The Ames Forester

1997
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Letter From the Editor

Welcome to the 1997 edition of The Ames Forester. The focus of this year’s issue is “The Branches of the Profession”. Several articles have been written by different professors in the field of Forestry to show how diverse Forestry professionals are these days.

I am always impressed to see the amount of different activities that happen within the department each year, and when it comes time to log them in The Ames Forester, it is hard to know where to begin.

I hope that this edition is as fun for everyone to read as it was for me to put together. I would also like to take this opportunity to thank all of the people who helped out with The Ames Forester this year. I would not have been able to make a dent without the help of Ann Holtz, Gretchen Holstein, Jan Meyer, and Chad Garrett. There are also many others who contributed their time to this magazine and to the others, Thank you!!.
I urge you to have fun while reading this and take care!

Sincerely,

Tom Schultz
Editor of The Ames Forester
Agroforestry Systems: The Bear Creek Riparian Management Success Story

Richard C. Schultz - Professor

Thomas M. Isenhart - Research Associate

Joe P. Colletti - Associate Professor

Department of Forestry
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Introduction
The agricultural landscape has four major sources of non-point source (NPS) pollutants. These are: 1) surface and subsurface runoff which carry sediment and agricultural chemicals to streams; 2) eroding streambanks which can contribute more than fifty percent of the sediment load to the stream; 3) field tile drains which contribute the highest concentrations of soluble agricultural chemicals to streams; and 4) livestock grazing of streamside or riparian areas which contribute to bank instability and add animal waste and pathogens to the water.

Riparian Management Systems
To demonstrate the benefits of properly functioning riparian zones in the heavily row-cropped midwestern U.S., the Agroecology Issue Team (AIT) of the Leopold Center for Sustainable Agriculture and the Iowa State Agroforestry Research Team (IStART) are conducting research on the design and establishment of a Riparian Management System (RiMS) model. The purpose of this system is to restore the essential ecological functions that the riparian areas once provided. Specific objectives of this riparian management system are to intercept eroding soil and agricultural chemicals from adjacent crop fields, slow flood waters, stabilize streambanks, provide wildlife habitat, and improve the biological integrity of aquatic ecosystems.

The RiMS model consists of four components: 1) a constructed, multi-species riparian buffer strip, 2) soil bioengineering technologies for streambank stabilization, and 3) constructed wetlands to intercept and process NPS pollutants in agricultural drainage tile water and riparian zone rotational grazing systems with controlled access to the stream channel (Figure 1). The RiMS is being designed so the four components can be used individually or in combination depending on the NPS pollution problems that have been identified for a particular landscape. The research on this model was initiated in 1990 along a 1 km length of Bear Creek in a highly developed agricultural region of central Iowa. The buffer strip system has subsequently been planted along an additional 2.4 km of Bear Creek upstream from this original site.

Multi-Species Riparian Buffer Strip
The general multi-species riparian buffer strip layout consists of three zones (Figure 2). Starting at the creek or streambank edge, the first zone includes a 10 m wide strip of 4-5 rows of trees, the second zone is a 4 m wide strip of 1-2 rows of shrubs, and the third zone is a 7 m wide strip of native warm-season grass. This design is important because the trees and shrubs provide perennial root systems and long-term nutrient storage close to the stream while the grass provides the high density of stems needed to dissipate the energy of surface runoff from the adjacent cropland.

Fast growing trees are recommended to provide a functioning multi-species riparian buffer strip in the shortest possible time. It is especially important that rows 1-2 (row 1 is closest to the streambank edge) in the tree zone include fast-growing, riparian species such as willow (Salix sp.), cottonwood (Populus deltoides), silver maple (Acer saccharinum), hybrid poplars (Populus sp.), and box elder (Acer negundo). Appropriate moderately-fast growing species include black ash (Fraxinus nigra), river birch (Betula nigra), hackberry (Celtis occidentalis), shellbark hickory (Carya laciniosa), swamp white oak (Quercus bicolor), Ohio buckeye (Aesculus glabra), and sycamore (Platanus occidentalis) can be grown in rows 3-5. The key to tree species selection is to observe native species growing along existing natural riparian zones and select the faster growing species. If height from the top
The multi-species riparian buffer strip model presented here prescribes a zone of trees, a zone of shrubs, and a zone of prairie grass. Although these species combinations provide a very effective plant community, they are not the only combinations that can be effective. Site conditions (e.g., soils, slope), major buffer strip biological and physical function(s), owner objectives, and cost-share program requirements should be considered in specifying species combinations and placement.

Although the model that AIT and ISTART have developed is 20 m wide on each side of the creek, stream, or river, a multi-species riparian buffer strip may have different widths that can be adapted to fit each site and land ownership. The total width of the buffer strip depends in large part on the major functions of the buffer strip and the slope and use of the adjacent land. If the major purpose of the buffer strip is sediment removal from surface runoff, a width of 10-15 m may be sufficient on slopes of 0-5%. If excess nutrient removal from the soil solution also is an important function, a width of 20-30 m would be necessary depending on the kind and quantity of agricultural chemicals applied and the soil and cultivation system used. If row-crops are found adjacent to the buffer strip, both the sediment and chemical removal functions would be important. If increased wildlife habitat is an objective of the buffer strip, widths of 30-100 m would provide a more suitable wildlife corridor or transition zone between the upland agricultural land and the aquatic ecosystem (Castelle et al. 1994).

Streambank Bioengineering

Several authors have estimated that greater than 50% of the stream sediment load in small watersheds in the Midwest is the result of channel erosion (Roseboom and White 1990). This soil usually consists of small silt and clay particles which are ultimately deposited in rivers, lakes or backwater areas, choking these areas with sediment and diminishing their value as habitat for fish and aquatic macroinvertebrates (Frazee and Roseboom 1993). This problem has been exacerbated by the increased erosive power of streams as result of stream channelization and loss of riparian vegetation. The typical solution is to buttress blocks of concrete, wood or steel along the stretch of the bank which is eroding (Frazee and Roseboom 1993). Such solutions are costly to build and maintain, provide little aquatic habitat and often do not slow water movement because of their smooth surfaces. An alternative streambank stabilization technique is the use of the streambank to the water level at normal flow (summer non-flood stage) is more than 1 m and soils are well drained, species such as black walnut (Juglans nigra), red oak (Quercus rubra), white oak (Quercus alba), white ash (Fraxinus americana) or even selected conifers can be planted in rows 4-5 ft. apart. The slower growing species will not begin to function as significant nutrient sinks as quickly as faster growing species. Other selections could be made based on species growing in neighboring uplands.

Shrubs are included in the design because of their permanent roots and because they add biodiversity and wildlife habitat. Their multiple stems also function to slow flood flows. The planted in rows 4-5 ft. apart. The slower growing species will be part of the mix. Because of its structure, switchgrass is recommended because it produces a highly frictional surface to intercept surface runoff and facilitate infiltration. Other warm season grasses, such as big bluestem (Andropogon gerardii) and indiangrass (Panicum virgatum) is recommended because it produces a uniform cover and has dense, stiff stems which provide a highly frictional surface to intercept surface runoff and facilitate infiltration. Other warm season grasses, such as wild plum (Prunus americana), pin cherry (Prunus pensylvanica), peachleaf willow (Salix amygladoides), and sandbar willow (Salix interior).

