this interest and tendency. Similarly, many landowners in New York who claim to practice agroforestry express interest in networking to exchange ideas and information about agroforestry, and to influence the policy environment in favor of this mode of production.

A small grants program, designed to bring together multiple stakeholders (landowners, market specialists, agency representatives, and multi-discipline research teams) to address locally-focused agroforestry technology and marketing needs and opportunities is likely to have considerable positive impact in the region.

The components for an integrative institutional infrastructure for agroforestry development are present within the region. In addition there is ample vision, experience, private resources and perceived need in the Northeast upon which to build and on-going process of agroforestry innovation. With the addition of two critical factors, national leadership and financial resources, aimed to reorient land use priorities and approaches toward sustainable productivity, agroforestry appears poised to “take off”. □

(Excerpted from a paper entitled “Agroforestry Practice and Potential in the Northeast: a Macro-Level Assessment,” Dept. of Natural Resources, Cornell University, 1996.)

► Conference

status and future directions. Carl Mize, Iowa State Univ.

Biological and ecological interactions in a temperate inter-cropping system, Ontario Canada. Andrew M. Gordon, Univ. of Guelph

Session 3B MULTI-PURPOSE TREE PERFORMANCE

*Pistillate flower production and retention in black walnut (*Juglans Nigra* L.) Under alley cropping management: effects of timing of application and form of nitrogen fertilizer.* Dean Gray, Univ. of Missouri

Factors affecting establishment of black locust on steep pastures in its native Appalachian range. Charles M. Feldhake, USDA - ARS

A review of mesquite and leucaena agroforestry in southwestern US. Peter Felker, Texas A&M Univ.

Session 3C RESOURCE CAPTURE

Effects of shade on forage crops that have potential use in agroforestry systems. Chung-Ho Lin, Univ. of Missouri-Columbia

Forage legumes as living mulches for trees in agroforestry systems. Joseph L. Alley, Univ. of Missouri Center for Agroforestry

Seasonal influences on sheep diets within a northern Idaho conifer plantation. Theogene Mbabaliye, Washington State Univ.

Session 3D EVALUATING FUNDAMENTAL PROCESSES

Toil, trouble, and twiddling thumbs: The problem of experimental design in temperate agroforestry. W. Terrell Stamps, Univ. of Missouri

Don't forget the basics: Theory, system selection and design. Paul A. Wojtkowski

Whitethorne agroforestry research and demonstration project. James A. Burger, Virginia Tech

Participants will be able to choose one of several all-day field trips on Tuesday, August 5. Tour topics include forest farming, silvopasture, windbreak management, fallow deer farming, and willow biomass production. Other tour options are under development. Everyone will rendezvous that evening for a barbeque dinner at Taughannock State Park.

The final concurrent sessions will be held on the morning of Wednesday, August 6, as follows:

Session 4A SOCIO-ECONOMIC VIABILITY

Socio-economic implications of community owned agroforestry: The Winnebago Tribe of Nebraska. Marcella Szymanski, Iowa State Univ.

An economic analysis of a temperate inter-cropping system in southern Ontario Canada. K. Rollins, Univ. of Guelph

The economics of a riparian management system on Bear Creek in Central Iowa. Joe Colletti, Iowa State Univ.

Session 4B ECONOMIC POTENTIAL

Marketing agroforestry products; New strategies for old products. Jim Chamberlain, Virginia Tech

Willow biomass - A sustainable multiple use system. Timothy

A. Volk, College of Environmental Science and Forestry, State Univ. of New York

Agroforestry systems: Drainage management option. Fawzi Karajeh, Agricultural Drainage and Reuse Program, California Dept. of Water Resources

Session 4C SOIL, WATER & ATMOSPHERIC RELATION

Earthworm and soil fauna distribution and their effects on soil structure in three temperate agroforestry intercrop sites in southern Ontario. Gordon Price, University of Guelph

The soil-moisture effects of three crops on black walnut and hybrid poplar seedlings. Peter A. Williams, Univ. of Guelph