The grass zone functions to intercept and dissipate the energy of surface runoff, trap sediment and agricultural chemicals in the surface runoff, and provide a source of soil organic matter for microbes which can metabolize the NPS pollutants. A minimum width of 7 m of switchgrass (Panicum virgatum) is recommended because it produces a uniform cover and has dense, stiff stems which provide a highly frictional surface to intercept surface runoff and facilitate infiltration. Other warm season grasses, such as Indian grass (Sorghastrum nutans) and big bluestem (Andropogon gerardii) and native perennial forbs also may be part of the mix. Because of its structure, switchgrass should be used where surface runoff is most severe. If the buffer strip is being planted on a recently abandoned crop field, a mixture of perennial rye and timothy grass should be sown before or at the time of planting. If the buffer strip is being established on an abandoned pasture, strips of grass should be killed prior to planting the trees and shrubs. The prairie seed mix can be drilled into a pasture sod that has been killed with a herbicide. Weed control is of paramount importance during the first 3-4 years of establishment. The planting should be inspected frequently and appropriate herbicides or mowing used if needed. The tree and shrub rows should be mowed once or twice during the season to help identify the planting rows and to discourage rodent problems. The plantings should be inspected after every major storm event and areas repaired where surface runoff or flood flows have washed out plant material.

It costs about $350-$400 per acre to install the three zone multi-species buffer strip. This includes plant purchases, site preparation, planting, and maintenance costs in the first year. About $20 per acre should be figured for annual maintenance for the first 3-4 years. Cost-share programs such as the Conservation Reserve Program (CRP) and the Stewardship Incentive Program (SIP) can provide assistance with establishment costs.

Nineteen Ninety-Seven
of locally available natural materials such as willow posts or other live plant material, often in combination with revetments of rock, cut Eastern redbed, or other woody material (Figures 3 and 4). These techniques are often referred to as soft engineering or soil bioengineering. The root systems of these plants provide strength to the streambank soils and their stems provide a frictional surface which slows flood flows reducing their erosive potential. If these stems are damaged by unusually large flood events, the roots and remaining stems will produce new stems. This dynamic system also can provide habitat for terrestrial and aquatic organisms.

Several different soil bioengineering techniques have been employed by AIT and ISTART (Figures 3 and 4). On vertical or actively cutting streambanks, combinations of willow 'posts' and/or anchored dead tree revetments are used to slow bank collapse. These plant materials provide a frictional surface for absorbing stream energy and trapping sediment. The goal of these plantings is to change the streambank angle from vertical to about 50° to allow other vegetation to become established. Willow (Salix sp.) cuttings with diameters ranging from 0.6 cm to 12 cm are collected during the dormant season, cut into 0.3 - 3 m sections, and stored in a cool place until planting. Small cuttings with diameters between 0.6 cm - 5 cm can be manually installed. Large diameter cuttings should be hydraulically installed using an auger mounted on a backhoe.

One or three rows of the largest cuttings (posts) are placed into the stream bed at the base of the streambank at a spacing of 0.6 x 1 m between posts. An additional 2 - 4 rows of small diameter cuttings (stakes) should be planted into the bank above the low water line.

Where there is a concern for active undercutting of the bank, the toe of the bank can be stabilized using bundles of Eastern redbed (Juniperus virginiana) or small hardwoods (5-6 year old) such as silver maples, oaks, etc. can be tied together into 2 - 4 tree bundles. A row of these bundles is laid horizontally along the bottom most row of willow posts with the bottoms pointed upstream and the bundles anchored into the bank. Where potential undercutting may be severe, rock can be used along the toe. Where high, flashy flood flows are expected, grass can be seeded and natural fiber geo-textile mats can be stapled to the banks with willow cuttings planted through them. These bioengineering solutions are very effective and less expensive than traditional streambank stabilization techniques.

**Constructed Wetlands**

A characteristic of many parts of the upper midwest is the presence of an extensive network of subsurface tile drainage. Such tile drains provide a direct path to surface water for nitrate or other agricultural chemicals which move with the shallow groundwater. In such instances, constructed wetlands which are integrated into new or existing drainage systems may have considerable potential to remove nitrate from shallow subsurface drainage (Crumpton and Baker 1993, Crumpton et al. 1993).

Small wetlands can be constructed, at a ratio of 1 hectare (ha) of wetland to 100 ha of cropland, to process field drainage tile water from the cropped field. A shallow excavation of less than 1 m at the middle can be excavated within the multi-species buffer strip. A s drainage tile is rerouted into the wetland at a point furthest from the stream, maximizing the residence time of drainage tile water within the wetland. A simple gated water level control structure at the wetland outlet provides control of the water level maintained within the wetland. Cattail rhizomes (Typha glauca) can be collected from local marshes or road ditches and planted within the wetland and native grasses and forbs can be planted on the constructed berm.

Bacterial denitrification is the major process of nitrogen removal in constructed wetlands. Thus their removal rate improves over time as an organic substrate of plant remains forms on the bottom. Even initial water quality results are very encouraging with up to 80% of the nitrate-nitrogen being removed during the warmer times of the year. In addition, the wetland is also very attractive as wildlife habitat.

**Rotational Grazing**

Rotational grazing systems can improve streambank stability and forage production for livestock. Large pastures can be divided into 6-7 smaller ones and grazed for several days between 20 -30 day rest periods. This pattern concentrates the grazing pressure for a short time and gives both the streambanks and the forage crops time to recuperate. This method of grazing is more similar to the grazing of bison that once passed over the landscape impacting any one prairie or wetland area for only one or two days at a time. It is best to keep the livestock off of the streambank and out of the channel if sediment and organic chemical additions are to be minimized. This can be done by placing a fence 3 m from the bank edge. Access to the stream can be provided in areas where the bank is stable or pasture pumps can be used to keep the livestock completely out of the stream.

**System Effectiveness**

The components of the RiMS model can effectively intercept and treat NPS pollution from the uplands. However, it should be stressed that a riparian management system cannot replace upland conservation practices. In a properly functioning agricultural landscape, both upland conservation practices and an integrated riparian system contribute to achieving environmental goals and improved ecosystem functioning.
Long-term monitoring has demonstrated the significant capability of these systems to intercept eroding soil from adjacent crop land, intercept and process agricultural chemicals moving in shallow subsurface water, stabilize stream channel movement, and improve in-stream environments, while also providing wildlife habitat, biomass for energy, and high quality timber (Schultz et al. 1995). The buffer strip traps 70-90% of the sediment in surface runoff and has reduced nitrate and atrazine concentrations moving through the soil solution by over 90 percent, with resulting concentrations well below the maximum contaminant levels specified by the U.S. EPA. The constructed wetland has also proven to be very effective in processing nitrate and other NPS pollutants moving in the agricultural tile drainage water. Streambanks protected by bioengineered plant systems have stood up to the recent major floods of 1993 and 1996. Rotational grazing systems can result in revegetation of streambanks and reduced sediment loads. Wildlife benefits have also appeared in a very short time with a nearly five fold increase in bird species diversity observed within the buffer strip versus an adjacent, unprotected stream reach. The RiMS can be effectively used to improve the sustainability of the agricultural landscape.

Literature Cited


A MAJOR CHANGE IN THE PRODUCTS CURRICULUM IS PROPOSED

Floyd Manwiller

It has been a long-standing philosophy of the Department of Forestry that all graduates earning a BS degree be qualified Forest Resource Managers. In keeping with this philosophy, students in the Forest Products option take many of the Resource Management courses, and to meet their interest in wood utilization, take the six products courses. This curriculum has prepared our graduates well for production positions in industry and the vast majority do take industrial positions in wood utilization rather than in Resource Management.

However, the last visiting Society of American Foresters accreditation team felt that the products curriculum was lacking some coursework required of Resource Managers. The team also stated that the current curriculum did not prepare students for professional careers in the marketing of forest products. More recently a Board of Regents review team suggested evaluation of the course mix in the products option. They recommended that courses from other departments be required to better fit student needs. Students presently have 20 credits of free electives. We informally advise them to use a majority of the electives to more fully prepare themselves for a career in the area of their interest. With the credits available a student could earn a minor in another department. However, the choice of option is made late in the sophomore year and by then it is often difficult to acquire the prerequisites needed for a minor. Also, a considerable number of students transfer into Forestry with electives used up by courses not required in our curriculum.

To address the expressed concerns and better prepare our Products graduates for a challenging career, we are consider-
Community Forestry

Urban and Community Forestry: Opportunities and Challenges
by J. R. Thompson

Community Tree Management” (Forestry 475) became a regular course offering two years ago in the Department of Forestry at Iowa State University. “Urban Forestry” seminars/special topics courses had sporadically been offered during the 1980’s in response to student and faculty interest in the subject. A regular course offering in this area was added to the curriculum to provide essential background and experience for the growing number of students that are employed (both during their years at Iowa State University and after graduation) in various aspects of urban and community forestry.

A gradual demographic shift in the U.S. from rural to urban-dwelling citizens during the last half of this century has accelerated to the point that over 75% of U.S. residents now live in urban settings. Although predictably lower than the national average, even in Iowa over 60% of the population lives in town. For some urban dwellers, particularly in large cities, the urban “forest” is the only forest they may have regular contact with. The value of this resource to society is manifold: urban trees and forests improve air quality, sequester carbon, save energy, reduce noise pollution, improve water quality, provide wildlife habitat, and even improve personal health and well-being. Because of the unusual stresses placed on trees (organisms that naturally occur in forests) in most urban settings, intervention and management of the urban forest resource is critical.
A growing number of accredited forestry schools offer coursework and in some cases a major or option in urban forestry (Miller, 1994, Garvin, 1997). In many cases, the urban forestry option in a four-year degree program is closely allied with a traditional resource management specialization or major. Many other institutions offer 2-year technical degrees in urban forestry or arboriculture.

Job opportunities in urban forestry include municipal forestry (city foresters, parks and recreation department positions, or public works), state-level forestry (departments of conservation or natural resources), commercial arboriculture, landscape services, nurseries, consulting, and utility forestry, to name a few. Although municipal forestry opportunities have probably declined somewhat in recent years, the strong demand for expertise in the commercial industry provides excellent opportunities for both seasonal employment and permanent placement for early-career foresters. With the growing number of schools offering degrees in arboriculture or urban forestry, employer demand for students that have obtained specific urban forestry training has also grown. A number of 4-year degree institutions report that students graduating with an emphasis in urban forestry typically receive multiple job offers and can expect to start with jobs at the mid- to upper $20,000 annual salary level, and to progress rapidly (particularly if they elect employment in the private sector).

Recent trends toward ecosystem management and landscape ecology approaches (familiar to many foresters) are now being carried over into the urban landscape and being incorporated in urban/suburban planning and development of sustainable communities. The need for professional foresters in this arena is great! Students with traditional forestry coursework that includes biology, ecology, and watershed/landscape level experience, combined with sociology, political science, landscape design, or community and regional planning will be well-suited to participate in the emerging complex urban and suburban landscape planning process. The importance of this is greatly increased for planning which affects the urban/rural interface, where forest conservation and preservation will need well-trained advocates.

One of the greatest challenges to prospective urban foresters will probably be the public arena in which they will need to operate. One author has indicated that “foresters will need to possess the skills of lawyers, psychologists, teachers, and sometimes even ministers if they hope to work effectively” (Willeke, 1994). Certainly, skills in dealing with all kinds of people having all kinds of interests, and the ability to collaborate effectively with professionals from other disciplines will contribute to the success of future urban and community foresters.

References


Frozen Logger

As I walked out one evening, into a small cafe,
A forty-year-old waitress, to me these words did say:
"I see you are a logger, and not a common bum,
For no one but a logger stirs his coffee with his thumb".

"My lover was a logger, there's none like him today,
If you'd pour whiskey on it, he'd eat a bale of hay.
He never shaved a whisker, from off his horny hide,
He pounded them in with a hammer, and bit them off inside.

"My lover came to see me, 'twas on one freezing day,
He held me in a fond embrace, that broke three vertebrae.
He kissed me when we parted, so hard it broke my jaw,
I could not speak to tell him, he'd forgot his mackinaw.

"I saw my logger lover, a'saundering thru the snow,
Agoing gaily homewards at forty-eight below.
The weather tried to freeze him, it tried its level best,
At 100 below zero, he buttoned up his vest.

"It froze clear down to China, it froze the stars above,
At 1000 below zero, it froze my logger love,
They tried in vain to thaw him, and if you believe me sir,
Theyhammered him into axe blades, to cut the Douglas fir.

"And so I lost my lover, and to this joint I come,
And here I wait till someone, stirs his coffee with his thumb".

This poem was uncovered in the Archives of The Ames Forester.
Bright and early Sunday, October 12, 1996, 33 students and two instructors set out in cars, a truck, and vans: destined for a land full of promise, education, and trees. Steven Jungst and Richard Hall were those instructors and the students were the newest group of Forestry Fall campers. The place we were headed was Mark Twain National Forest in southern Missouri. The camp, run by the University of Missouri, was located at Poplar Bluff in the heart of the Mark Twain National Forest.

We arrived to find six cabins, a classroom, volleyball and basketball courts, horseshoes, and most important, the mess hall. Camp was arranged around a fire pit, which was the focus of many a night's activities. This was the beginning of three weeks of intensive learning in forestry.

The week started by learning dendrology and polishing our pacing skills. Then, our first road trip: East Perry Lumber Company. This was our initial look at a large sawmill operation, and we got to see it all, from the debarking to the final product, 50,000 board feet of which were produced each day. Next, we visited the Forest Service, one of many organizations we were to tour. The rest of the week included lessons in topography, advanced regeneration, and determining site index. The week ended Saturday with a canoe trip down the Current River, learning about hydrology and the special management required for rivers.

Week two opened with the National Park Service and the Army Corps of Engineers. The week continued with the Fisheries and Wildlife Service, the Missouri Department of Conservation, and for Products, a trip to Westvaco Paper Company's timber management facilities based in Wickliffe, Kentucky. At Westvaco, we went on an excellent tour of a plantation. The system consisted of rows of cottonwood trees planted in a crop-like fashion. The trees were then harvested after as little as thirteen years. They also showed us their plan for helping the environmental causes: a 3400 acre waterfowl refuge, established in cooperation with the Kentucky Fisheries and Wildlife Service.