Effects of juglone concentrations on soil N mineralization - A laboratory and field incubation approach. Naresh V. Thevathasan, Univ. of Guelph

Greenhouse gases and temperate agroforestry on Saskatchewan. John Kort, Agriculture and AgriFood Canada, PFRA Shelterbelt Centre

After the morning paper sessions, there will be two concurrent discussion panels: Future Agroforestry Research Strategies (invited panelists: Bill Rietveld, NAC; Mike Gold, IUFRO; Charlie Feldhake, ARS; and Tom Lyson, Cornell); and Policy and Marketing: Challenges and Opportunities (invited panelists: Adela Backiel, USDA; Jonathan Kays, Coop. Extension Service; representative from Frontier Herbs; Louise Buck, CAWG; and a representative from NY State DEC.

After lunch, concluding comments on *Opportunities for Agroforestry in Changing Rural Landscapes* will be offered by Christopher Bond, US Senator from Missouri, with an introduction by Dr. Eugene Garrett. An open ended discussion session will follow prior to the conclusion of the conference in early afternoon.

Registration Information

All current members of AFTA will receive complete program and registration information by mail direct from Cornell University. The latest conference information will also be posted at AFTA's web site www.missouri.edu/afta/afta_home.html.

Registration (before July 1) for the conference is \$155 for AFTA members in good standing, and \$175 for all others; the rates increase by \$10 for registrations received after July 1. The registration fee includes the Sunday reception, all conference presentations, conference coffee breaks, Tuesday field trips and box lunch, Tuesday evening barbeque, and the closing lunch buffet on Wednesday. On-campus housing is available at Cornell (\$18 single, or \$15 double, per person per night), and two local motels will have special room rates on a first-come basis. Meals can be purchased at the campus dining hall or other nearby eateries. □



Updated Address for AFTA Web Pages

www.missouri.edu/~afta/afta_home.html

Webmaster Dean Gray at the University of Missouri has revised the address for the AFTA web pages to make it easier to remember. Visit your Association's web site by pointing your browser to the above address. (The old address will also continue to work for the time being).

Arbor Day Foundation

www.arborday.org/

The Arbor Day Foundation web site has brief information about "Conservation Trees," their program which encourages rural landowners to plant trees for conservation and production (e.g., windbreaks, woodlots, riparian buffer strips, etc.). Also included is brief information about other ADF programs: Tree City USA, Trees for America, Rain Forest Rescue, Celebrate Arbor Day, Conferences and Training: Knowledge for Growth, and Arbor Day Farm.

FACT Net

www.winrock.org/forestry/factnet.htm

Winrock International has developed a web site for the Forest, Farm and Community Tree Network (FACT Net). It includes general information about FACT Net programs, a list of publications, and tables of contents of research reports and field manuals. Some species *Fact Sheets* and issues of *FACT Net News* are also available on-line.

Ginseng Information Sites

There are several computer resources now available related to the cultivation of ginseng. The American Ginseng Society posts its newsletter on the web at earthwks.com/earthwks/AGSI. Information about growing ginseng in the Northwest can be found at www.e-z.net/~ginseng. Growers in British Columbia and similar climates can refer to www.agf.gov.bc.ca. The Pest Management Center at Delhi, Ontario has a site with color pictures of ginseng diseases and cultivation practices: res.ag.ca/london/pmrc/pmrchome.html. There is also a news group on ginseng known as PANAX. To subscribe, send an e-mail message to mailserv@cariboo.bc.ca with only the following in the body of the message: subscribe panax firstname lastname (fill in your name). Messages to

other members of the news group can be sent to panax@cariboo.bc.ca.

Agscope

www.agscope.net:80/agscope/agscope.html

A good starting point for on-line information about agriculture, Agscope is divided into six sections: clients, commodities, news, search, weather, and links. The news section has pointers to over 30 magazines and on-line information sources. The search feature can look for keywords in linked web pages, software and file lists, news, reference, maps and travel, and people categories. Many links to other sites are included related to employment, calendar events, government, organizations and crops.