Next, we visited their fiber farm, one of the few fiber farms in the midwest. This was located on a very sandy plot, ideal for fast drainage and growth. The trees were constantly watered and fertilized using a drip-line system. This plantation method produced harvestable trees within eight years.
The final week started with a visit to Pioneer Forest, aptly named due to the management methods applied. The forest is one of the largest privately owned forests in the midwest, and is managed for timber production and uneven-aged forest, an idea once thought impossible. One of the secrets to their success was to employ very meticulous harvesting crews. The result is a forest that does not look harvested and is uneven-aged. Pioneer Forest has become an example for private and public forests alike and is one of the only forests to ever earn awards from both the Forest Service and the Sierra Club.

Our final week included another trip to Westvaco to see their paper mill. Their specialty is premium coated paper and their biggest customer is National Geographic Magazine. The security was very tight, and we were not allowed to take pictures inside the plant. We were not allowed to even visit certain facilities. We did, however, see the pulping, bleaching, and drying processes, and were able to watch the paper being rolled and cut. This was a huge operation, bringing logs and chips in both by truck and train. Mountains of chips lasted only a few days, and 1000 tons of paper were produced daily.

We learned a lot while at camp, some things expected, like the differences between agencies and how to break a log down into lumber. Consider, for instance: we were told that Iowa State University is the only college in the midwest with an excellent forestry program. Even colleges closer to the area lacked the quality of education we take for granted. We also learned about the importance of making good impressions and establishing connections everywhere we go.

Finally, we learned that there are always jobs in forestry. We are only limited by our imaginations and our pride. At last, we took the final test on a chilly, damp morning, ate lunch, and headed home. We arrived with expectations and excitement, and we left with new friends, new insight, twice the experience, and a clearer knowledge of what forestry is all about. We will now head into new forestry classes and our futures with our friends beside us and camp behind us...forever.
This year's Conclave, sponsored by Michigan Tech., was held on September 20-22 at the Ford Forestry Center located near Alberta, Michigan. Those who made the trip enjoyed a sneak preview of the fall colors. It was a 12 hour drive north, which was nothing compared to the 22 hours it took the team from Missouri to get there.

We arrived at the Forestry Center Friday night around five and set up camp. Then we headed into town to have dinner with the locals. Everyone spent that first evening around the campfire getting to know each other and sharing stories.

Saturday morning came way too fast. We were up with the sun, working out the knots and trying to get ready for the competition. This year we were prepared with axes sharpened and teeth on our cant hooks. We knew what we were up against and that in the end, it was all in good fun.

The competition began harshly with the tobacco spit first thing at 8:00 am. Traci Eldridge, Rob Rubsam, and Casey Bourke were the lucky participants representing Iowa State University in that contest. Events went on simultaneously all day long in which we tried to have at least two or three people at each competition cheering on our teammates.

There were a few mishaps throughout the day. Rob Rubsam hooked his foot instead of the log with Pete Smith as his partner in the log roll.
He recovered nicely after a trip to the ambulance and some minor repair work. Also, Pete Smith discovered that the speed chopping axe handle was broken a minute into his bellowing effort to beat the all time record.

In the academic competition Shane Delaney and Mike Lichter placed first and second respectively in wood identification. Shane Delaney also placed fourth in dendrology. The chain throw gave us a third and fourth place from Shane and Rob. Lastly, Traci and Gretchen came in a close second in the women’s log roll after being knocked from first place by the last competitors.

At the end of the day we were tired, but our high spirit carried us into the night. After the awards there was music, dancing and socializing. For those of you who didn’t get to go this year, try to go next year. It is definitely an experience that you will never forget.

Student Participants: Travis Bruch, Casey Bourke, Tony Cline, Traci Eldridge, Nicole Feldman, Jamie Hart, Gretchen Holstein, Mike Lichter, Monte Pope, Laura Revell, Rob Rubsam, Jason Sbiral, Dave Stokesberry, Sylvia Wlordarski, Pete Smith Faculty Chaperone: John Smith

ISU Forestry Alumni present: Joel Skelley.
The Forest Products Society
By Stacy Baza

The Forest Products Society has been pushing on with new ideas to promote interest in the club for new students. One idea was the installation of a new bulletin board outside of room 263 in Bessey Hall. The board contains information on upcoming events, club announcements, and the species of the week. The species of the week display gives information about a particular species of tree. This information includes a sample of wood, a description of anatomical features, and its geographical range.

Our plans for this year were quite extensive. On April 17 and 19, we hosted a guest speaker Dr. Stephen M. Shaler, Associate Professor from the University of Maine-Orono. The topic of discussion was “Microtomography of Wood and Composites.”

A new addition to the department is Associate Professor Doug Stokke. He graduated with a Bachelor of Science degree from Iowa State University, received his Masters degree from University of Minnesota, and his Doctorate Degree from Iowa State University. He was a member of the Michigan Tech faculty for five years and also worked for the USDA Forest Service as a research assistant for five years. Dr. Stokke said that he is glad to be back in Iowa.

Other projects on the drawing board for next year include a Forest Products hat for which the design and logo are still under construction, and the building of a permanent shelter for Cy-Riders at the commuter lot. We are checking into all possible aspects at this point (design, cost, liability, etc.).
The ISU Forestry Club continues to be active in the department. This year the club raised funds by selling Christmas trees. A great amount of work goes into the sale of these trees. Starting in the early spring, the club plants trees at the plantation to replace the ones cut the previous year. In the summer, the larger trees are sheared and the plantation is mowed, which is a big job in itself. Later in the fall, the trees are examined and marked to determine which ones are sellable. Once the trees are marked, the club cuts the trees to be sold, and the cycle ends with the actual sale of the Christmas trees.

The Forestry Club also did a lot of work for VEISHEA this year. The Club joined in the activities by selling blue spruce and white spruce seedlings to people of all ages, and handout proper tree care cards. These seedlings were planted last October by volunteers, and kept in the greenhouse over the long Iowa winter. The trees were thinned once just before Christmas and reached a height of around five inches. Seedling distribution is always a popular activity, almost as popular as the guest appearance of Smokey Bear.

Also at VEISHEA, a group of foresters got together and set up a conclave demonstration which won third place in the open house competition. Many of the students and faculty from the Forestry Department participated. The demonstration featured activities such as the two-person speed saw, the match split, the two-person log roll, and the tobacco spit. These events attracted quite an audience and were successful in promoting some friendly competition within the department.

VEISHEA proved itself to be an all around feel-good weekend, where family, friends, and fellow Iowa Stater's came together to enjoy one another's company and the atmosphere that this magical place creates.
Forester Outtakes - Guess Who!
Wild Game Banquet

This year's Wild Game Banquet was held on March 29, at the Scheman Center. Two of our Seniors, Mark Cory and Rob Zurmuehlen, Co-Chaired the event. The venturous crowd was presented with a menu of venison, antelope, turkey, squirrel, trout, muskrat, redfish, snapper, trigger fish, and goose. The guest speaker, Jim Scheffler, from the Iowa Department of Natural Resources, addressed the audience about the history of conservation in Iowa. The program concluded with the following presentation of awards and scholarships:

- Susan Haselhoff - Freshman Scholarship
- Chris Janda - Evered Ihrig Memorial Scholarship
- Katy Mierson - Evered Ihrig Memorial Scholarship
- Ryan Clark - Gene C. Meyer Scholarship
- Michelle Ludwig - George and Dorothy Thomson Scholarship
- Eric Nielsen - George and Dorothy Thomson Scholarship
- Will Heber - Kenneth D. Obye Scholarship
- Becky Rohwer - J. Milton Cone Memorial Scholarship
- Gretchen Holstein - SAF Senior Full Membership Award
- Eric Nielsen - SAF Fall Sequence Award
- Chris Schrauth - FPS Midwest Section Scholarship
- Becky Rohwer - FPS Book Award
- Ryan Clark - FPS Student Membership Award
- Heather Hartman - Keith Bauer Award
- Tom Schultz - G.B. MacDonald Senior Leadership Award
- Monte Pope - Diamond Hitch Award (Forestry Club President)
- Chad Garrett - Diamond Hitch Award (Ames Forester Co-Editor)
- Tom Schultz - Diamond Hitch Award (Ames Forester Co-Editor)
- Gretchen Holstein - Diamond Hitch Award (SAF President)
- Chad Garrett - Diamond Hitch Award (FPS Chairperson)
- State Forester Bill Ferris, Steve Jungst, and Dick Schultz - SAF Fellow Award
Faculty and Staff
Joe Colletti received his Bachelor's Degree in Forestry from Humboldt State University in 1972. He received his Master of Science in 1974, and his Ph.D. in 1978. Both his M.S. and his Ph.D. are in Forest Economics from the University of Wisconsin, Madison. He has been a member of the Forestry Faculty at Iowa State University since 1978.

**Teaching**
Dr. Colletti has a 55% teaching appointment. His current courses include Multiple Use/Decision Making (FOR 204), Integrated Forestry Laboratory (FOR 205), Forest Resource Management (FOR 452), Forestry Grad. Seminar (FOR 510), Advanced Quantitative Methods in Forestry (FOR 550), Resource Allocation in Forestry (FOR 570), and Advanced Topics in Forest Economics (FOR 654), as well as guest lecturing in, Environmental Issues (ENV ST 425), and Public Lands (ENV ST. 326). Dr. Colletti also chairs the departmental Curriculum Committee.

**Research**
Dr. Colletti has a 45% research appointment. His research emphasis is in the economics of short-rotation woody crops, agroforestry systems, the integration of forestry and agriculture via mathematical programming models, and optimizing private forest resource management.

David Countryman received his Bachelor of Science Degree and his Master of Science Degree in Forest Management from Iowa State University in 1966 and 1968 respectively. He received his Doctor of Philosophy Degree in Forest Management and Planning from University of Michigan in 1973. He has been a member of the Forestry Faculty at Iowa State University since 1975.

**Teaching**
Dr. Countryman has a 62% teaching appointment. His current courses include Multiple Use Decision Making (FOR 204), Integrated Forestry Laboratory (FOR 205), Fire Protection (FOR 390), Resource Policy (FOR 453), Forest Resource Case Studies (FOR 454), and Advanced Forest Resource Management (FOR 594).

**Research**
Dr. Countryman has a 38% research appointment. He is currently conducting research on oak regeneration in midwestern forests. He is also involved in research related to strip cropping with trees which contributes to the departmental Agroforestry research focus.
Richard Faltonson received his Bachelor of Science Degree in Horticulture from Iowa State University in 1977. He has been a member of the Forestry Department since 1970.

Research
Mr. Faltonson has a 100% research appointment. He is a research coordinator/project coordinator for the Iowa State University Agroforestry Research Team (IStART). He specializes in: 1) the propagation and culture of woody plant materials used in temperate agroforestry systems, 2) cultural management of agroforestry systems including riparian buffer strip systems, woody and herbaceous biomass-for-energy systems, woody and herbaceous food crop systems. He is an investigator with Dr. Richard Schultz, Dr. Joe Colletti, and others on the Bear Creek Riparian Buffer Strip Agroforestry Project and the Ames Agroforestry Biomass/Biosolids-for-Energy Project. Mr. Faltonson is also co-leader of a new international agroforestry project involving the Philippines.

Rick Hall received his Bachelor of Science Degree in Forest Management from Iowa State University in 1969. He received his Doctor of Philosophy Degree in Plant Breeding/Plant Genetics (Forestry) from the University of Wisconsin, Madison in 1974. He has been a member of the ISU Forestry Faculty since 1974.

Teaching
Dr. Hall has a 47% teaching appointment. His current courses include Introduction to Forestry (FOR 101), International Renewable Resources (Forestry 120), Silviculture (FOR 302), Forest Tree Improvement and Genetics (FOR 501), Advanced Forest Ecology and Silviculture (FOR 504), and Forest Biology (FOR 602).

Research
Dr. Hall has a 53% research appointment. His research focuses on genetic selection and intensive silviculture. He is currently involved in selection of genetically superior hybrid Poplar for use in short rotation fiber production. Dr. Hall is also a member of the Interdepartmental Genetics Major faculty. Along with Dr. Sande McNabb, Dr. Hall has recently received transgenic hybrid aspen from Nippon Paper Company of Japan as the beginning of a 5-year research project with that company.

Dr. Han just completed a one year appointment in research in Forest Economics. Dr. Han received his Doctor of Philosophy degree in Forest Economics from KyungPook National University in 1995.

Dr. Han conducted research on non-market valuation of Korea and U.S.A. recreation areas and riparian buffer strips.
Roger Hanna received a Bachelor of Science Degree in Forestry from Iowa State University in 1969. In 1972, he received a Bachelor of Science Degree from Iowa State University in Farm Operations. He received his Master of Science Degree in Forestry from Iowa State University in 1985. He has been a member of the Forestry Department since 1984.

Research

Mr. Hanna has a 100% research appointment. His responsibilities as a Research Associate in the Forestry Department involve research on short-rotation woody crops.

Elwood (Woody) Hart earned his Bachelor of Arts Degree in Biology from Cornell College in 1959. He earned his Master of Education Degree in Science Education from Texas A&M University in 1965, and in 1972, he earned his Doctor of Philosophy Degree in Entomology, also from Texas A&M. He came to the Entomology Department in 1974, and was appointed a Professor in Forestry in 1989.

Teaching

Dr. Hart has a 59% teaching appointment in Entomology. In addition to the courses he teaches there, he also teaches courses in Forestry. Those courses include Forest Pest Management (PIP/FOR 416) with Dr. Sande McNabb, and Wood Deterioration and Preservation (FOR 483) with Dr. Monlin Kuo. Dr. Hart also contributes to Community Tree Management (FOR 475).

Research

Dr. Hart's research interest is forest insects in urban and woody biomass plantation systems, including agroforestry. His specific interests are in determining the economic impact of pest species and in the plant-insect interface, particularly in the mechanisms responsible for resistance to attack. Other research is in the study of within-plantation dispersal and the definition and conservation of natural enemy complexes.