Center for Agroecology

zzyx.ucsc.edu/casfs/

The Center for Agroecology and Sustainable Food Systems at UC Santa Cruz conducts research and educational activities related to sustainable agriculture. On the UCSC campus, the Center operates a 25 ac farm and 4 ac garden as a research and training facility. Each year it hosts students for a six-month Apprenticeship in Ecological Horticulture. Publications available include the newsletter, *Cultivar*, and four white papers on themes related to sustainable agriculture. This web site contains detailed information about the research and education programs of the Center as well as information for students and visitors.

EARTH Library

farm.fic.niu.edu/earth/library.html

The mission of the nonprofit Foundation E.A.R.T.H. (Environment, Agriculture, Research and Technology in Harmony), based in St. Louis, is to "provide farmers with credible information about farming practices and new production technologies that are environmentally sound." The EARTH Library is a collection of useful links to a wide variety of information sources about agriculture and the environment. Among the topics included are agronomy, range management, sustainable agriculture, wildlife, alternative crops and livestock, energy use, precision agriculture, soil and water conservation, wetlands, and water quality. □



Northern Nut Growers Association

The Northern Nut Growers Association, Inc. (NNGA) is America's oldest and largest private group dedicated to research and education on nut-bearing trees. Temperate agroforesters seeking information about nut trees can benefit from the practical experience of the group's members.

NNGA is a national non-profit organization, founded in 1911 to share information on nut tree growing, with members throughout the US and 15 foreign countries. Members include beginning nut growers, farmers, amateur and commercial nut growers, experiment station workers, horticultural teachers and scientists, nut tree breeders, nursery operators, and foresters.

NNGA members meet at a different site once a year, generally in August. Meetings include visits to local amateur and commercial orchards, experimental and research sites, nurseries and nut processing plants. There are lectures on all aspects of growing nut trees for the hobbyist and for the commercial nut grower. Both amateurs and professional experts are always on hand to share their knowledge and experience. There are demonstrations of grafting, advice on which nut cultivars to choose for individual climate and soil conditions, nut evaluations and displays of equipment and new products. Several members usually donate nuts for cracking and eating.

Members of NNGA receive several publications, including an annual report and quarterly newsletter. The proceedings of the annual meeting contains the most recent data and authoritative information on all phases of nut tree growing. The importance of these reports is attested by the many standing orders from libraries and other institutions for copies of each volume as published. The quarterly newsletter, *The Nutshell*, contains articles on tree growing, reports, and announcements of current interest to members of the Association.

Members also have access to a lending library of back issues of NNGA publications and books and periodicals on nut tree culture. A complete membership directory gives members contacts with the nation's leading authorities on the culture of nut bearing trees, commercial horticulture experts, and top-ranking amateurs.

Membership in NNGA is \$20.00 per year in the US (\$22.00 for Canadians, \$25.00 for citizens of other countries). Checks or money orders, payable to NNGA (in US funds only), may be sent to: Jim Quaintance, NNGA Library, 5008 110th Street NE, Solon, IA 52333-9138. Specific inquiries on nut trees can be sent via e-mail to Tucker Hill, NNGA Secretary, at sproutnut@aol.com. For more information, write to the above address or see NNGA's web site at www.ic-serv.com/nnga/.

► EQIP

share and incentive payments are limited to \$10,000 per person per year and \$50,000 over the life of the contract. EQIP will provide 5 to 10 year contracts for cost share funding, and three year contracts for incentive payments. All producers who receive assistance under EQIP must have a conservation plan.

Funding for EQIP comes from USDA's Commodity Credit Corporation. Congress has authorized \$200 million per year through the year 2002 for EQIP. By law, half of the program funds will be targeted to natural resource concerns related to livestock production, and half will be allocated to conservation needs related to crop production. Large confined livestock operations are not eligible for cost share payments. Fi-

nancial assistance is limited to small and medium (family) size operations.

Specific conservation practices that will be eligible for cost share or incentive payments will vary geographically since funding priorities will be set at the state level based on local resource conservation needs. Local working groups will advise the State Technical Committees established by NRCS which will in turn make recommendations to the NRCS State Conservationist.