Ann Holtz earned her Bachelor of Science Degree from Northwest Missouri State University in 1991 and has been a secretary in the Forestry Department since 1994. Previous to that, she worked with the Registrar's Office at Northwest Missouri State University. She serves as the undergraduate secretary for the department.

Teaching

Ann serves as the advising secretary for undergraduate programs in the Forestry Department. She has responsibilities for maintaining all undergraduate records, while helping students and faculty with necessary paperwork, and assisting with student orientation. Other responsibilities include coordinating department displays, Larson Arts Lottery, and assist the different clubs with their activities.
Tom Isenhart earned his Bachelor of Science Degree in Botany and Environmental Studies from Iowa State University in 1983. He earned his Master of Science Degree in Water Resources from Iowa State University in 1988, and in 1992, he earned his Doctor of Philosophy Degree from Iowa State University in Water Resources. Tom joined the Forestry Department as a Postdoctoral Research Associate in 1994. Prior to joining the Department, Tom was a Temporary Assistant Professor in the Department of Animal Ecology where he taught classes in aquatic ecology.

Research
Dr. Isenhart has a 100% research appointment with research interests in aquatic and riparian ecosystem ecology. He is currently conducting research in landscape or watershed-scale riparian and wetland buffer zones, and in the biogeochemistry of nitrogen in aquatic and riparian systems.

Steve Jungst received his Bachelor’s Degree in Forestry with an option in Forest Resource Management from Iowa State University in 1969. He received his Master of Science Degree in Forestry (Biometry) in 1976, and his Ph.D. in Forestry (Biometry) from Iowa State University in 1978. He has been a member of the Forestry Faculty since 1974.

Teaching
Dr. Jungst has a 60% teaching appointment. His current courses include Integrated Forestry Laboratory (FOR 205), Management of Small Forest Properties (FOR 310), Natural Resource Photogrammetry and Photo Interpretation (FOR 445), and Seminar (FOR 510).

Research
Dr. Jungst has a 40% research appointment. His research interests are in remote sensing and use of Geographic Information Systems. He is currently conducting research on the Bear Creek Watershed as a part of the department’s focus on agroforestry research.

Mike Kelly received his Bachelor of Science Degree in Biology from East Tennessee State University in 1966. He received his Master of Science Degree in Plant and Soil Science from University of Tennessee in 1968, and in 1973, he received his Doctor of Philosophy Degree from University of Tennessee in Forest Ecology and Soils. He assumed duties as the 7th Chair of the Department of Forestry in October, 1995.

Teaching
Although approximately 75% of Dr. Kelly’s time is devoted to administrative duties in the department, he does contribute to the teaching program. Dr. Kelly’s current responsibilities include co-instruction of Forest Resource Case Studies (For 454) and Publishing in Plant Science Journals (Hort 529).

Research
Dr. Kelly’s research interests are currently focused on the development of a mechanistic model of tree nutrition. In addition to his other duties, Dr. Kelly also serves as the advisor of the Forestry Graduate Student Organization.
Monlin Kuo received his Bachelor of Science Degree in Forestry from Chung-Hsing University in 1965. He received his Master of Science Degree in Wood Science from University of Missouri, Columbia in 1971, and in 1977, he received his Doctor of Philosophy Degree in Wood Science and Technology from University of California, Berkeley. Dr. Kuo joined the Forestry faculty at ISU in 1980.

**Teaching**

Dr. Kuo has a 49% teaching appointment. His current teaching responsibilities include Harvesting & Wood Utilization (FOR 202), Integrated Forestry Laboratory (FOR 205), Chemical Conversion of Wood (FOR 481), Wood Deterioration and Preservation (FOR 483), Mechanical Conversion and Physical Properties (FOR 487), and Advanced Topics in Wood Science (FOR 587).

**Research**

Dr. Kuo has a 51% research appointment. His research interests are in the area of wood bonding. He is currently conducting research on the use of corn starches as an additive to wood adhesives.

Floyd Manwiller received his Bachelor of Science Degree in Forestry from Iowa State University in 1961. In 1966, he received his Doctor of Philosophy degree from Iowa State University in Forestry with an emphasis on Wood Science and Plant Cytology. Before joining the faculty at Iowa State University, he served as Principal Wood Scientist for 12 years with the U.S. Forest Service Southern Forest Experiment Station in Louisiana. He joined the Iowa State University Faculty in 1978.

**Teaching**

Dr. Manwiller has a 70% teaching appointment. His current teaching responsibilities include Orientation in Forestry (FOR 110), Harvesting/Wood Utilization (FOR 202), Integrated Forestry Laboratory (FOR 205), Wood Anatomy and Properties (FOR 280), Wood Identification Adhesive (FOR 281), Bonded Wood Products (FOR 485), and Wood Drying (FOR 486). Dr. Manwiller also serves as Advising Coordinator for the department and advises half of the new Freshmen, Sophomore, and Transfer Students in the department.

**Research**

Dr. Manwiller has a 30% research assignment. His research interests lie in the area of wood anatomy.

Joel McMillin received his Bachelor of Science in Biology from the University of Iowa in 1986. Joel worked with the Peace Corps in the Philippines as an agro-forestry extension agent from 1986 - 1988. He received his Master of Science in Forestry from Northern Arizona University in 1992, and in 1996, he earned his Doctor of Philosophy Degree in Biology from Northern Arizona University. Before coming to the Forestry Department as a post-doctoral research associate in November 1996, he taught courses in forest pest management and forest entomology in the School of Forestry at Northern Arizona University.

**Research**

Dr. McMillin has a 100% research appointment. His research interests include: interactions among woody plants, insect herbivores, and natural enemies of insects; mechanisms of host plant resistance to insect herbivores; and the role of insect herbivores in forest ecosystems and in forest health. He is currently involved in the development of pest-resistant Poplar clones for use in short rotation fiber production in cooperation with Drs. Hall, Harrington, Hart, and McNabb.
Sande McNabb earned his Bachelor of Science Degree from University of Nebraska-Lincoln in Botany and Chemistry in 1949. He received his Master of Science Degree in Plant Science and Forestry from Yale University in 1951, and in 1954, he received his Doctor of Philosophy Degree in Forest Pathology and Plant Physiology, also from Yale University.

**Teaching**
In addition to his teaching responsibilities in Plant Pathology, Dr. McNabb also teaches in the Forestry Department. He participates in Wood Deterioration and Preservation (FOR 483), Community Tree Management (FOR 475X), and he team teaches Forest Pest Management (PIP/FOR 416) with Dr. Elwood (Woody) Hart.

**Research**
Dr. McNabb’s research interests lie in the area of forest pathology, wood deterioration, and in vitro (including genetic transformation) culture of woody plants. Dr. McNabb and Dr. Richard Hall have recently received transgenic hybrid aspen from Nippon Paper Company of Japan as the beginning of a 5-year research project with that company.

Jan Meyer came to the Forestry Department in April, 1997 with 18 years background in educational administration and 6 years experience with office, grant proposals and budget management. Her position as Administrative Specialist is as a supervisor, monitor of budgets, grants, and contracts, and department liaison with students and the public. She is working towards a Masters Degree in Public Administration with coursework in budgeting, personnel management, research, and public policy. Jan will provide grant writing support and budget development to faculty.

Carl Mize received his Bachelor of Arts Degree in Math and Chemistry from Brockport State University in 1969. He received his Master of Science Degree in Forest Ecology from Humboldt State College in 1973, and in 1977, he received his Doctor of Philosophy Degree in Quantitative Silviculture from the College of Environmental Science and Forestry, SUNY. Dr. Mize has been a member of the Department of Forestry at Iowa State University since 1977.

**Teaching**
Dr. Mize has a 29% teaching appointment. His current teaching responsibilities include Resource Measurements and Evaluation (FOR 203), Integrated Forestry Laboratory (FOR 205), Dynamics of Forest Stands (FOR 342), and Forest Biometry (FOR 543).

**Research**
Dr. Mize has a 71% research appointment. His research interests lie in the area of forest biometry, forest growth and yield, and agroforestry. He is currently conducting research on growth and yield of hybrid poplars in midwestern settings and on modeling the impacts of field shelterbelts on crop production.
Patricia Negreros-Castillo earned her Bachelor of Science Degree in Agro-Chemistry in 1976 from the University of Puebla, Mexico. She earned her Master of Science Degree in Ecology and Natural Resource Management in 1983 from the National Research Institute for Biotic Resources in Xalapa, Mexico, and in 1991, she earned her Doctor of Philosophy Degree in Forestry with emphasis in Biology from Iowa State University. She has been with the Department of Forestry at Iowa State University as an Associate Scientist since 1994.

**Teaching**

Dr. Negreros-Castillo’s teaching duties involve Forest Biology (FOR 201), Integrated Forestry Laboratory (FOR 205), and Agroforestry Systems (FOR 560X).

**Research**

Dr. Negreros-Castillo has a 100% research appointment. Her research interests are in the area of tropical silviculture and agroforestry. She is currently developing a research project which will contribute to the department’s research focus in agroforestry.

Dean Prestemon received his Bachelor of Science Degree in Forestry with an Option in Wood Products from Iowa State University in 1956. He received his Master of Science Degree in Wood Technology in 1957 from the University of Minnesota, and in 1966, he received his Doctor of Philosophy Degree in Forestry (Wood Science) from the University of California. Dr. Prestemon has been a member of the Forestry Department at Iowa State University since 1965.

**Teaching**

Dr. Prestemon has a 9% teaching appointment. He teaches “Wood Use and Construction” (FOR 488) and team teaches “Harvesting/Wood Utilization” (FOR 202), and “Integrated Forestry Laboratory” (FOR 205).

**Extension**

Dr. Prestemon has a 91% extension appointment. His specialty areas include proper use of wood in structures, timber processing and marketing, and physical properties of wood.

Charles (Chuck) Rodrigues received his Bachelor of Science Degree in Chemistry from Southeastern Massachusetts University in 1985. In 1990, he received his Master of Science Degree in Plant Pathology from Iowa State University. Before coming to the Forestry Department as a Research Associate, he worked as a field/lab technician for ICI Seeds. Chuck joined the Forestry Department in 1993.

**Research**

Mr. Rodrigues has a 100% research appointment. His responsibilities involve supervision of the Forest Biology research laboratories, assistance with research projects utilizing those research spaces, and research involvement in water quality related to riparian buffer strips.
Lita Rule received her Bachelor of Science Degree in Forestry Extension from University of the Philippines at Los Banos in 1975. She received her Master of Science Degree in Forest Resources Management from University of the Philippines in 1982, and in 1988, she received her Doctor of Philosophy Degree in Forest Economics from Texas A&M University. She has been a member of the Forestry Department at Iowa State University since 1989.

Teaching
Dr. Rule has a 41% teaching appointment. Her current teaching responsibilities include Multiple Use Decision Making (FOR 204), Integrated Forestry Laboratory (FOR 205), Forest Resource Economics and Quantitative Methods (FOR 451), Forest Resources Management (FOR 452), and Forest Resource Policy and Administration (FOR 453).

Research
Dr. Rule has a 59% research appointment. Her research interests lie in the area of agroforestry and forest industry with emphasis on forest economics.

Richard Schultz received his Bachelor of Science Degree in Forestry with an Option in Forest Management from Iowa State University in 1965. He received his Master of Science Degree in Forest Biology from Iowa State University in 1968, and in 1970, he received his Doctor of Philosophy Degree, also in Forest Biology from Iowa State University. He joined the Forestry faculty at Iowa State University in 1979.

Teaching
Dr. Schultz has a 51% teaching appointment. His current teaching duties include Forest Ecology (FOR 301), Forest Watershed Management (FOR 407), Agroforestry Systems (FOR 475X), Advanced Forest Ecology and Silviculture (FOR 504), Adv. Topics in Forest Biology (FOR 602), and Tree Growth and Development (FOR 603).

Research
Dr. Schultz has a 49% research appointment. His research interests are in Forest Ecology and Hydrology; Agroforestry with emphasis in the ecology and hydrology of riparian zone management systems, short-rotation woody crops, agroforestry systems, and the integration of forestry and agriculture.

John Smith received his Bachelor of Science Degree in Forestry from Iowa State University in 1994. He joined the Department as a Research Associate in Wood Science in 1995.

Research
Mr. Smith has a 100% research appointment. His responsibilities involve oversight of the wood science laboratories and wood processing facilities. He provides research support for the wood science faculty, and assists graduate students with research involving the wood science facilities.

He is currently involved in supervision of students working on research associated with a grant from the Iowa Soybean Promotion Board to explore the use of soy protein in wood adhesives.
Kim Stephens has been a secretary in the Forestry Department since April, 1996. Previous to that, she worked in Education Student Services on the Iowa State University campus and at the Dean of Students Office. If you call the department, there is a good chance that the first voice you hear will be hers.

**Teaching**  
Kim serves as the secretary for graduate programs in the Forestry Department. In that role, she has responsibilities for maintaining graduate records, serving on the departmental Graduate Admissions Committee, and for assisting graduate students with necessary paperwork related to their graduate study.

**Extension**  
Kim also works with the extension foresters in the department. She handles requests for extension publications, directs extension inquiries to the proper faculty or staff extension personnel, and assists with maintenance of extension publication supplies.

Doug Stokke earned his Bachelor of Science from Iowa State University, his Masters Degree from the University of Minnesota, and his Doctorate degree from Iowa State University. He was a member of the faculty at Michigan Technological University for five years and has also been a Forest Products Technologist with the USDA Forest Service for the past five years.

**Research**  
Doug is currently assigned to the USDA Forest Service, Northern Forest Experiment Station’s Princeton, West Virginia Unit. The unit’s mission is to conduct research on resource characteristics, forest management practices, and innovative processing technologies and their influence on conversion efficiency in solid wood processing. As a “Virtual employee” stationed here in Ames, Doug conducts most of his work by phone, fax, and email.

Jan Thompson earned her Bachelor of Science Degree in Forestry Soils from Michigan Technological University in 1981. She earned her Master of Science Degree in Agronomy from Iowa State University in 1984, and in 1991, she earned her Doctor of Philosophy Degree in Forestry with emphasis in Biology from Iowa State University. She joined the Forestry Department as an Associate Scientist in 1994.

**Teaching**  
Dr. Thompson’s current teaching responsibilities involve Forest Biology (FOR 201), Integrated Forestry Laboratory (FOR 205), and Community Tree Management (FOR 475X).