More information about how to and technical assistance under the EQIP program is available from local offices of NRCS, Farm Services Agency (FSA), cooperative extension, and resource conservation districts. General information on USDA conservation programs is also available via the Web at www.fsa.usda.gov.



Restoration Forestry

Although not a new book (published 1994), this is worth having as a useful reference. While the principal focus of the book is on the sustainability of native coniferous forests of the Pacific Northwest, it does provide an overview of the general issues related to sustainable forest management. Documenting each chapter are extensive "resource guides" which list books, periodicals, organizations, and government and educational institutions relevant to many different subjects, including forest ecology, biodiversity, fire, forest soils, fish, wildlife, restoration, erosion control and tree planting. Several chapters cover both historical and contemporary forest management by Native Americans, as well as regional applications of restoration forestry throughout the US and Canada. Short essays and resource guides also cover boreal, tropical and temperate forests in different regions of the world. Although sparsely illustrated, the book does have comprehensive indices of all books, films, organizations, etc. mentioned in the text, as well as specific topics.

Restoration Forestry, \$26.95 plus \$4.00 shipping (WA residents add sales tax). Send order with check

to Friends of the Trees Society, PO Box 4469, Bellingham, WA 98227.

Agroforestry and Farm Forestry

This book, which focuses on northeastern Victoria, Australia, continues the series of agroforestry books co-authored by Rowan Reid (see *Temperate Agroforester*, July 1996). It is a good example of how agroforestry information should be disseminated on a regional basis using relevant information. The different roles of trees on farms are discussed, including shelter, salinity and erosion control, water quality protection, wildlife habitat, weed control and fire. Other chapters cover silvicultural practices for growing high-value timber in agroforestry and farm forestry regimes, on-farm timber processing, marketing farm-grown timber, whole farm planning and tree planting design. Many one-page case studies of individual farms are included to illustrate the successful implementation of specific agroforestry practices.

Agroforestry and Farm Forestry, A\$25 plus A\$8 for "economy air" postage. Send check in Australian dollars, or charge by Visa or MC, to Agmedia, PO Box 258, East Melbourne, Vic. 3002 Australia.



Mark Your Calendar

Edible Forest Gardens, April 25-27 (Belchertown, MA) and Sept. 26-28 (Deerfield, MA). Two weekend workshops on design and installation of multipurpose forest gardens. For information, contact Dave Jacke, Native Harvest Designs, PO Box 148, Leverett, MA 01054, Tel 413-548-8899, e-mail: DjackeNHD@aol.com.

Bamboo Agroforestry Workshop, June 21-23, Port Townsend, WA. For information, contact Gib Cooper, Pacific Northwest Chapter-American Bamboo Society, 28446 Hunter Creek Loop, Gold Beach, OR 97444, Tel & Fax 541-247-0835, e-mail: bambugib@harborside.com, or see Web page at www.bamboo.org/abs/PNWWorkshop.html.

Agroforestry for Sustainable Land Use: Fundamental Research and Modelling, June 23-28, Montpellier, France. For information, contact Daniel Auclair, CIRAD / INRA, Unite de modelisation des plantes, B.P. 5035, 34032 Montpellier cedex 1, France, Tel +33-67-59-38-57, Fax +33-67-59-38-58, e-mail: auclair@cirad.fr.

Fifth North American Agroforestry Conference, August 3-6, Ithaca, NY. Co-sponsored by AFTA and hosted by Cornell University, the theme will be "Challenges for Agroforestry in Changing Rural Landscapes" (see information this issue).

Agroforestry: Driving Forces, Forging Solutions, October 4-8, Memphis, TN. Seminar organized by Agroforestry Working Group during Society of American Foresters national convention. **Call for papers**; submit 250 abstract by April 15. For information, contact Richard Schultz, Dept of Forestry, Iowa State University, Ames, IA 50011, Tel 515-294-7602, Fax 294-2995, e-mail rschultz@iastate.edu.



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