**Research**  
Dr. Thompson has a 100% research appointment. Her research interests are in forest biology, nursery production, and urban forestry.
Mark Vitosh received his Bachelor of Science Degree in Forestry with an Option in Forest Management from Iowa State University in 1988. Before returning to the Department as an Extension Program Assistant, he worked as a Service Forester with the Oklahoma Department of Agriculture for four years, and as a Research Associate with the Department of Plant Pathology at Iowa State University for 1 year. He has been a member of the Forestry Department since 1994.

Extension
Mr. Vitosh has a 100% appointment in Extension. His responsibilities include program coordination for all Extension Forestry Urban & Community Forestry Programs and Youth Education Programs. Specific program responsibilities include the Iowa Community Tree Steward Program, Iowa Community Tree Workshop Program, and the Tree Steward Program For Youth. He also assists individuals with inquiries relating to urban and community forestry and woodland management. Although he has no formal teaching appointment in the department, he has provided assistance in teaching Community Tree Management (FOR 475X).

Paul Wray received his Bachelor of Science Degree in Forestry with an option in Forest Management from Iowa State University in 1968. In 1974, he received his Doctor of Philosophy Degree from Iowa State University in Forest Biology. Dr. Wray’s professional interests are in forest management, biology, Christmas trees, windbreaks, and Extension education. He has been a member of the Iowa State University Forestry Department since 1975.

Extension
Dr. Wray has a 100% Extension appointment. His duties in Extension include coordinating Forestry Field Days, Forestry Educational Programs, and Windbreak Schools. He also assists individuals with inquiries relating to all aspects of woodland management and urban and community forestry.
Students
Graduating Seniors

**Casey Bourke**
Degree(s): Bachelor of Science in Forest Management.

**Traci J. Eldridge**
Degree(s): Associate of Arts, Associate of Science, Bachelor of Science in Forest Management.

**Travis Bruch**
Degree(s): Bachelor of Science in Forest Management.

**Chad R. Garrett**
Degree(s): Bachelor of Science in Forest Products.

**Dave Douglas**
Degree(s): Bachelor of Science in Forest Management.

**Gretchen Holstein**
Degree(s): Bachelor of Science in Forest Management.

**Megan J. Dvorak**
Degree(s): Bachelor of Science in Forest Management, and a Minor in Environmental Studies.

**Jesse Iverson**
Degree(s): Bachelor of Science in Forest Management.
Graduating Seniors

Mike Lichter
Degree(s): Bachelor of Science in Forest Management.

Monte Pope
Degree(s): Bachelor of Science in Forest Products.

Allan Rutz
Degree(s): Bachelor of Science in Forest Management.

Jason Sbiral
Degree(s): Bachelor of Science in Forest Management.

Tom Schultz
Degree(s): Bachelor of Science in Forest Management.

George Zaimes
Degree(s): Bachelor of Science in Forest Management.

Graduating Seniors Not Pictured:

December 1996
Anthony Cline - Forest Products
Jeff Cronin - Forest Products
Shane Delaney - Forest Management
Aron Flickinger - Forest Management
John Nahas - Forest Management

May 1997
Mandy Billeb - Forest Management
Shane Bruning - Forest Management
Sasha Giunta - Forest Management
Bryan Hendricks - Forest Management
Brian Lewis - Forest Management
Peter Smith - Forest Management
James VanHatten - Forest Management
## Forestry Students

### Seniors

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<tr>
<th>Dustin Bachtell</th>
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<td>Robert Beane</td>
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<td>David Stokesberry</td>
<td>Jason Clapper</td>
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<td>Dustin Svec</td>
<td>Brian Dirks</td>
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<td>Aaron Tolzmann</td>
<td>William Ekwall</td>
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<td>James VanHatten</td>
<td>Matthew Farrell</td>
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<td>Kirk Webb</td>
<td>Robert Fink</td>
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<td>George Zaimes</td>
<td>Jeremy Fritz</td>
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<td>Rob Zurmuehlen</td>
<td>Matthew Grubisch</td>
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<td>Jamie Hart</td>
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<td>Heather Hartman</td>
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<td>Randy Johnson</td>
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<td>Joseph Kenyon</td>
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<td>Brannon Kirk</td>
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<td>Ben Kuennen</td>
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<td>Eric Nielsen</td>
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<td>Scott Schuler</td>
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### Juniors

<table>
<thead>
<tr>
<th>Michelle Skibsted</th>
<th>Emily Stauffer</th>
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<tbody>
<tr>
<td>Logan Tjossem</td>
<td>Faith Vawter</td>
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### Freshmen

| Sarah Baker       |                     |
| Dan Baumann      |                     |
| Curtis Brown     |                     |
| David Carter     |                     |
| Matt Clark       |                     |
| Peter DeGroot    |                     |
| Michael Gustafson|                     |
| Todd Helder      |                     |
| Eric Holzmueller |                     |
| Joel Jepsen      |                     |
| Karen Johlas     |                     |
| Corinne Kinnaman |                     |
| Thomas Kitt      |                     |
| Amber Mayo       |                     |
| Seth Merrill     |                     |
| Jason Severe     |                     |
| Wayne Spohnheimer |                   |
| Tyler Stanley    |                     |
| Joshua Sterling  |                     |
| Thad Stockham    |                     |
| Brad Struck      |                     |
| Sylvia Wlodarski |                     |

### Sophomores

| Abdu Abdelkadir  |                     |
| Rino Bae         |                     |
| Luna Bharati     |                     |
| Sakoro Budiatmoko|                     |
| Fabrice DeClerck |                     |
| Bill Edwards     |                     |
| Bonnie Green     |                     |
| Jim Gubbels      |                     |
| Shabana Hameed   |                     |
| Abugarshall Kai  |                     |
| Andy Kaufman     |                     |
| Edi Kurniadi     |                     |
| Kye-Han Lee      |                     |
| Ziqiang Lu       |                     |
| Rick Maiers      |                     |
| Maman            |                     |
| Carmen Marquez   |                     |
| Chip Murrow      |                     |

### Graduate Students

| Scott Schuler   |                     |
| Chip Murrow     |                     |
Joyce Pickle
Joko Pramono
Prayitno
Xizoming Qi
Morris Rule
Fernandes Sembiring
Elif Semen
Marcella Szymanski
Girma Melesse Tabor
Aydin Tufekcioolu
Ju Wang
Walter Woolfolk
In Yang
Jing Zhang

Other Recent Graduates:

December 1996
Christopher Ball - M.S. Forest Economics
James Gubbels - M.S. Forest Biology
Zhiqun Liu - M.S. Wood Science
John Tyndall - M.S. Forest Administration and Management
Robert Bardon - Ph.D. Forest Biology and Wood Science

Spring 1997
Luna Bharati - M.S. Water Resources
Ju Wang - M.S. Forest Biology
Jing Zhang - M.S. Forest Economics and Marketing

Abdu AbdelKadir - Ph.D. Forest Biology and Wood Science

Summer 1997
Joko Pramono - M.S. Forest Biometry
Elif Semen - M.S. Wood Science

Marcella Brian Szymanski - Ph.D. Forest Economics